STATE OF MAINE
OFFICE OF THE GOVERNOR
AUGUSTA, MAINE
04333

JOHN R. McKERNAN, JR.
GOVERNOR

January 4, 1990

Major General R. S. Kem
United States Army
Deputy Commander
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Thank you for your letter of December 14, 1989 soliciting recommendations for use of the Army Corps of Engineers in providing recreational opportunities.

After forwarding your letter to my Adjutant General, Ernest C. Park, I received the attached memorandum. I hope that you find this memorandum responsive to your request.

Please feel free to contact General Park if you require additional information.

Again, thank you for seeking our input.

Sincerely,

John R. McKernan, Jr.
Governor

JRM/mpm

Attachment

DEPARTMENT of DEFENSE VETERANS SERVICES
CAMP KEYES ★ AUGUSTA, MAINE 04333 ★ (207) 622-9331

MENG-TAG 26 December 1989

MEMORANDUM FOR The Honorable John R. McKernan Jr., Governor, Attention: Mr. Derek Langhauser, State of Maine, State Office, Augusta, Maine 04333

SUBJECT: Request for Ideas

1. Reference:

a. Letter to The Honorable John R. McKernan Jr., Governor, State of Maine, from Department of The Army, dated 19 December 1989.

b. Memorandum, Log number 020548, subject: Seeking input and ideas, dated 19 December 1989.

2. Reference b. solicited our ideas to support the request from the Army Corps of Engineers in their effort to establish a Recreation Task Force. We, in Defense and Veterans Services, recognize as pointed out by MG Kem, that the Corps of Engineers has no water resource development projects in Maine. However, should the Corps undertake a project similar to Maine Street 90, on a national scale, states, municipalities, service and fraternal organizations could be mobilized to adopt and sponsor portions of major Corps projects or operations. This type of alliance would foster ownership and grass roots support and broaden the support and resource base. At the same time it would draw on the many and varied resources of the private sector. It is obvious that National Legislative support would be necessary to include House and Senate resolutions and National News coverage. Additional support and assistance could possibly come from Army and Air National Guard units when there is a training benefit to be derived.

3. I feel this dynamic solution may prove to be a large task, but the rewards of such a venture would be far-reaching.

Ernest C. Park

ERNEST C. PARK
Major General MEANG
The Adjutant General

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

MICHAEL S. DUKAKIS
GOVERNOR

JOHN DEVILLARS
SECRETARY

January 17, 1990

R.S. Kem
Major General, U.S. Army
Dept. of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Governor Dukakis has asked me to respond to your letter concerning the creation of the Army Corps' Recreation Task Force. It is commendable that in this day of budget deficit reduction efforts, the Army Corps of Engineers has recognized the importance of public recreation and is taking steps to enhance opportunities for the citizen's of the Commonwealth.

Enclosed for your review is a copy of the most recent Statewide Comprehensive Outdoor Recreation Plan. This plan may give you some insight into the critical deficiencies in recreational facilities in the state. Over the years state planners' have identified the need for more public facilities for water based activities as well as public access to the coast.

I have forwarded a copy of your letter to Kathy Smith, Bureau Chief of Recreation in the Division of Forest and Parks. She will distribute this information to Regional Supervisors within th Division. She will also distribute this information to the Department of Fisheries and Wildlife and the Metropolitan District Commission, coordinate their responses and get back to you in February. If you have any further questions please give Kathy a call at (617)727-3184.

Thank you for your efforts here in Massachusetts. I hope our environmental agencies together with the Army Corps of Engineers can continue work together to enhance the quality of living for all citizens of the Commonwealth.

Sincerely,

John P. DeVillars
Secretary

JPD/maf

100 CAMBRIDGE STREET, BOSTON, MA 02202 (617) 727-9800

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Management

100 Cambridge Street
Boston
Massachusetts
02202

Division of
Forests and Parks

March 6, 1990

R.S. Kem
Major General, U.S. Army
Dept. of the Army
U.S. Army Corps of Engineering
Washington, D.C. 20314

Dear Major General Kem,

Attached are copies of the responses I have received from the Regional Supervisors related to your December 14, 1989 memo to Governor Dukakis on the ACOE's Recreational Task Force. If you have any questions or concerns please call me at 617-727-3184.

Sincerely,

Kathryn Joyce Smith

Kathryn Joyce Smith
Bureau Chief of Recreation

KJS/maf

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Management

PO Box 155
Clinton
Massachusetts
01510
(617) 368-0126

Division of Forests & Parks Region 3

M E M O R A N D U M

TO: Kathryn J. Smith, Chief of Recreation

FROM: Don S. Stoddard, Regional Supervisor

SUBJ: U.S. Army Corps of Engineers

DATE: February 12, 1990

The following C.O.E. Projects fall within Region 3.

Forests and Parks Control	Other Agencies
1. Birch Hill Dam (sublease F&W) includes Lake Dennison	1. Barre Falls, Fish & Wildlife
2. East Brimfield Dam includes Holland & Streeter	2. Buffumville-C.O.E.(reverted back)
3. Tully Lake	3. Hodges Village-F&W and Town
	4. West Hill-F&W
	5. Westville-F&W and Town

A. Policies that need to be looked into, for consistancy to Mass General Laws and/or D.E.M. Rules & Regulations.

1. Rec. vehicles on Federal lands verses D.E.M. lease lands.
2. Issuing of permits for:
   a. Docks
   b. Moorings
   c. Recreation Areas (private)
   d. Agricultural
3. Access across lease land to the recreational pool.
4. Whose regulations are being violated, State or C.O.E., which takes precedence.

B. Incentives

1. Capital cost, on improvements and/or replacements at existing facilities.
2. Develop mobile buildings that can be moved out during flooding of the area. Buildings are currently designed to be submerged but water damage to gas heaters, electrical outlets, stall partitions, etc., still occurs. Silt also tends to damage flushmeters.

C. 1. Use of Reserves (Army) and/or regular military units for construction could reduce costs on major projects.

D. 1. Curtailment of certain private use by abuttors relating to the recreational pool, may occur. If and/or when agreement can be reached as to whose regulations apply at each lease area, activities currently allowed may have to cease.

2. Tighter control of access into these areas may cause changes to, and/or eliminate certain recreational activities at certain times of the year.

If there are any meetings that evolve out of this Task Force, please keep me in mind, in that approximately half of the areas are within Region 3.

Don S. Stoddard
Regional Supervisor

DSS/JJT/mw

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Management

DIVISION OF WATERWAYS

100 Cambridge Street
19th Floor
Boston, MA 02202
(617) 727-8893

349 Lincoln Street
Bldg. #45
Hingham, MA 02043
(617) 740-1600

To: Kathyrn Joyce Smith, Chief of Recreation

From: Eugene F. Cavanaugh, Director

Date: January 29, 1990

RE: Federal Assistance for Recreational Programs

The Division is very interested in the prospect of federal assistance with recreational facilities in our coastal and inland waters.

R. David Clark represents the Division on the Public Access Board and I have assigned him to work with you in this matter. He is reviewing your memo and will prepare a response for me.

Please contact him at 740-1602 if you have any questions.

EFC: mc

March 8, 1990

Serial No. 263-90
File No. B 8.23

Major General R.S. Kem
U.S. Army, Deputy Commander
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Governor Blanchard has requested that I respond to your letter of December 14, 1989 concerning the Recreation Task Force.

As suggested in your letter, staff has contacted Mr. Dave Wahus, and he provided additional information concerning both sites identified in Michigan.

In response to the identified issues:

1. There are no existing state laws, policies or other constraints that deter greater involvement by non-federal interests. Federal law prevents charging fees to recreation users and is a financial discouragement for non-federal involvement.

2. State and local governments are being squeezed by federal disinvestment. Financial incentives must be considered.

3. None identified.

4. None identified.

In Michigan, the state through our Department has assumed responsibility for operating a Corps lock structure at Alanson. The lock is for water control as well as recreational boat passage. Because the Corps has refused to financially support the locks operations for recreational craft, a significant financial burden has been shifted to the state with no opportunity to recoup costs by charging fees.

Of the two projects identified on "enclosure one" with your letter, the lower Keweenaw entry waterway includes a boat launching site that provides significant public recreation. The site is compatible with our access site program and we are willing to lease the property from the Corps and operate the site ourselves, rather than have it closed.

The site identified on the St. Mary's River is an observation platform and picnic site associated with the Corps Visitor Center at the Soo Locks. We do not have a state program compatible with the operation of this facility, but perhaps the City of Sault Ste. Marie would be able to assist the Corps in the operation of this site. They should be contacted by you directly.

It is indeed unfortunate that recreation facility support is given low budget priority by the Corps. I am sure this action will reduce public support for other Corps programs. I know it has placed a financial burden on the states.

I trust this responds to your request.

Sincerely,

O.J. Scherschligt, Chief
Recreation Division
517-335-4827

OJS/LRN/mr
cc: Dave Wahus
Art Klawiter
Mike Cieslinski

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

500 LAFAYETTE ROAD, ST. PAUL, MINNESOTA 55155-4037

OFFICE OF THE COMMISSIONER

DNR INFORMATION
(612) 296-6157

February 22, 1990

Major General R. S. Kem
Deputy Commander
Department of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Governor Rudy Perpich has shared your letter with me in which you requested input on the Corps' operation of recreational facilities in Minnesota.

I strongly believe that the projects the Corps manages for recreational purposes should be kept open. Not only do they provide Minnesota and neighboring state's citizens with recreational opportunities on water, but also add to the local economy by bringing in tourist dollars. I understand your concern about the need for more operation and maintenance dollars. We have the same type of need in Minnesota and maintenance dollars are the most difficult funds to obtain. However, since the Corps has provided these facilities for years, the public has become accustomed to using them and expect that they will remain open and in federal ownership.

I applaud your efforts to consider alternative sources of funding. However, I believe it is imperative that you continue to attempt to obtain funds at the federal level. The Corps, I believe, has an ongoing responsibility to provide recreational opportunities on its public lands.

Please keep me informed of your progress.

Yours truly,

By Helen S. Thorne, Deputy
Joseph N. Alexander
Commissioner

STATE OF MISSISSIPPI

OFFICE OF THE GOVERNOR
RAY MABUS
GOVERNOR

January 4, 1989

R. S. Kem
Major General, U.S. Army
Deputy Commander
U. S. Army Corps of Engineers
Washington, D. C. 20314

Dear General Kem:

Thank you for your recent letter soliciting our State's comments on the development of your public recreational enhancement plan for U. S. Army Corps of Engineers projects in Mississippi.

A high priority of my administration is providing more high quality outdoor recreational opportunities in Mississippi. I am very pleased to learn of your agency's interest in expanding the recreational opportunities in the areas under its control and, in doing so, assisting us in providing more outdoor recreation areas for our citizens and the visitors to our State.

I am forwarding your letter to Mr. Vernon Bevill, Executive Director of the Department of Wildlife, Fisheries and Parks, for his review and the development of our input into this planning process. I feel certain that we can agree upon some ideas that will be beneficial to your program and compliment the language plans being developed for state-owned land.

Thank you again for inviting us to participate in this worthwhile endeavor. If I or my staff may be of any further assistance to you, please feel free to contact us.

Sincerely,

RAY MABUS
Governor

RM:MG:rc

cc: Mr. Vernon Bevill

POST OFFICE BOX 139, JACKSON, MISSISSIPPI 39205 601-359-3100
FAX 601-359-2917

JOHN ASHCROFT
Governor

G. TRACY MEHAN III
Director

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

OFFICE OF THE DIRECTOR
P.O. Box 176
Jefferson City, MO 65102
314-751-4422

Division of Energy
Division of Environmental Quality
Division of Geology and Land Survey
Division of Management Services
Division of Parks, Recreation,
and Historic Preservation

January 4, 1990

Mr. Dave Wahus, Executive Director
Recreation Task Force
Department of the Army, CECW-ZR
20 Massachusetts Avenue, N.W.
Washington, D.C. 20314-1000

Dear Mr. Wahus:

This letter is in response to correspondence recently sent to Governor Ashcroft from Major General R. S. Kem of the U.S. Army Corps of Engineers.

The mission of the Missouri state park system is to preserve the outstanding natural and cultural features of the state, and to provide unique outdoor recreation opportunities. For this reason, we would not be interested in any of the Corps of Engineers' recreation areas unless they truly contributed to this mission. Each area would have to be considered on its own merit.

I would like to offer two suggestions that might help the Corps of Engineers reduce their costs on public work projects. First, the Corps might consider entering into longer term leases, such as 50-year leases, on recreation areas with public entities. This may provide an additional incentive to lessees and would reduce your costs in leasing. Second, taking the first suggestion a little further, the Corps might consider divesting its interest in recreation areas. The Corps' interest could be protected by reversionary covenants in the deed. This would eliminate the entire leasing aspect of your operation.

On a final note, you may also want to contact the Missouri Department of Conservation to see if they might be interested in any of the recreation lands.

If you have any questions, please contact Mr. Wayne E. Gross, director of the Department of Natural Resources' Division of Parks, Recreation, and Historic Preservation at 314/751-2479.

Very truly yours,

DEPARTMENT OF NATURAL RESOURCES

G. Tracy Mehan, III
Director

GTM:ggm
cc: Governor John Ashcroft

STATE OF NEBRASKA

KAY A. ORR, GOVERNOR

January 10, 1990

Major General R.S. Kem
Deputy Commander, Department of The Army
U.S. Army Corps of Engineers
Washington, DC 20314

Dear Major General Kem:

In your recent letter you requested my input in the development of a plan to enhance public recreational opportunities at Corps of Engineers water projects in Nebraska. You cited increasing federal budget constraints and indicated the Corps is seeking new strategies to reduce federal expenditures without having to defer maintenance or close recreational facilities. The thrust of your request appears to center on developing a program to transfer financial responsibility for development and maintenance of federally-owned recreational facilities at Corps projects to non-federal agencies and the private sector.

Your letter and accompanying listing of Corps water projects in Nebraska has been shared with the Nebraska Game and Parks Commission, the state agency in Nebraska responsible for managing our outdoor recreation, fish and wildlife resources. The Commission confirms the tremendous importance of federal water projects, including Corps of Engineer lakes, to outdoor recreation in Nebraska but questions the relevance of the proposed plan to our state. With the single exception of Harlan County Lake, responsibility for recreational development and operation of the remaining fourteen Corps lakes has already been transferred to non-federal public agencies. Eleven of the fourteen lakes are administered by the Game and Parks Commission with the remainder by other political subdivisions.

You have asked what type of incentives are needed to build federal/non-federal partnerships to better serve recreational demand. We don't have a good answer to that, only a question of our own: What assistance can the State of Nebraska expect from the federal government that will help enable us to sustain and enhance our existing partnership with the Corps of Engineers? Nebraska has worked hard to uphold its end of the partnership, investing considerable sums of money in the development, operation and maintenance of these eleven areas. Despite our best efforts, facilities remain inadequate to meet demand and, in some instances, are nearing the end of their useful life without major rehabilitation. We doubt Nebraska's situation is particularly unique among western states and suggest consideration be given in the Corps' plan for financial assistance to states which have previously assumed these responsibilities.

OFFICE OF THE GOVERNOR, BOX 94848, LINCOLN, NEBRASKA 68509-4848, PHONE (402) 471-2244

We thank you for this opportunity to comment and wish you and the Corps of Engineers success in this worthy effort.

Sincerely,

KAY A. ORR,
Governor

KAO/JJC/br

cc: Rex Amack, Director, Game and Parks Commission

STATE OF NEVADA
EXECUTIVE CHAMBER
Carson City, Nevada 89710

BOB MILLER
Acting Governor

TELEPHONE
(702) 885-5670

February 2, 1990

R.S. Kem, Major General
Deputy Commander
Department of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Thank you for writing. I appreciate the opportunity to comment on means to enhance public recreational opportunities at Corps water resource projects.

In response to the specific questions you have raised, I have the following comments:

1. As you have mentioned, there are no Corps projects in Nevada. It is, therefore, difficult to identify any "existing laws, policies, or other constraints that deter greater involvement by non-Federal interests" with respect to Corps projects. However, it has been my experience with certain other Federal agencies, that a certain degree of "territoriality" persists which sometimes inhibits optimal cooperation, to the detriment of the public.

2. The general trend of increasing public demand for recreation opportunities, particularly water access, tends to supercede the need for specific incentives to induce Federal/non-Federal partnerships. In general, increased cooperation would be encouraged by the mere reduction of procedural requirements and a more positive attitude by Federal agencies towards promoting cooperation.

3. The State of Nevada does enjoy several on-going programs involving cooperation with Federal agencies to promote recreation opportunities while increasing non-Federal involvement. Perhaps the most applicable program for your needs is this state's long-term recreation management agreements with the U.S. Bureau of Reclamation at Lahontan and Rye Patch Reservoirs.

4. The impact of the above mentioned programs has greatly increased public recreation opportunities at minimal expense to the Federal government. In addition, these programs have tended to spawn numerous recreation related businesses which support these recreation opportunities. Examples are retail boat sales, marine gas, picnic supplies, and bait stores.

Hopefully, this response will address your needs. However, if you require additional information, please do not hesitate to contact my office.

Sincerely,

Bob Miller

BOB MILLER
Governor

BM/lw

State of New Hampshire
Department of Resources and Economic Development
Division of Parks and Recreation
105 Loudon Road, P.O. Box 856, Concord, NH 03301-0856

CHIEF OF STAFF
16 JAN 1990 08 30

Wilbur F. LaPage
Director
603 271-3255

Parks Bureau
603 271-3556

Trails Bureau
603 271-3254

Technical and
Community
Assistance
[illegible]

Information
and Education
[illegible]

[illegible]
603 788-3155

603 323-7350

603 547-3497

603 547-3393

603 485-9874

603 436-6607

[illegible]
603 763-2356

Franconia-Crawford
603 823-5563

FAX
603 271-2629

[illegible]
TDD
225-4033
1-800-992-3312

January 3, 1990

R. S. Kem
Major General, U.S. Army
Deputy Commander
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Governor Gregg has asked that I respond to your letter of December 14th, and work with your Recreation Task Force. A copy of my earlier reply to Colonel Wilson in Waltham is attached to this letter.

I am not aware of any legal constraints on the State of New Hampshire, or its political subdivisions, to cooperate fully with the Corps. In fact, many of the Corps projects in New Hampshire are under lease to this Department.

As for incentives and cooperation with other agencies, you should know that the Corp's project at Franklin Falls is a designated site for work this summer on the N.H. Heritage Trail (brochure attached) a 230 mile walking path/greenway running the length of the State of New Hampshire. Other federal agency cooperators on this unique Greenway project include the U.S. National Park Service and the U.S. Forest Service. While Franklin Falls is under lease to the State, I cannot help but wonder if the Corps would like to become a more active cooperator? I would appreciate receiving permission to list the Corps among the growing list of Heritage Trail cooperators.

Please let me know how New Hampshire can assist your Task Force to devise innovative ways to better serve our residents and visitors.

Sincerely,

Wilbur F. LaPage
Director

WFL/pr
cc: Governor Judd Gregg
Commissioner Rice
Col. Wilson
Director Wahus

Discover the New Hampshire Heritage Trail!

State of New Hampshire
Department of Resources and Economic Development
Division of Parks and Recreation
105 Loudon Road, P.O. Box 856, Concord, NH 03301-0856

Wilbur E. LaPage
Director
603 271-3255

Parks Bureau
603 271-3556

Trails Bureau
603 271-3254

Technical and
Community
Assistance
603 271-3627

Information
and Education
603 271-3254

REGIONS:

Northern
603 788-3155

Central
603 323-7350

Southwest
603 547-3497
Off-Season
603 547-3393

Southeast
603 485-9874

Seacoast
603 436-6607

Sunapee-Pillsbury
603 763-2356

Franconia-Crawford
603 823-5563

FAX #
603 271-2629

Help Line
TDD Relay
225-4033
1-800-992-3312

December 8, 1989

Colonel Daniel M. Wilson
Corps of Engineers
Dept. of the Army
424 Trapelo Road
Waltham, MA 02254-9149

Dear Colonel Wilson:

Governor Gregg has asked that I respond to your letter of November 17th, and to advise you that I will serve as liaison to your recreation task force. As you know the Divsion of Parks and Recreation has a number of cooperative relations with your office including Clough State Park and the trail program at Franklin Falls. These are key elements of our parks and trails programs; the Franklin Falls site providing a major link in the 230-mile N.H. Heritage Trail.

I look forward to working with your committee to assure continued public recreation access to corps lands in New Hampshire.

Sincerely,

Wilbur F. LaPage
Director

WFL/pr
cc: Governor Gregg

Discover the New Hampshire Heritage Trail!

STATE OF NEW MEXICO

Economic Development & Tourism Department

Garrey Carruthers
Governor

Joseph M. Montoya Building
P.O. Box 20003
1100 St. Francis Drive
Santa Fe, New Mexico 87503
Phone: 827-0300

John Dendahl
Cabinet Secretary

R. S. Kem
Major General, U.S. Army
Deputy Commander
U.S. Army Corps of Engineers
CECW-ZR
20 Massachusetts Avenue NW
Washington DC 20314-1000

January 29, 1990

Dear Major Gen. Kem:

Thank you for the chance to address the importance of water recreation in New Mexico and the contributions of the lakes your dams have created, especially those of Abiquiu Lake, Cochiti and Conchas Lakes, and Santa Rosa Lake.

Several years ago the New Mexico State Park & Recreation Division, today a part of the New Mexico Energy, Minerals & Natural Resources Department, produced a survey of visitors to its state parks system that revealed that those parks offering water recreation opportunities (boating and sailing, fishing, water skiing, swimming, etc.) were the most highly sought sites in the system.

This remains true today, and can be applied to the water recreation opportunities at Abiquiu and Cochiti Lakes (where there are water recreation facilities available for visitors, but there are no state parks), and to Conchas Lake, where there is a state park. According to that department's division, seven of New Mexico's 10 most popular state parks can be found at lake shores. An eighth, Cimarron Canyon State Park, offers the Cimarron River to trout fishermen, and a ninth, Coronado State Park, is contiguous to the Rio Grande. Only Pancho Villa State Park is a "dry" facility. Conchas Lake State Park, for your information, ranks sixth among that division's 38 state parks, attracting in excess of 150,000 visitors annually.

Among our office's marketing surveys since 1981, outdoor recreation (into which water recreation is tucked), and New Mexico's scenic beauty and history remain the top three reasons the Land of Enchantment enjoys more than 25 million travelers each year. These visitors have enabled the state's tourism industry to **double** its gross receipts, **double** arrivals at Albuquerque International Airport, and **triple** its lodgers tax receipts in the decade just ended. No other sector of the state economy can boast such an accomplishment.

Independently, the state river rafting industry (affected in part by the water storage at Abiquiu Lake) also represents a popular commercial activity that produces more than $1 million in passenger gross receipts annually in northern New Mexico. Its unresolved complaint has been the ongoing release of water from upstream lakes during Spring and summer **weekdays** (when commercial rafting is slowest), instead of during **weekends** (when that industry is busiest). Perhaps this is the time for your Albuquerque District Office to convene a meeting sometime this Spring of the many vested interests in water recreation in New Mexico.

The New Mexico Tourism & Travel Division's role has always been, and shall remain, to promote the state as a travel destination domestically and abroad. However we have seen an intensification of networking in the state tourism industry in the last couple of years. The aforementioned vested interests -- together with your agency and the State Engineer's Office and our office -- would welcome the opportunity to outline these concerns and work together to address your budget shortfall. Perhaps such a convening could result in the creation of an interim committee that can represent this collective concern and articulate any alternatives, agreements or solutions to our Congressional and state legislators. Since this is an **operational and maintenance** issue, and not a marketing and promotional one, we see our role as one of support. Perhaps you can approach a representative in the New Mexico Energy, Minerals & Natural Resources Department to chair such a committee and act as its spokesperson.

Since your conern seems paramount, I have taken the liberty of sending copies of your letter and my reponse to Dr. Karen Brown, Manager of Special Programs in that department (Villagra Bldg., 408 Galisteo, Santa Fe 87503), and to Steve Miller of New Wave Rafting, Route 5, Box 302A, Santa Fe 87501. Their telephone numbers are (505) 827-7862 and (505) 455-2633, respectively. Dr. Brown is an impassioned advocate of outdoor recreation and chaired the State Trails Task Force a few years ago. As a result of her efforts, the state today has a guide to the many hiking trails on public lands. Mr. Miller is a concerned , articulate spokesman for the river rafting industry.

I also can personally vouch for the importance of water recreation activities in New Mexico, having skippered several boats on the state's largest lakes for more than 20 years.

I look forward to hearing from your Albuquerque District Office in the near future.

Sincerely,

BUZZ BAINBRIDGE
Director of State Tourism
(505) 827-0291

cc: Dr. Karen Brown
Denise Corrivau
David Wahus

STATE OF NEW YORK
PARKS, RECREATION AND HISTORIC PRESERVATION
ALBANY

ORIN LEHMAN
COMMISSIONER

January 16, 1990

Dear Major Kem:

Your letter to Governor Cuomo has been referred to this office for response. We agree that there is a critical need to maintain and enhance public water oriented recreational opportunities throughout New York State. Our Statewide Comprehensive Outdoor Recreation Plan identifies water oriented recreation among its highest policy priorities. Approximately 70 percent of the general public strongly agree that government should purchase additional public access to water resources. The Federal Government along with other levels of government have a major role in maintaining and expanding water recreation opportunities.

Within New York State, the four Corps projects provide an important service. Three of the projects are currently under management by the State or a local government to provide and maintain recreation facilities. The section of Corps lands on the Allegheny Reservoir and within Allegany State Park are managed under a lease agreement as part of the Park. In addition, we have recently developed a boat launching site on the Reservoir. Recreation facilities are maintained by the Department of Environmental Conservation (DEC) on East Sidney Lake and by the Town on Whitney Point. The DEC further supports extensive fishing management programs on these three water bodies and has a strong interest for the continuance of public access. Therefore, cooperative efforts between Federal and non-Federal agencies already exist in maintaining recreation facilities on COE projects.

The Corps maintains Lock 1 and the Black River Canal along the East and West ends of the state's 540 mile canal system. Also the Corps provided $5 million through the Water Resource Act this year for the canal system. In retrospect, it seems that the role of the Federal Government might have been stronger in the provision of recreation opportunities within New York State.

However, we are happy to see that this is beginning to occur with a recent cooperative program for the rehabilitation and improvement of the State's Barge Canal System.

Sincerely,

Major General R. S. Kem
U.S. Army Corps of Engineers
Department of the Army
Washington, D.C. 20314

STATE OF NORTH CAROLINA
OFFICE OF THE GOVERNOR
RALEIGH 27603-8001

JAMES G. MARTIN
GOVERNOR

March 20, 1990

Major General R. S. Kem
Deputy Commander
Department of the Army
U. S. Army Corps of Engineers
Washington, D. C. 20314

Dear General Kem:

I am writing in response to your letter of December 14, 1989, requesting North Carolina's comments on ways to provide maximum recreation opportunities at Corps of Engineers water resources projects in North Carolina in the context of limited federal operation and maintenance funds.

The State of North Carolina has made a massive commitment of resources to State recreation management at Corps of Engineers projects. The State has leased all of the project lands at Falls Lake and B. Everett Jordan Lake, except for the dam sites. At these two projects, the Division of Parks and Recreation manages all developed recreation sites and the Wildlife Resources Commission manages the remainder of the projects as State gamelands. At John H. Kerr Reservoir, a much older project, the State also manages several large recreation areas as well as lands set aside for gamelands. The State has made new capital investments at Kerr Lake from time to time to improve the quality of recreation opportunities.

We have the impression that North Carolina has made a commitment to recreation management at Corps of Engineers projects that far exceeds that of the average State. We hope that in deciding how to use your limited recreation funds you will recognize this large State commitment and not withdraw Corps support from the small proportion of recreation sites that are managed by the Corps in North Carolina.

The Corps should seek to resolve the budget problem by achieving an equitable balance of Corps and non-federal management responsibilities at Corps reservoirs in each state, not by penalizing those states that have already accepted major management responsibilities at Corps projects.

Because of our large existing commitment of personnel and management dollars at Corps projects, it is unlikely that we could take on management of additional recreation sites.

When Corps budget constraints become clearer, please inform me of the implications for Corps recreation activities in North Carolina. We want to keep up with this and attempt to avoid loss of recreation opportunities for our citizens.

Sincerely,

James G. Martin

JGM:mdh

cc: Dr. Phillip McKnelly
Mr. John N. Morris

GEORGE A. SINNER
GOVERNOR

State of North Dakota
OFFICE OF THE GOVERNOR
600 E. Boulevard-Ground Floo.
BISMARCK, NORTH DAKOTA 58505-0001
(701) 224-2200

NORTH DAKOTA CENTENNIAL

December 29, 1989

Major General R. S. Kem
United States Army
Deputy Commander
Corps of Engineers
Washington, D. C. 20314

Dear General Kem:

Thank you for this opportunity to offer input about recreational development on Corps of Engineers projects. As you may know, the recreation industry in North Dakota is one of our fastest developing sectors of the economy.

I am having my staff work with Mr. Doug Eiken, the North Dakota Parks and Recreation Department Director. Mr. Eiken will offer more specific comments and suggestions in the near future.

For my part, I want to encourage the Corps of Engineers to continue exploring all possibilities in recreational development. I am very supportive of public/private cooperation. The Corps can stimulate cooperative development by loosening restrictions on water access permits. Successful projects that have developed involve a public access site (boat ramp and basic facilities) adjacent to more developed private or public camping and resort facilities. In this way, private developers can profit from serving the public's needs, but access to the resource is not restricted.

Again, we will offer more specific comments in the near future. My best wishes to you in the New Year.

Sincerely,

George A. Sinner

George A. Sinner
Governor

GAS:JE:ksp

cc: Mr. Doug Eiken

GEORGE A. SINNER
GOVERNOR

State of North Dakota
OFFICE OF THE GOVERNOR
600 E. Boulevard-Ground Floor
BISMARCK, NORTH DAKOTA 58505-0001
(701) 224-2200

February 9, 1990

Mr. Dave Wahus, Executive Director
Recreation Task Force
U. S. Army Corps of Engineers (CECW-ZR)
20 Massachusetts Avenue NW
Washington, D. C. 20314-1000

Dear Mr. Wahus:

Enclosed are comments from Doug Eiken, Director of the North Dakota Parks and Recreation Department, in response to your request for input for the Recreation Task Force. I agree with Director Eiken's comments. I would like to emphasize, as does Mr. Eiken, our desire that the Recreation Task Force address ways to improve existing recreation, as well as trying to find the means to improve non-federal management.

I believe this is the time to emphasize recreation as many state economies, including our own, are becoming more dependent upon the travel business generated by these sites. I believe the emphasis of your task force should be on ways to enhance existing recreation, as well as providing improved opportunities for non-federal management.

Please contact Doug Eiken if you have further questions concerning this matter. He has indicated his willingness to participate in the Recreation Task Force workshop in Omaha on April 12 to represent the state.

Sincerely,

George A. Sinner

George A. Sinner
Governor

GAS:JE:ksp

Enclosure

cc: General Kem

Comments
Corps of Engineers Recreation Task Force

Doug Eiken, Director
North Dakota Parks & Recreation Department

Recreation is the only direct benefit of U.S. Army Corps of Engineers projects that is available to all citizens. The provision of recreation at Corps sites was a promise made to the general public and the states, when many productive areas were flooded to provide downstream protection for flood control and to provide navigation and hydroelectric power.

There are many people throughout the nation who are concerned that the potential transfer of Corps areas to other public and non-public managers is an attempt by the Corps to reduce their commitment to recreation.

The goal of the Recreation Task Force is to provide opportunities for non-federal management of Corps areas to the maximum extent possible. I feel the focus should also be on ways to enhance and improve support for recreation throughout the Corps system. In addition, policies should be adopted to provide convenient and appropriate opportunities for city, county, state and private sector operation of these recreation areas.

A number of Corps policies hinder this public/private partnership.

I. Lease Policies
Current Omaha District policies concerning leases to the private sector are too restrictive. Our studies indicate that major investments require longer leases. In addition, leases and permit requests should be processed in a more timely manner.

II. Funding
The Corps cost share program has been an effective way to encourage public and private sector involvement on Corps projects in the past. This program should be reinstated. A cost share of up to half the cost of development of basic amenities should be available for non-federal entities that request a leased site for recreation.

The Corps should also look at the new recreation initiative of the U.S. Forest Service, which includes increased recreation funding, cost share programs, cooperative ventures, partnerships, flexibility and an increased emphasis on recreation.

Adequate funding for maintenance of privately operated Corps sites is another concern. A policy which would require a certain percentage of revenues generated by private operation of the facility be earmarked specifically for continued maintenance and upgrading of the site is a necessity. Otherwise, there is a hesitancy by many private sector operators to provide maintenance because extra revenue is "skimmed off." Ultimately, this skimming practice results in a deteriorated public investment that may be a future taxpayer liability.

III. Consistent Water Levels
More consistent water levels, with better guarantees of lake access, are necessary to encourage non-federal management of Corps projects.

IV. Economic Models

Corps policies that recommend use of the 'willingness to pay' model for determining economic benefits of recreational use of Corps projects should be reviewed. The 'willingness to pay' is a specialized tool used by few research analysts and is not consistent with economic impact models used by other federal agencies. If this system of determing economic impacts is changed to be consistent with other recreation providers, the Corps will find recreation benefits far outweighs their costs.

V. Misconceptions

Corps officials frequently express concerns about 'commercialization,' 'over-development' and 'seasonality' of recreation areas. Local project managers realize that much development can occur without affecting the project's natural resources, and, in fact, may enhance the people's opportunity to enjoy the reservoir systems.

Corps officials at times are overly concerned about the effect on a recreational business of the short length of the recreation season, particularly here in North Dakota. They have tended to be overly concerned and cautious about encouraging privatization because of this factor. We believe that if the state is willing to provide backing for a private development, Corps officials should provide encouragement and promote quick action on our privitization efforts.

ODNR
OHIO DEPARTMENT OF
NATURAL RESOURCES

Fountain Square
Columbus, Ohio 43224

January 29, 1990

Major General R.S. Kem
Department of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Your letter to Governor Richard Celeste, regarding the future of recreation facilities at Corps' projects was forwarded to our department for response. Thank you for the opportunity to comment on this important issue.

The Ohio Department of Natural Resources has encountered fiscal constraints very similar to those the Corps is currently experiencing. Our department has undertaken cost cutting measures and is actively involved with regional and local parks and recreation departments to develop alternative funding sources to meet our management, rehabilitation and development needs. At this time, it would be almost impossible to assume the additional management responsibilities of Corps' water development projects.

In your attached issues for consideration, you listed incentives to build partnerships between the federal and non-federal sectors. We suggest that when clear and defined needs are exhibited for facilities and/or access to Corps' properties, the Corps should consider a cost-sharing incentive with the outgrant state to acquire access or develop facilities. A 50-50 cost sharing arrangement could be an appropriate starting point for negotiation.

Once again, thank you for the opportunity to comment. It is the shared hope of Governor Celeste and this Department that a mutually agreeable alternative for the future management of these areas can be reached. We are looking forward to any future reports on the status of this issue.

Sincerely,

JOSEPH J. SOMMER
Director

JJS/cag

cc: Dave Wahus, Executive Director
Recreation Task Force
Ted Ford, Office of the Governor
Len Roberts, Deputy Director
Recreation Management
John Piehowicz, Deputy Director
Resource Protection
Stanley Spaulding, Chief
Division of Parks & Recreation
Clayton Lakes, Chief
Division of Wildlife
Dr. Michael D. Craden, Chief
Office of Outdoor Recreation Services
Bob Lucas, Office of Chief Engineer

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL RESOURCES
2150 Herr Street
Harrisburg, Pennsylvania 17103—1625

December 28, 1989

717-787-6640

Bureau of State Parks

Maj. General R.S. Kem
U.S. Army Corps of Engineers
Washington, DC 20314

Dear General Kem:

Governor Robert P. Casey has asked me to respond to your letter of December 14, 1989, concerning the expansion of the role of non-federal public and private entities in providing recreational opportunities at Corps' water resource development projects.

The Department of Environmental Resources currently leases approximately 2,837 acres of park land from the U.S. Army Corps of Engineers. In the early 1980s several park land leases with the COE had been terminated because of budget constraints. In 1987, Governor Casey and the General Assembly recognized that years of neglect had left our state parks at risk. Accordingly, funding for the park system has been increased approximately 30% over the past three years. For the first time in more than a decade, new staff members have been hired. Yet the system continues to experience intense pressures on its natural and financial resources and increasing demands on park facilities and infra structure.

In June, as part of the "State Parks 2000" planning initiative, the Department of Environmental Resources distributed 120,000 state parks questionnaires. More than 13,000 Pennsylvanians took the time to let us know their concerns, opinions, and ideas about their state parks. The enthusiastic public response is indicative of the importance of Pennsylvania's state parks to the citizens of the Commonwealth and their concern about the future of the state park system.

The administration's State Parks 2000 initiative is intended to accomplish something that has never been done before — enlist all Pennsylvanians in a comprehensive planning program to guide the future of Pennsylvania's state park system.

Over the next several months we will hold a series of public meetings across the Commonwealth to receive further comments. Following this public review we will prepare a final State Parks 2000 plan to be released in late spring next year.

We must find new sources of money to adequately staff, operate, and maintain a system of parks providing modern facilities and high quality recreational opportunities. Until State Parks 2000 is finalized and implemented, we are apprehensive about expanding our role as a non-federal public entity providing additional recreational opportunities on COE leased park land. However, I would appreciate receiving a copy of your plan to maintain and/or enhance public recreational opportunities at Corps Water Resource Projects when it is available from the Corps' Recreation Task Force.

Your concerns for sustaining and enhancing current COE programs within current budget constraints are appreciated and I would like to thank you for taking the time to contact us.

Sincerely,

William C. Forrey

William C. Forrey, Director
Bureau of State Parks

State of Rhode Island and Providence Plantations
EXECUTIVE CHAMBER, PROVIDENCE

Edward D. DiPrete
Governor

January 2, 1990

R. S. Kem
Major General, U.S. Army
Deputy Commander
Department of the Army
U.S Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

On behalf of Governor DiPrete, I would like to thank you for your recent letter regarding the Army Corps of Engineers Recreation Task Force.

As you mentioned, Rhode Island currently has no Corps water resource development projects providing recreational opportunities. However, there are no existing laws, policies, or other constraints that deter greater involvement by non-federal interests.

On the State level, Rhode Island does utilize the Rhode Island National Guard and the United States Navy Construction Battalion in Davisville for public recreational support projects, provided that the projects fit into their respective training programs. As you must experience at the federal level, budget constraints have made it essential to examine our expenditures very carefully and, therefore, I would be very interested in any suggestions that you may have.

Once again, thank you for your letter and do not hesitate to contact me if you have any further questions or comments.

Sincerely,

Sally Dowling

Sally T. Dowling, Director
Governor's Policy Office

STATE OF SOUTH DAKOTA

GEORGE S. MICKELSON
GOVERNOR

EXECUTIVE OFFICE
STATE CAPITOL
PIERRE, SOUTH DAKOTA
57501
(605)773-3212

January 4, 1990

Mr. Dave Wahus
Executive Director
Recreation Task Force
U.S. Army Corps of Engineers (CECW-ZR)
20 Massachusetts Avenue, NW
Washington, D.C. 20314-1000

Dear Mr. Wahus:

I appreciate the recent letter from Major General R. S. Kem and commend the Corps of Engineers for establishing a recreation task force to address recreational opportunities at federal water projects. South Dakota is very interested in this issue and would like to be actively involved in the efforts of the task force.

I am a strong advocate for economic development in this state, and firmly believe tourism/recreation can play a vital role in accomplishing our development objectives. Recreation along the Missouri River in South Dakota has become a major industry worth millions of dollars to our economy, and the Corps of Engineers is an important player in this enterprise. Tourism and recreation activity along the Missouri River has increased at a rate of over thirteen percent per year for each of the past four years. The Sport Fishing Institute, a national nonprofit conservation association, has estimated the economic impact of sport fishing in South Dakota is $53 million annually, and forty percent of such activity is generated by the Missouri River. Projections based on a 1983 study, "Economic value of Recreation and Fisheries Equipment," would place estimated resident and nonresident expenditures for fishing, hunting and recreation on the four reservoirs in South Dakota at over $156 million annually. (See enclosed report.)

CELEBRATE THE CENTURY
1889 1989
South Dakota

I recognize the Missouri River as one of our most important natural resources, finite and renewable. In order to address the issues of Missouri River fish and wildlife resources, bank stabilization and tourism/recreation development, I have established the Missouri River Resource Enhancement Program. (See enclosed report and resolution.) The objective of this program is to properly balance the protection, use and development of the river on a sound and coordinated basis. As part of this effort, I have specifically directed the Departments of Water and Natural Resources and Game, Fish and Parks to develop a plan to address Missouri River fish and wildlife mitigation and enhancement, and to identify key areas in need of bank stabilization. These agencies have been working with the Corps of Engineers and the U.S. Fish and Wildlife Service on such plans, and I look forward to implementing their recommendations.

In addition, I directed the Departments of Tourism and Game, Fish and Parks to assess the feasibility of Missouri River tourism/recreational development. The feasibility report, prepared by Recreation Management Opportunities, Inc., has been completed, and I believe it provides us with a good plan regarding how we should proceed with such projects. (See enclosed report.) As the report indicates, we do not intend to move forward with any Level I full service residential resorts since the market is simply not sufficient to justify these types of facilities. The report also recommends the development of four Level II destination resorts such as the River Ranch Resort project, and we do intend to support such projects. Please understand these projects will not, in any way, exclude public use and access.

The six Missouri River reservoirs provide about 5,950 miles of shoreline, which is roughly equal to the 6,050 miles of coastal shoreline in the combined states of California and Washington. In South Dakota, we have about 2,850 miles of Missouri River shoreline, which is roughly equal to the 3,035 miles of coastal shoreline in the state of California. The RMO, Inc., report recommends four major tourist facilities and eight support facilities. I do not believe anyone would consider four major facilities along the California coast to be an over-saturation of that resource, and I do not believe such facilities will over-saturate the Missouri River shoreline in South Dakota. Nevertheless, we intend to take a careful and deliberate approach to developing these facilities. Such

development will not happen overnight. In fact, it may take twenty years to see the level of development recommended in the RMO report. I believe this development should occur to the extent sufficient markets exist to support development, and to the extent such development does not impair our fish and wildlife resources.

The state has already provided substantial cost-sharing funds to support Missouri River recreational development, and we intend to provide further financial support for sound projects. Over the past few years, the state and the Corps of Engineers have jointly implemented a $12 million Missouri River recreational development program. The state share for this effort was $7.7 million and the program included improvements at 21 lake access areas, 13 lakeside recreation areas, and 15 fishery enhancement sites. The state is also willing, and has committed, nonfederal funds to cover public sewer, water and road access costs associated with various resort and recreational facility projects in much the same way as the state provides support for industrial park infrastructure requirements.

From our perspective, the Corps of Engineers needs to address both existing facilities and future development, while recognizing fiscal reality. We know the federal budget deficit will loom over us for several years and future budgets will be equally lean, if not even leaner than this year. Rather than engage in yearly budget battles, I believe it is time for the state to sit down together with the Corps of Engineers and develop a long-range recreational management plan. This plan should address directing limited resources to those facilities which enjoy the greatest use, improving existing facilities, and developing new facilities to meet expanding and diverse recreational interests. With such a plan in place, we can fashion federal and state budgets accordingly. We must develop a complementary federal and state strategy to accomplish our river management objectives, rather than engage in adversarial, counter-productive conflicts over budget requests and recreational facility needs.

South Dakota has stepped up its efforts to develop new park facilities and maintain state managed sites along the Missouri River. The state of South Dakota now budgets and manages over one-third of the recreational sites owned by the Corps of Engineers. However, South Dakota's best efforts at

developing our Missouri river recreational resources will be negated without greater cooperation from the Corps of Engineers.

The Corps of Engineers is reducing its prime work force available to maintain recreation areas, and placing a heavier reliance on contracted services. Contracted services now make it very difficult for the local Corps of Engineers' office to respond in a timely manner to all of the problems associated with low water. Such services must offer greater flexibility to deal with emergencies, over-utilized facilities and daily problems at boat ramps caused by siltation and receding water levels.

In regard to future development, the Corps of Engineers can greatly assist or hinder the state in securing new Missouri River tourism/recreational projects. In particular, the Corps of Engineers must address the leasing process, financing, and the adequacy of reservoir water levels in conjunction with the federal responsibility for Missouri River development. The Corps of Engineers must do more to support public/private partnerships and allow greater access to public lands for sound public/private development projects.

We are currently in the process of working with the Corps of Engineers, the local project sponsor (Lyman County), and the developer (Regency Inns Management, Inc.) to obtain a lease for the proposed River Ranch Resort project on the Missouri River near Oacoma, South Dakota. The lease application for this project was submitted to the Corps of Engineers-Omaha District on March 1, 1989, and we wish to commend the district for the positive support that has been received during the application review process. At the same time, however, we have encountered some difficulty due to a lack of clear policies and criteria associated with obtaining the lease. The level of detail required in the application, the mitigation requirement for non-wildlife resources, and the linkage between obtaining a lease and obtaining a Section 404 permit have resulted in a lengthy, time consuming application process. In addition, we must still obtain approval from the Corps of Engineers' Missouri River division office and the Chief of Engineers' headquarters office prior to entering into the lease. Thus, it will probably take us 12-18 months just to complete the lease application process. We need to improve the system for obtaining a lease, and have a number of suggestions in this area. For example, perhaps the Corps of Engineers' district office should be able to enter into

a lease on a contingent basis subject to the applicant obtaining all necessary federal and state permits. This could reduce substantially the time required to obtain a lease, serve as a showing of positive intent on the part of the Corps of Engineers, and allow the sponsors/developers to proceed with investing the time and money required to develop such a project without undue risk.

In the financing area, the Corps of Engineers and other federal agencies such as Economic Development Administration (EDA) should review existing federal grant and loan programs to possibly make assistance available for tourism/recreation projects. For example, the Corps of Engineers Section 107 small navigation program should be made more accessible for marina and marina break water facilities in conjunction with Missouri River development. In addition, the construction of sewer, water, road and other support facilities should receive federal funding support within existing budget constraints. While the Corps of Engineers is authorized by P.L. 89-72 to enter into cost-sharing agreements for recreation development, the current Corps of Engineers policy of not cost-sharing in such projects with local sponsors is self-defeating and stymies needed improvements. The Corps of Engineers must take a positive view toward contributing funding for projects if it is going to be successful in promoting the development, enhancement and operation of recreation facilities by non-federal public agencies and the private sector. Further, if the Corps of Engineers wishes to encourage non-federal financing of new projects, current federal policy restrictions on exclusive use facilities should be reviewed and possibly revised. While ensuring public use of the Missouri River shoreline is a critical requirement, it may be appropriate in certain limited cases to consider innovative leasing arrangements and special use options.

Another matter of great concern to South Dakota is the issue of Missouri River reservoir operations and highly variable water levels. While reservoir water level problems in this area have been greatly compounded by the current drought, we must recognize the changing use of the Missouri River and develop a more contemporary reservoir operating plan. The upper Missouri River basin governors have directly addressed this water level problem on a short-term and long-term basis, and we believe strongly in the need to establish minimum reservoir water levels. (See enclosed position statement.) We do not oppose reservoir

releases for downstream summer and winter purposes such as navigation and water supply intakes, but we do believe it is possible to develop a more efficient, conservation based reservoir operating plan to meet the many existing and emerging needs of both upper basin and lower basin states.

We hope these general comments will assist the Corps of Engineers recreation task force, and would be pleased to further discuss these issues with you in greater detail. Please contact Tim Edman of my senior staff if you wish to further pursue this subject.

Again, I commend the Corps of Engineers for your efforts in this area and wish you success.

Very truly yours,

GEORGE S. MICKELSON

GSM:tel

Enclosures

STATE OF TEXAS
OFFICE OF THE GOVERNOR
AUSTIN, TEXAS 78711

WILLIAM P. CLEMENTS, JR.
GOVERNOR

March 19, 1990

Mr. R. S. Kem
Major General, U.S. Army
Deputy Commander
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Thank you for your correspondence regarding expanding the role of non-federal public and private entities in providing recreation opportunities at Corps projects.

I support your efforts to explore innovative methods of maintaining and enhancing public recreational opportunities at Corps water resource projects. However, the state of Texas would be unable to assume operation of any of the small access parks currently operated by the Corps. In addition to our own budget constraints, I feel the wide distribution of these parks would greatly impede our ability to provide proper management. Numerous free access points on lakes also severely limit our ability to collect fees, which can be used to defray operating expenses.

I understand that the Corps has discussed the operation of larger, more economical and manageable units with the Texas Parks and Wildlife Department. I would encourage you to continue that working relationship. I would also support continuation of funding assistance on a matching basis for park development and operation costs.

Again, thank you for the opportunity to provide my comments and suggestions.

Sincerely,

William P. Clements, Jr.
Governor

WPC:SWB/aa/bf

POST OFFICE BOX 12428 • AUSTIN, TEXAS 78711 • 512/463-2000

State of Vermont

Department of Fish and Wildlife
Department of Forests, Parks and Recreation
Department of Environmental Conservation
State Geologist
Natural Resources Conservation Council

AGENCY OF NATURAL RESOURCES
103 South Main St., 10 South
Waterbury, Vermont 05676

DEPT. OF FORESTS, PARKS AND RECREATION
Tel: (802) 244-8714

February 23, 1990

R. S. Kem
Major General U.S. Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Governor Madeleine Kunin has asked me to respond to your letter of 14 December, 1989 about your plan to use non federal public agencies and the private sector to operate Corps recreation facilities. We apologize for the delay in responding to your letter. A variety of circumstances including some confusion about what was expected has caused the delay.

At the present time our Department and Fish and Wildlife Department lease a portion of the North Hartland Lake area from the Corps where we manage a campground and waterfowl area. A number of years ago through an agreement with the Corps we managed the beach at North Springfield Lake. The campground is doing well and is an asset to our system. We gave up the North Springfield area partly because it was a financial liability. Our present financial situation prevents us from accepting any additional arrangements with the Corps unless their operation would be at least cost covered either through fees and charges or financial support from the Corps. Our recent experience leads us to believe that local government in our state is in same or similar situation. We have been trying to lease one of our operations to the private sector. The private sector is not interested unless they can make a profit. Our observation is that except maybe for Ball Mountain Lake Campground, none of your remaining facilities in Vermont can meet those expectations under their present operating mode.

We are not aware of any legal or policy constrants that would deter greater non-federal involvement. From our prespective here the important incentive for non-federal involvement as I stated in the previous paragraph is financial support. We are not aware of any other federal programs that could assist in non-federal involvement.

Sincerely,

Paul W. Hannan, Commissioner

tlp
cc: George Hamilton
Daniel M. Wilson
Edward J. Koenemann

COMMONWEALTH of VIRGINIA

Gerald L. Baliles
Governor

Office of the Governor
Richmond 23219

December 19, 1989

Major General R. S. Kem
Deputy Commander
United States Corps of Engineers
Washington, D. C. 20314

Dear General Kem:

Governor Baliles has asked me to thank you for your letter of December 14 advising that the Army Corps of Engineers has established a Recreation Task Force to develop a plan to maintain and/or enhance public recreational opportunities at Corps water resource projects.

The Governor appreciated having this detailed information. We will be back in touch with you if we have any comments.

With kindest regards, I am

Sincerely,

Robert B. Jones, Jr.
Special Assistant

jw

cc: The Honorable John W. Daniel, II
Secretary of Natural Resources

804 786-2211 TDD 371-8015

COMMONWEALTH of VIRGINIA

John W. Daniel, II
Secretary of Natural Resources

Office of the Governor
Richmond 23219

(804) 786-0044
TDD 371-8334

December 29, 1989

Major General R. S. Kem
Deputy Commander
United States Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

I am writing to follow up on your recent correspondence with the Governor's Office regarding the establishment of a Recreation Task Force.

The Virginia Department of Conservation and Recreation administers the Virginia state park system and provides financial assistance to state agencies and political subdivisions for the acquisition and development of public outdoor recreation areas. The Department also prepares the State Comprehensive Outdoor Recreation Plan and provides recreation technical assistance to the public and private sectors.

Department staff will have an interest in your plans for U.S. Army Corps of Engineers recreation projects in Virginia. If appropriate, the Department's staff would be willing to provide input at your Task Force meetings or via correspondence. If this arrangement is agreeable with you or some other approach is more appropriate, please contact:

Mr. Arthur H. Buehler
Division of Planning and Recreation Resources
Department of Conservation and Recreation
203 Governor Street, Suite 326
Richmond, Virginia 23219

Thank you for your consideration.

With kindest regards, I am

Sincerely yours,

John W. Daniel, II

cc: Mr. B. C. Leynes, Jr.
Mr. Arthur H. Buehler

TOMMY G. THOMPSON

Governor
State of Wisconsin

February 1, 1990

Major General R.S. Kem
U.S. Army
Deputy Commander
Department of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear Major General Kem:

Thank you for your recent letter requesting my comments concerning "opportunities, constraints, and capabilities for expanding the role of non-federal public and private entities in providing recreation opportunities" at certain Corps of Engineers' projects.

To assist me in making relevant comments on this topic, could you please provide me with additional information that identifies the specific recreation facilities available at the projects listed in your correspondence? Please direct the information to Ms. Tanace Matthiesen, Wisconsin Department of Administration, Federal/State Relations, Post Office Box 7868, Madison, Wisconsin 53707-7868. If you have any questions, please contact Ms. Matthiesen at (608) 266-2125.

Thank you again for requesting my input.

Sincerely,

TOMMY G. THOMPSON
Governor

TGT/poj

Room 115 East, State Capitol, P.O. Box 7863, Madison, Wisconsin 53707 • (608) 266-1212 • FAX (608) 267-8983

State of Wisconsin DEPARTMENT OF NATURAL RESOURCES
Carroll D. Besadny, Secretary
Box 7921
Madison, Wisconsin 53707
TELEFAX NO. 608-267-3579
TDD NO. 608-267-6897

May 14, 1990

Major General R.S. Kem, U.S. Army
Deputy Commander
Department of the Army
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Your December 14, 1989 letter to Governor Thompson regarding a Recreation Task Force on maintaining and/or enhancing public recreational opportunities at Corp projects was recently referred to me for response. I understand that your staff desired an early response. Therefore, I can only provide general information.

In reviewing the list of Corp recreational facilities in Wisconsin, most are already managed by non-federal public agencies and the private sector. There are no policies or laws that would prevent greater non-federal or private involvement on Corp facilities in Wisconsin. However, it is unlikely that you will find many non-federal public agencies or the private sector that would accept management responsibilities on Corp facilities without some type of economic incentive. Incentives could take the form of long-term agreements where the non-federal interests could charge adequate fees to provide sufficient funds to operate the site, or the Corp could lease or contract maintenance.

The Department has had some success in using non-state public agencies and private sector groups to manage some state properties. Local towns and civic organizations maintain boat launches and small day-use parks by contract or lease. We find in many cases it is often cost-effective to contract the maintenance on these parks. The Department has also had some success establishing "Friends" groups, which are a group of people that help provide manpower and funds for managing some of our state parks. The Department's Bureau of Parks and Recreation has prepared a handbook for "Friends" groups (attached). These techniques may be an alternative for some of the Corps projects.

I hope this information is of some value to the Task Force. Please feel free to contact Doug Fendry in the Department's Bureau of Property Management if you would like more information on our contracts, leases or the "Friends" program.

Sincerely,

C.D. Besadny
Secretary

STATE OF WYOMING
OFFICE OF THE GOVERNOR
CHEYENNE 82002

MIKE SULLIVAN
GOVERNOR

January 22, 1990

Major General R. S. Kem
Deputy Commander
U.S. Army Corps of Engineers
Department of the Army
Washington, D. C. 20314

Dear Major General Kem:

Thank you for your recent letter soliciting information from the State of Wyoming regarding the efforts underway by the Corps to develop a plan to maintain and/or enhance public recreational opportunities.

The Recreation Task Force established for this effort has been assigned a rather formidable task. It is a task however, that should not be taken lightly and I would encourage the Corps to make every effort to obtain. I am positive my fellow Governor's in the states which contain Corps recreation projects have clearly stated to you the importance of recreation and tourism to their state's economy and employment. This is also true in Wyoming. Therefore, the directive for this Task Force by Mr. Robert W. Page, the Assistant Secretary of the Army for Civil Works, to not consider the closure of facilities and to explore the potential for future operations by non-federal entities is commendable.

I would suggest to the Recreation Task Force that the provision of outdoor recreation opportunities in the State of Wyoming is an example of an outstanding success story worthy of further study. Wyoming has an excellent working relationship between all levels of government and the private sector. Six of Wyoming's state parks are operated at federal Bureau of Reclamation reservoirs through individual lease agreements. Many of these state parks also have private concessionaires in operation.

Non-federal public agencies and the private sector can, and do, operate at federal facilities. I would add however, the most important ingredient for success in this matter is cooperation by all parties involved. This cooperation is only obtainable through honest and open communication. I would hope the work of the Task Force would recognize these factors.

While I have not addressed the potential issues for consideration as you listed, I trust that I have at least provided some food for thought. I would encourage you to keep Wyoming abreast on the progress made in regards to this project and I would request a copy of your final report. The Wyoming Recreation Commission; specifically Mr. Gary Thorson, Chief, State Parks Division, who may be reached at (307)777-6324, will assist you if additional information is required.

Very truly yours,

Mike Sullivan

TENNESSEE VALLEY AUTHORITY
KNOXVILLE, TENNESSEE 37902

OFFICE OF THE BOARD OF DIRECTORS

APR 3 1990

Major General R. S. Kem
Deputy Commander
U.S. Army Corps of Engineers
Washington, D.C. 20314

Dear General Kem:

Thank you for your March 6 letter describing your Recreation Task Force and its focus on maintaining and enhancing public recreational opportunities at U.S. Army Corps of Engineers (USACE) projects in the face of budget constraints.

Over the past several years, TVA has employed a variety of approaches to achieve quality management of our public recreational facilities. A number of arrangements have been used in response to reduced funding, including cooperative maintenance agreements with other public agencies and volunteers, commercial licenses, concession agreements, and long-term leases. In addition, we have furnished planning and technical assistance to public agencies and the private sector who provide recreational facilities on the reservoir system. I have asked our Operations and Maintenance/Public Use Department staff to contact Dave Wahus to further discuss the task force's activities and offer more detailed input on TVA's experience with cooperative maintenance arrangements.

Thank you for the opportunity to share our experiences. We look forward to learning more about USACE's plans concerning this matter.

Best regards,

Marvin Runyon
Chairman

United States Department of the Interior

FISH AND WILDLIFE SERVICE
WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR,
FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/RF/90-1404

APR 10 1990

R.S. Kem, Major General,
U.S. Army, Deputy Commander
CECW-ZR
20 Massachusetts Avenue, NW
Washington, D.C. 20314-1000

Dear General Kem:

This letter is in response to your request for information on U.S. Fish and Wildlife Service (Service) strategies and programs for providing recreational opportunities on Service lands. As you have indicated, we do conduct programs in volunteers, challenge grants, cooperating associations, and the Youth Conservation Corps. Additionally, many refuges are adopted by the Audubon Society.

Each one of the programs listed above have individual and unique impact on national wildlife refuges. Rather than trying to break each program down individually in this letter, I have enclosed a briefing or other information on each topic for your review.

If you have any questions on any of these programs, feel free to call Charles L. Holbrook, Division of Refuges (703) 358-2029 FTS 921-2029.

Sincerely,

DIRECTOR

Enclosure

I

U.S. ARMY CORPS OF ENGINEERS RECREATION STUDY

VOLUME II: APPENDIX I

Interviews and Regional Workshops Report

Final Report

From a Set of Activities Designed to Identify and Assess Options for Reaching the Goal of Maintaining or Enhancing Recreation Opportunities While Reducing Federal Net Spending

Prepared for
U.S. Army Corps of Engineers
Institute for Water Resources
Fort Belvoir, VA 22060

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June 1990

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ACKNOWLEDGEMENTS

The data analyzed in this report were collected through the very capable facilitation efforts of Dale Brown. Dr. Brown, along with assistance from Kathy Surprenant, Lynn Mortensen, Linda Hale, and Tom Wandzilak guided the discussion of enthusiastic participants in a manner that encouraged input from participants and allowed equal opportunity to voice opinion. The facilitation team also digested the group input which allowed accurate summarization of the discussion sessions. The facilitation process for this project illustrated to those involved the "right way" to conduct a facilitated workshop, and more importantly provided the research benefits that result from an expertly conducted process.

Contacts at the U.S. Army Corps of Engineers, Institute for Water Resources, William Hansen (Contracting Officer) and Lawrence Skaggs, provided helpful and enthusiastic guidance and support.

The efforts of other Corps personnel involved in organizing individual regional workshops were also very much appreciated. Corps offices that took formal organizational roles were: North-Pacific Division, Portland District, Southwestern Division, Ft. Worth District, Missouri River Division, Pittsburgh District, Rock Island District, and the South-Atlantic Division.

Michael Huff of Vanderbilt University conducted interviews of experts in the field of recreation. Those who donated time to be interviewed were very much appreciated. Ideas and thoughts of the recreation management experts collected during this stage of the project provided in-depth insight into important recreation management issues.

Finally, the hard-working staff at Planning and Management Consultants, Ltd. were instrumental in production of this report. Duane Baumann provided valuable input during the organization and planning stages of this research endeavor. Nancy Hanna-Somers, Don Burk, and Judith McFarlin put forth extensive efforts towards making this a concise and usable work. The professional editorial assistance provided by Teresa White was also greatly appreciated.

EXECUTIVE SUMMARY

ELEMENTS OF THE STUDY

As part of the process of developing and assessing options for reaching the broad goal articulated by the Assistant Secretary of the Army (Civil Works)

> "...to find ways to maintain and enhance recreation opportunities nationwide while reducing federal expenditures,"

the Recreation Task Force set in motion a variety of efforts for obtaining input from relevant concerned publics. This report deals with three of those efforts.

1. A series of about forty personal interviews held in January, 1990 with individuals who, for one reason or another, were believed to have important insights to share. (This effort is described in Chapter 1.)

2. A facilitated workshop for Corps personnel involved with recreation management. This was held at the Natural Resources Management Conference in Nashville, Tennessee, in early February, 1990. (This effort is described in Chapter 2.)

3. A series of facilitated workshops held in six cities around the nation in March and April, 1990. These were designed to elicit input from members of the many concerned publics, including those directly involved with Corps projects as developers or concessionaires; those concerned with recreation's role in regional economic development; employees of federal, state, and local governments; representatives of conservation and project user groups, and academics. (This effort is described in Chapter 3.)

RESULTS

Chapters 2 and 3, especially, present summaries of the enormous amount of data generated by these efforts. Most of the results are, on reflection, not surprising. Respondents from business favor policies that are directed at helping businesses. State and local government officials would like to see more federal dollars in the form of facilities cost-sharing. Almost everyone is suspicious of private developers and private exclusive use arrangements. And almost everyone would like the Corps to find additional money for recreation either by changing the way its own books are kept (e.g., cross-subsidizing recreation out of hydropower earnings) or by somehow persuading Congress and the administration to be more generous.

A few results are, however, worth singling out in some cases because they are surprising, in others because they are reassuring, and in still others because of their sheer pervasiveness.

- There is widespread support for a major continuing role of the Corps in recreation. Certainly there is no widely agreed-on or even perceived alternative.

- There is also widespread support for the Corps' role in protecting the natural environment at its projects. Indeed, some respondents think the Corps could and should be even tougher on matters such as groundwater and natural areas.

- There is, however, equally widespread and often quite agitated frustration with the Corps' bureaucratic structure and behavior. Specific complaints included excessive delays in lease and permit approvals, inconsistent messages from different administrative layers, and the sheer complexity of regulations.

- Most surprising to us: there was some significant support for, and no widespread or vehement opposition to, more realistic pricing of everything from a recreation day (e.g., launching a bass or ski boat) to a permit to build a private dock.

- There was little opposition to encouragement of private-sector cooperation per se, but there is a strong strain of opposition to arrangements in which private sector equals exclusive use. Our interpretation of these data is that there may be opposition to granting exclusive use to, say, a yacht club that keeps out the public by fiat, but not to a marina that is open to public use on payment of a fee.

RECOMMENDATIONS

1. The Corps should commit itself to, and obtain necessary authority for, charging at least approximately efficient prices for all recreation users that have a private-good character. These at least should include day-use, recreation activities (other than just looking or sight-seeing), the granting of concession and development leases, and the granting of various types of private, exclusive-use permits.

2. The Corps should work to change several facets of its policy toward private-sector developers and concessionaires. Particular examples include:

   - Lease terms should be longer, providing lease payments reflect market values.

   - Lease holders should themselves be free to charge market prices except in what are probably unusual circumstances involving near-monopoly conditions.

   - Nonprice regulation of leaseholder operations should be lightened up, except as it pertains to the natural environment. As a particularly potent symbol of existing micromanagement, the treatment of permits to serve liquor should be changed.

3. Finally, we recommend that the Corps define a new functional area at every level. This might be called "nonfederal initiatives." It would be symmetric with real estate, natural resources, planning, etc. But it would have as its mission successfully involving state, regional, local, and private institutions in recreation development and management at Corps projects. Thus, career rewards would come from being helpful, prompt, etc., and at best, the "corporate culture" would evolve toward outward-looking service.

CHAPTER 1

THE PERSONAL INTERVIEWS

In fulfillment of the first element of the task order governing this contract, forty-four individuals were interviewed at twenty-three places around the United States. These interviews were carried out during January and early February, 1990. In all but a few cases, the interviewees were chosen by the technical monitor as representatives of projects, firms, or state programs of intense interest to the study. In a few cases, the interview team exercised its discretion and followed up on suggestions made by other respondents.

The respondents came from both the public and private sectors. Within the latter, those interviewed included developers (and would-be developers), concessionaires (and would-be concessionaires), architects, economic consultants, and private persons serving on public bodies such as tourism boards. Public-sector respondents included individuals working at the town or city, county, state, and federal level as well as employees of special development authorities set up by state governments but with some autonomy. (A complete summary of the interviews is provided in Table 1-1.)

Because the backgrounds of the interviewees varied so widely and because the nature of their individual involvement with the Corps also ran across a wide spectrum, the tone and content of the set of interviews spawned a wide range as well. Appendix A to this report contains narrative summaries of the interviews, with the privacy of each interviewee protected to the extent possible. (In some cases local references could not be eliminated without destroying meaning, and from these, identities can be inferred.)

INTERPRETATION

Anyone who reads even a sample of these interviews will discover, that despite the range of specific concerns, a few major themes keep reappearing. In this next section, one version of those themes is set out and specific examples are given.

But first, Figure 1-1 portrays our interpretation of the interview results in a schematic way. Here, the goals of the study as they pertain to existing and potential future sites are portrayed as "protected" from "attack" by successive lines of fortification. The attacking columns are the options: nonfederal involvement (private, state, local, and regional authority); increased revenues via fees; increased efficiency in Corps-controlled operations; and offering of increased recreation opportunities (especially in terms of types of recreation experiences). The "defensive lines" consist of problems created by the natural world; elements of economic reality; ethical and political concerns; the content of applicable laws and regulations; and the all-encompassing problem of the Corps' unwieldy and unresponsive bureaucracy. The schematic makes it clear that the lines are deepest on the privatization front, though the strength of the fortification created by state and local financial limitations may be enough to single-handedly beat back attack in that sector. Certainly the figure does suggest that attaining the objectives of the National Recreation Study will be far from easy.

TABLE 1-1

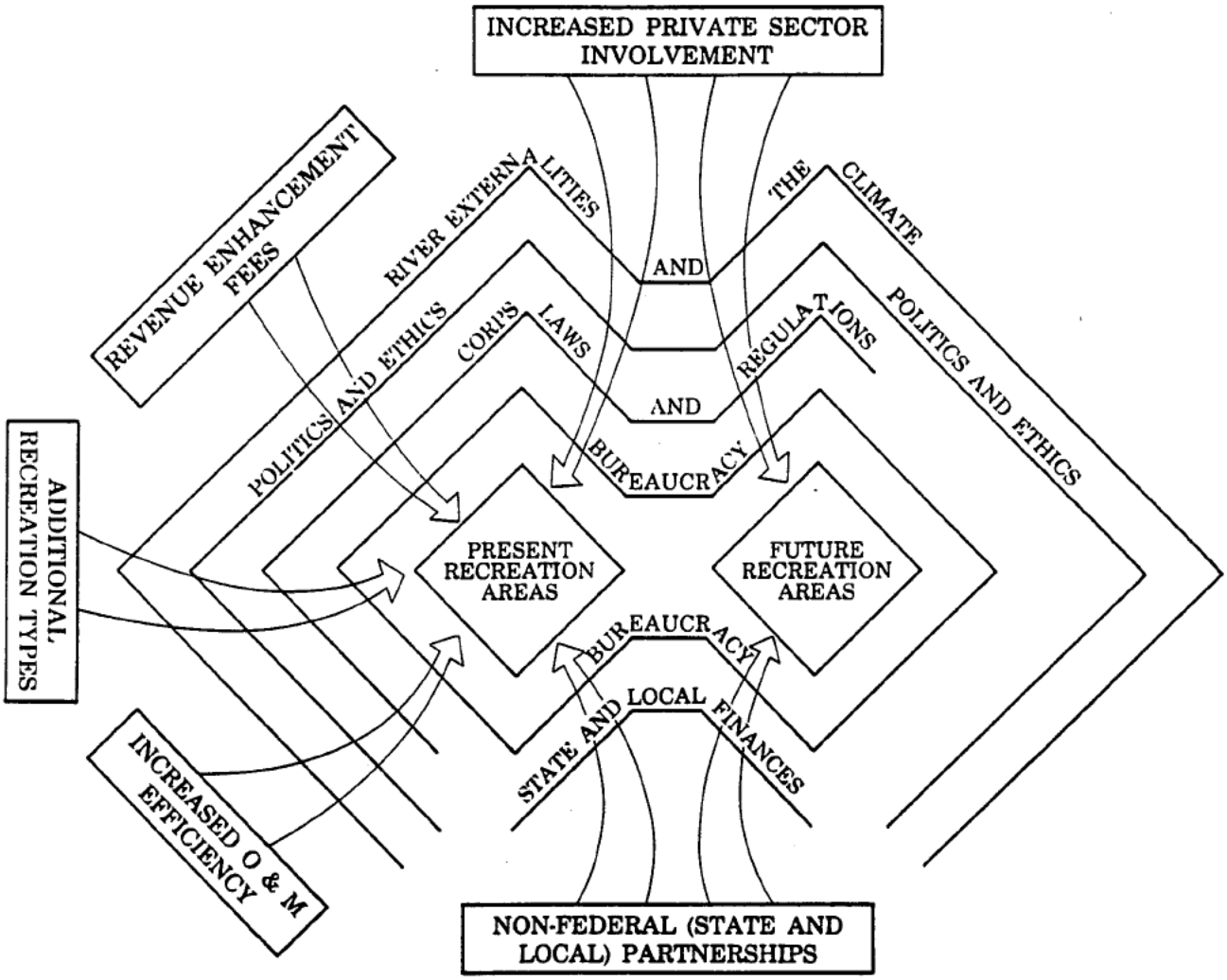
INTERVIEWS HELD JANUARY/FEBRUARY 1990

STATE	LOCATION	INTERVIEWER	PERSON INTERVIEWED	POSITION/FIRM OR AGENCY	MOTIVATION
Arkansas	Little Rock	Huff	Greg Butts	Mgr, Plan & Dev, AR of Dpt Parks & Tourism	Interested State
	"	"	Richard Davies	State Parks, Director " "	"
	"	"	Chris Peek	Mgr, Admin, " "	"
	"	"	Robert Gruber	Resort Grp VP, Fairfield Communities	Developer at Corps Lake
Georgia	Atlanta	Russell/Huff	J.D. Wingfield, Jr.	Snr VP, Hammer, Siler, George	Oct 88 Mtg[a]
	"	"	Roy Burson	Exec Dir, Lake Lanier Is Dev Auth	Master Lessee at Lake
	Lake Lanier	"	Tim Crawford	Principal, Rosser Fabrap	Oct 88 Mtg
Illinois	Shelbyville	Feather	Ed Forestor	President, Eagle Creek Resort	Lake Shelbyville Developer
Indiana	Indianpolis	Huff	Jack Costello	Dep Dir, Land, Forest, Wildlife; IN Dept of Nat Resources	Innovative State
Miss	Columbus	Huff	Robert Ivy	Proprietor, Ivy Architects	Oct 88 Mtg
	Jackson	"	John Horhn	Assoc. Dir, Troulst Dev, MS Dpt of Econ & Comm Dev	Innovative State/Ind Rec
Missouri	St. Louis	Feather	Tony Giardina	U.S. Army Corps of Engineers	Eagle Creek Development
	"	"	Tom Hewlett	"	"
	"	"	Jack Niemi	"	"
	"	"	Woodrow Sandlin	"	"
	"	"	Chuck Franko	"	"
	"	"	Bill Leven	"	"
N. Dakota	Ft. Yates	Feather	Peter Capossela	Staff Att'y, N. Dakota Dpt of Water Resources	Following up interview list
Oregon	Corvallis	Feather	Perry Brown	Chair, Dpt of Resource Recreation Mgt, OSU	Interview list
	Portland	"	Dick Webster	US Army Corps of Eng	Northwest Rec Group
	Portland	"	Jack Ardner	" "	" "
	Salem	"	David Talbot	Dir, Parks & Rec Div OR Dpt of Transportation	Interview List
S.C.	Columbia	Huff	Mike Copeland	Pres, Fountaine Co.	Oct 88 Mtg
	McCormick	"	Morrison Parrott	Exec Director, Savannah Valley Authority	Oct 88 Mtg/Indepen Rec
	"	"	Bill McLaughlin	Deputy Dir " "	
S. Dakota	Aberdeen	Brown	Lester Gosch	Potential Developer	Potential Developers
	"	"	Ken Gosch	"	"
	Chamberlain	"	Dina Brandt	Exec Dir, Lake Francis Case Devel Corp	Local Rec Developer
	Kennebel	Feather	Raymond Boe	Lyman Co Commission	River Ranch Resort
	"	"	Richard Reuer	"	"
	Mobridge	"	Larry Atkinson	Ed & Publ, (former Dir, S.D. Bd of Tourism)	River Ranch Resort
	Oacoma	"	Alice Hutmacher	City of Oacoma	River Ranch Resort
	"	"	Larry Giedd	"	"
	Pierre	"	John Brakss	Pres, Spring Creek Resort, Inc.	Concessionaire
	"	"	Tim Edman	S.D. Governor's Office	River Ranch Resort
	"	"	Bob Hartford	S.D. Econ Development	"
	"	Brown	Doug Hofer	Dir, Parks & Recreation, SD Dpt Parks	Interview List
	"	"	Dee Dee Rapp	S.D. Dept of Tourism	S.D. Tourism Devel Comm
	"	"	Wes Broer	Exec Dir, Great Lakes of S.D. Assoc	Recreation Promoter
	Sioux Falls	"	David Sweet	Pres, Regency Inns Mgt Inc	River Ranch Resort
	Yankton	Feather	Greg Henderson	Dir, S.D. Planning & Devel Dist III	River Ranch Resort
Washington	Seattle	Feather	Ron Hyra	Outdoor Rec Planner, Nat Park Svc	Northwest Rec Group
	"	"	Phil Parker	Chief, Concessions Mgt, Nat Park Svc	"
	"	"	Mike Tollefson	Concessions Mgt, Nat Park Svc	"

[a] "Oct. '88 Meeting" refers to a preproposal meeting for private sector recreational development held in Atlanta, GA

FIGURE 1-1

OBJECTIVES AND DEFENSES:
The National Recreation Study



SUMMARY OF THEMES

As themes, we take the identified barriers to successful attainment of the major goals of the study -- the defensive lines of Figure 1-1. We begin with those barriers that are caused by conditions over which the Corps has (or at least seems to have) little control and then work progressively toward the problems that appear to be created by the Corps itself.

a. The imperatives of the natural world. There are two important subthemes here:

(i) The climate of those parts of the U.S. in which most Corps projects are to be found restricts mass, water-oriented recreation to a few months each year. The severity of the restriction varies from the southeast, where fishing and boating can be possible and even pleasurable for as much as ten months, to the northern middle west, where really harsh winter weather may last for three or four months, and where another three or four months are so chancy as not to encourage people to plan to participate. The effect of this climate reality is to make it hard for private enterprise to succeed in offering water-oriented recreation as a sole or even major product. Even the golf course is prey to climate to some extent. Recreation businesses of the type that can make particular use of Corps-owned sites are thus condemned either to a tough fight for survival or to being the marginal inducements at a conference destination resort. This, in turn, implies that the advantage of Corps sites over other sites is substantially less than meets the eye on a lovely summer day.

(ii) The realities of rivers and the original purposes of most Corps reservoirs further reduce the advantage of Corps land for private recreation providers. If water has to be released to maintain downstream navigation flows in a drought or has to be stored to prevent downstream flooding due to rain or snowmelt, businesses along the reservoir may suffer badly, losing the use of boating facilities (e.g., dry slips) or suffering from problems of appearance and inconvenience that go with flooding.

b. Ethical and political positions and concerns. Three major subthemes surfaced in interviews in which this broad theme was touched on:

(i) There is a feeling within the Corps that an ecological imperative drives, and should drive, the management of Corps land. This imperative may be summarized usefully as protecting the natural look and feel of the lands around reservoirs. It seems to be widely believed within the Corps that private recreation developers do not share this ethic; that they will inevitably and regularly sacrifice woods, shorelines, wetlands, and even man-made artifacts such as old burial grounds. This belief leads both to practical efforts to anticipate and prevent it and, more damagingly, to the assumption that "private" equals "irresponsible."

(ii) Another ethical position that becomes a political position is that fees should not be charged for access to recreation opportunities (forgetting for the moment any legal stipulations that some kinds of fees cannot be charged.) This view taps an old theme in American public policy. It rests on an uneasy combination of concern for middle-class taxpayers who have "already paid once" for the facility and of poor people who, it is asserted, will be prevented from visiting and enjoying the psychologically healing experience of outdoor recreation.

This position clearly has negative implications both for the viability of private enterprise and for the Corps' own "revenue enhancement" option.

(iii) A third ethical theme with political overtones is that of the proper object of state recreation programs. In brief, unless such programs are under the direction of a state department charged with encouraging economic development, they run afoul of the idea that recreation opportunities should be provided only for state citizens and taxpayers. To the extent that Corps sites are regionally attractive, this view prevents the potential from being tapped.

c. Constraints created by economic reality at nonfederal levels. There is really one major and one minor theme here:

(i) The major problem is the same one that is driving the Corps' national study: concern about government budgets. One might think of a pendulum in public life, swinging between the extremes of concern for public values, with attendant willingness to tax and spend to pursue those values, and concern for purely private values and consumption, with attendant unwillingness to tax away private incomes. If the 1960s and early 1970s saw the pendulum cross to the public extreme and start back, the early and mid-1980s have seen an extreme of private centeredness, a condition that in the 1950s came to be called the Affluent Society Syndrome. The pendulum may be starting back toward the middle, as all-too-evident public problems capture the electorate's attention, and political leaders tentatively experiment with suggesting that additional public money might be well spent in trying to solve them. But until this pendulum goes a considerable way in that direction, there is unlikely to be slack in most state or local budgets for acquiring new recreation responsibilities.

(ii) A minor subtheme here, and one that is hard to assess, is the claim that it is impossible for state government at one time to bind a later one. For example, a state park agency may enter into a Corps lease in 1990, but in 2000, a new legislature has the power to break the lease -- or so respondents seem to think. As a theoretical matter, this may be true. But one does not see wild zigzags in state policies on other matters; and it seems doubtful that outdoor recreation would be uniquely subject to them.

d. Constraints created by laws and internal Corps regulations. Subthemes mentioned here include:

(i) Lease terms are widely considered too short for private developers. Fifty years was often mentioned as a sufficient term, while terms between five and thirty years appear, at least to outside observers, to be preferred by the Corps. This is a well-known tension in several areas of policy -- for example, the creation of marketable pollution permits. The need to protect agency "flexibility" is seen as paramount; and the desire of private firms to be able to plan for the long haul is not seen as important.

(ii) Limits on the length of stay allowed at Corps campgrounds and other facilities are also seen by private and even state people as too restrictive. This problem appears to be related to underpricing. When camping space prices are lower than what the market price of comparable land suggests they should be, it will be attractive for owners of campers to effectively create a second home on almost rent-free ground. A private firm would

have no motivation to underprice, and this would make semipermanent camping much less attractive. But if underpricing were attractive for a few customers, the private firm would like to be able to take advantage of it.

(iii) Prohibition against the sale of alcohol or discrimination against distilled spirits or against drinks sold in bars as opposed to restaurants also diminishes private-sector freedom of action and profit potential. This general policy may reflect the rural and Southern power bases of many early congressional supporters of Corps projects. It is currently justified by reference to the goal of providing "family recreation opportunities." The vision seems to be of seedy cocktail lounges full of lewd, predatory, and potentially violent drinkers who would travel to a Corps project for an exciting Saturday night rather than stopping in their local version of Nashville's Nolensville Road or Baltimore's "Block." A competing vision would be offered by a visit to any of a large number of upscale destination resorts, such as The Homestead, The Cloister, or The Broadmoor. Drinks may be available nearly all day and late into the night, but most people are too busy to drink. Now, it may be that there is a class, and hence a pricing, connection here. If so, the ethical (distributional equity) view that low or zero prices are good is in conflict with the view that drinking is bad.

(iv) This brings us to pricing regulation. The Corps evidently maintains the authority to review and approve prices to be charged by its lessees. To the extent that below-market prices are encouraged, other problems are created and with them the apparent need for additional regulations. And, of course, below-market prices make it that much harder for private firms to make a profit and encourage cutting corners on maintenance and service.

e. The final theme -- undoubtedly the most pervasive in the interviews and certainly the closest to home for the Corps is that of bureaucratic behavior by Corps officials at every level. There is no point in repeating the many unflattering phrases used by respondents to convey their feelings on this subject. They can be discovered in the narrative summaries. But we can break out a few specific subthemes that show the symptoms observed on the ground.

(i) Many respondents commented on what they perceived to be inconsistency of purpose or goal across the Corps' administrative layers. For example, if the local project contact was trying to be helpful and encouraging to a private development, the opposite would be true at some higher level. The result could be contradictory requirements and approval reversals and the general impression that the Corps could not speak with one voice on anything.

(ii) Respondents also felt that Corps personnel were prisoners of their regulations. This complaint could, in some cases, simply be a coded version of "they won't let me do what I want." But since regulations are always added to, never subtracted from -- and since the regulations have to try to serve many inherently inconsistent purposes, as has been noted above -- this general notion that such a barrier exists is entirely plausible. Significantly, however, none of the respondents had any better suggestions than vague calls for "flexibility."

(iii) Several respondents cited the delays created by elaborate approval processes, with chains reaching right up to the Office of the Chief of

Engineers. More than one respondent cited two years as the expected time for approval of a recreation development. This seemed excessive to those who mentioned it, but it is difficult without more study to conclude that this is absolutely out of line with, say, obtaining zoning approval for a shopping mall or apartment complex in any randomly chosen city.

In the following two chapters, the reader will find most of these themes repeated and reinforced. In Chapter 2, the participants in a conference of Corps of Engineers natural resource managers have a chance to define their position over a prespecified set of options for meeting the goals specified by the Assistant Secretary of the Army (Civil Works). The results will throw some interesting light on the above ideas about pricing, private development, local management autonomy, and central bureaucracy.

CHAPTER 2

THE NASHVILLE WORKSHOP

In February, 1990, at the biennial conference on natural resource management held in Nashville, Tennessee, one half-day was devoted to a facilitated workshop on recreation management options. The goals of the workshop were to:

- inform the Corps personnel present of the purpose of the study and of its potential long-run impact on Corps projects and thus on their jobs
- use the experience and expertise of the assembled managers to assess the options for recreation management generated to that point by the study team and its committees
- tap the imaginations of the managers to help develop additional options

Approximately 150 Corps personnel participated in the questionnaire portion of the workshop (see Appendix B for the full questionnaire used). It was expected that there might be some tensions at the workshop because the study might well be perceived as a threat to methods of operations and even to jobs. In addition, it was anticipated that incomplete and quite probably inaccurate information about the study was circulating in the field and division offices. In the event, to say that emotions were running high was an understatement.

An electronic mail message had been circulated widely only days before the conference that could be interpreted to say that the Corps of Engineers was getting out of the recreation business. Many participants perceived their jobs to be in direct jeopardy and their operations to be in for major change. In essence, as often heard before, during and after the first session, the perception was that this study was merely a cosmetic gesture carried out prior to doing what upper management wanted to do -- i.e., get out of the recreation business.

The overview of the Corps Recreation Study provided by the Executive Director of the Recreation Task Force, gave a complete overview and brought the audience more up-to-date on what had been done and what was expected of the study. Yet, in spite of this overview, the following question-and-answer session demonstrated the persistence of concerns about lack of information and the future role of the Corps of Engineers in recreation management. Numerous attendees raised questions and sought clarification. Some challenged the validity of even doing such a study. At that point, very little more could have been done short of having the Chief of Engineers provide similar information and repeat with authority that he intended a continuing role for the Corps of Engineers in recreation projects.

The lead facilitator from Planning and Management Consultants, Ltd., provided a brief overview of the small group breakout sessions which were to follow. The desire to tap the participants' experience and expertise concerning the "strawmen" was emphasized. Also, the random assignment process for small breakout groups based on order of registration was explained.

It was also noted that ratings provided by individuals would be reported anonymously to the study team. Attendees were instructed that providing their names was optional and that the only use of names would be to develop a list of contacts which might be asked for advice about those options for which they indicated having had extensive experience.

SMALL-GROUP BREAKOUT SESSION

The participants proceeded to their randomly assigned breakout groups. The process used for random groupings appeared to work quite well, with only minor exceptions. Slight variation in group size did not appear to affect the group process.

The highly charged, emotional environment spilled over to each of the small-group breakout sessions. During the debriefing session, all facilitators and recorders noted the hostility or highly charged signals which were apparent at the beginning of the sessions. Several of the more vocal participants appeared to challenge almost every facet of the enterprise, from the overall study, to the use of forms, to specifics on the forms. It would have been desirable to have had more groups, thus allowing for additional opportunity for interaction and reduction of emotions. In the circumstances, it was a challenge to provide adequate opportunities for people to offer insights and information.

The first major activity of the small breakout sessions was the completion of the rating forms. The process was explained in greater detail in each of the small groups. One area that seemed burdensome was the entry "Extensive experience with the following project(s) related to this set of options." People expressed confusion about what was meant and were also concerned with the lack of uniform level of experience among the participants.

Each breakout session began with a questionnaire that focused on a different group of options. These assignments were made as follows:

Option Group		Breakout Group
I.	Ways to Increase Private and Nonfederal Involvement	A
II.	Increase Revenues	B
III.	Budget Augmentation	C
IV.	Operation and Maintenance Efficiencies	D
V.	Increased Recreation Opportunities	D

When a breakout group completed evaluation of an option group, it evaluated another option group. This process insured proper coverage of each option group.

Participants were asked to rate options on two dimensions[1]: their anticipated effect on recreation opportunities at Corps projects and their anticipated effect on federal budget burden. Ratings on each dimension were to vary from 1 to 5, with 5 indicating the "good" end of each dimension (from the study's point of view) and 1 indicating the "bad" end. The range of rating possibilities is illustrated in Table 2-1.

Participants were also encouraged to write in comments, prefacing them with a "+" for an "opportunity" or a "-" for a "constraint." It might have been clearer to participants if there had been "x the choice" blanks with the choices provided from above. While this would have substantially increased the volume of paper, it would have simplified the process. Several comments were offered by participants about the clarity of some options (e.g., double phrases, the use of the word "all," etc.). It was suggested that before these or similar options went further, they be reviewed and clarified.

---

[1] Regrettably, one group (D) appeared to have some mixed instructions on the voting procedures. In order to maintain data quality, that group's Options (IV and V) were not compiled with the data found in other sections of this report.

TABLE 2-1

OPTION RATING

Recreation Supply Dimension		Federal Budget Burden Dimension	
Rating	Meaning	Rating	Meaning
5	Increases recreation opportunity	5	Reduces federal burden
3	Has no effect on recreation opportunity	3	Has no effect on federal burden
1	Reduces recreation opportunity	1	Increases federal burden

After the rating forms were completed, people were asked to move into smaller "buzz groups" to discuss their options/ratings/comments and to prepare to report back to the others in the breakout area at the end of the iteration. A spokesperson either volunteered or was elected within each buzz group to report the group's general comments. While the posting of information was of interest to the group, it was to be noted to all groups that the main information was to be gathered via the rating forms and to reinforce the importance of writing down their comments on their forms. The buzz group technique appeared to work quite well. People had the opportunity to share insight with each other. They also heard many similar comments from other buzz groups on the same options.

RESULTS

Results of the breakout group option-rating exercise may be summarized and analyzed in a number of ways. In Table 2-2, we report the responses to every option in terms of the percentage of respondents who viewed that option either positively or negatively. Our definitions of positive and negative in terms of the two rating dimensions are as follows:

> A response counts as positive if the ratings were 4 or 5 on federal burden reduction and 3, 4, or 5 on recreation opportunity enhancement.
>
> A response counts as negative if the ratings were 1 or 2 for both federal burden and recreation opportunity enhancement.

Table 2-2 is arranged within each option group in descending order of percentage positive responses. The complete raw data on which this summary table and subsequent analysis are based were presented in the interim report[2] on the Nashville Workshop and are not repeated in this report.

[2] Planning and Management Consultants, Ltd., 1990. Interview Report Themes and Suggestions From Personal Interviews Carried Out As Part Of The National Recreation Study. Carbondale, IL.

TABLE 2-2

POSITIVE AND NEGATIVE RESPONSES TO THE MANAGEMENT OPTIONS

A. OPTION GROUP I: WAYS TO INCREASE PRIVATE AND NONFEDERAL INVOLVEMENT

OPTIONS:		RESPONSES % Positive	% Negative
IW	Charge appropriate market value fees for outgrants	61.7	5.9
IM	Relax Corps 14-day camping restriction	45.0	12.5
IC	Economic promotion/marketing to encourage leasing	42.5	12.5
IK	Lengthen term of lease to allow long-term financing	39.4	7.9
IF	Ease cost-sharing restrictions	37.5	2.5
IU	Funded cost-share program	36.8	5.3
IL	Eliminate/reduce restrictions on lessees	36.1	5.6
IA	Reduce restrictions on private exclusive use	31.7	14.6
IZ	Make available shorelines to adjoining groups	31.5	23.6
IE	Liberal partnershipping and/or cost-sharing	30.7	12.8
IR	Foster regional organizations to promote area lakes	30.0	7.5
IO	Encourage college/university to run parks	30.0	22.5
IS	Liability insurance	29.7	13.5
IAB	Provide more authority to field to make deals	29.4	14.7
IJ	Provide leasing incentives	28.5	11.4
ID	Use Corps resources to develop promotion program	27.5	7.5
IQ	Allow several recreation areas in a single lease	27.5	10.0
IAA	Reduce restrictions on disposal of excess property	26.4	26.4
IX	Declare a free fire zone along shoreline	25.7	40.0
IP	Encourage "members only" recreation developments	25.0	32.5
IV	Rent-to-own	23.6	42.1
IN	Allow park operators to charge discriminatory fees	23.5	32.3
II	Seek legislative authority to acquire land	23.0	20.5
IB	Allow residential developments on Corps land	23.0	23.0
IT	Rental rebates	22.5	7.5
IG	Offer low-interest, long-term federal loans	22.5	15.0
IH	Lease lands for public recreation	20.0	10.0
IY	Reduce restrictions/requirements on lessees	20.0	20.0

B. OPTION GROUP II: WAYS TO INCREASE REVENUES

OPTIONS:		RESPONSES % POSITIVE	% NEGATIVE
IIK	Return of revenue to Corps from concessions	72.5	2.5
IIAJ	Sale of surplus property revenues to project	66.6	3.3
IIL	Charge equitable fee for processing permits, etc.	65.8	0.0
IIAG	Charge lease revenues and return to Corps	63.6	6.1
IIQ	Shoreline use permits	63.4	4.9
IIAM	Revenues from fees should go back to the project	62.0	0.0

TABLE 2-2 (Continued)

POSITIVE AND NEGATIVE RESPONSES TO THE MANAGEMENT OPTIONS

IIB	Charge a variable rate for camping sites	60.9	4.9
IIP	Golden Age and Golden Eagle Passports	60.9	4.9
IIAF	Turn powerhouses to others/receive part of profits	60.0	3.3
IIF	Develop special event areas and charges	57.5	5.0
IIR	Concession rents	56.0	4.9
IIG	Reduce restrictions to encourage concerts, etc.	51.2	4.9
IIE	Eliminate the free-camping requirement	48.7	7.3
IID3	Firewood	48.7	9.8
IID4	Expand number of commercial activities allowed	48.7	12.1
IIJ	Allow sale of items Corps could offer but has not	48.6	5.4
IIZ	Cabin rental	48.6	5.4
IIAA	Rent-a-Tent	47.5	7.5
IIAB	Expand facilities	47.3	0.0
IIC	Expand authority to include charging day use fees	46.3	7.3
IIV	Lottery tickets	46.3	19.5
IIJ3	Sale of merchandise (T-shirts, brochures, etc.)	45.0	7.5
IIJ1	Loosen restrictions on sale of ice, beer, colas, etc.	43.9	17.0
IIS	Sell advertising	42.8	7.1
IIW	White water releases	42.5	7.5
IIAN	Issue a Federal Recreation Sticker on all vehicles	41.3	17.2
IIAD	Oil and gas lease revenues	40.5	8.1
IIU	Gambling	40.4	33.3
IIA	Implement nationwide reservation system	36.5	4.9
IIT	SRUF funds	35.0	7.5
IIAI	Liberalize cost-share provisions	34.3	9.4
IIM	Promote recreation areas nationally/internationally	33.3	9.5
IIAH	Parking permits for boat launch areas	32.3	20.5
IIAC	Surcharge on peak weekends	30.7	10.2
IIAL	Develop/standardize maintenance requirements	29.6	3.7
IIO	Establish Corps membership campgrounds nationwide	29.2	7.3
IIY	1-900-Number	28.2	7.7
IIJ4	Sell recyclable materials from public use	27.5	7.5
III	Charge rent for use of Corps facilities	27.5	10.0
IIN	Charge for recreational boats going through locks	27.5	15.0
IIAK	Charge aircraft for use of public lands	26.6	16.6
IIAO	Charge for fishing guides/tour license on lakes	25.9	18.5
IIAP	Solicit funds from other federal agencies	25.9	22.2
IIJ2	Sell visitor survey information, zip codes, etc.	20.0	32.5
IIH	Have the Corps purchase recreation equipment	17.5	20.0
IID1	Access for hunting, fishing, or trapping	17.0	29.2
IIX	Itinerary-planning service to campers for a fee	15.3	7.7
IID2	Boat licenses	14.6	26.8
IIAE	Admission fees to visitor centers	14.2	31.4
IID5	Charge for certain ranger activities	10.0	30.0

TABLE 2-2 (Continued)

POSITIVE AND NEGATIVE RESPONSES TO THE MANAGEMENT OPTIONS

C. OPTION GROUP III: GENERATING NONAPPROPRIATED FUNDS TO USE IN MANAGING RECREATION

OPTIONS:		RESPONSES % POSITIVE	% NEGATIVE
IIIF	Organic Act	79.1	4.2
IIIH	Fees from other project purposes	62.5	16.6
IIIB	Encourage sponsorships to promote financing	54.1	4.2
IIIG	Excise taxes	54.1	8.3
IIIE	Establish Corps recreation trust fund	50.0	4.2
IIIC	Develop challenge grants program	41.6	12.5
IIIA	Develop program to solicit voluntary donations	37.5	16.6
IIIK	CETA Program	37.5	16.6
IIIL	Encourage the increased use of volunteers	35.2	11.7
IIIJ	Prisoners and juvenile offenders	34.7	30.4
IIIN	Increased leasing with Corps getting 100% of funds	28.5	14.2
IIIP	Change the O&M budget and operating statements	27.2	18.1
IIIO	Vending machines in recreation areas	23.0	53.8
IIII	Armed services involvement	13.6	45.4
IIID	Conduct land sales w/receipts to recreation O&M	13.6	59.0
IIIM	Provide campgrounds for homeless for O&M services	0.0	75.0

D. OPTION GROUP IV: WAYS TO INCREASE OPERATION AND MAINTENANCE EFFICIENCY

OPTIONS:		RESPONSES % POSITIVE	%NEGATIVE
IVE	Adopt a "one-stop outgrant service"	63.1	5.3
IVH	Encourage consolidation/renovation of facilities	62.8	2.9
IVB	Allow on-site manager to determine use of his money	57.1	11.4
IVM	Minor concessions	56.7	2.7
IVU	Check efficiency of other Corps elements	56.6	6.7
IVP	Signage	51.4	5.7
IVO	Cost-sharing agreements	51.3	2.7
IVI	Encourage use of volunteers and remove restrictions	50.0	16.6
IVF	Reduce the frequency of in-house inspections	45.9	10.8
IVG	Monitor facility use level	43.2	0.0
IVS	Division management	42.8	5.7
IVC	Swap out recreation areas with other agencies	38.2	32.3
IVJ	Institute adopt-a-park programs	33.3	22.2
IVR	Self-collection of camping fees	33.3	30.3
IVD	Reorganize for more efficient operation	32.3	20.5
IVQ	Retirement payment	29.4	11.7
IVA	Initiate peer review proces	29.4	14.7

TABLE 2-2 (Continued)

POSITIVE AND NEGATIVE RESPONSES TO THE MANAGEMENT OPTIONS

IVK	Encourage professionalizing	28.5	14.2
IVT	Satellite work centers on very large projects	22.5	32.2
IVL	Visitor centers	22.2	13.8
IVV	COE management of military recreation	20.6	27.5
IVN	Commercial activities program	14.7	38.2

E. OPTION GROUP V: WAYS TO INCREASE RECREATION OPPORTUNITIES

OPTIONS:		RESPONSES % POSITIVE	% NEGATIVE
VC	As warranted, reopen/renovate closed areas	40.0	2.9
VB	Allow more local community-type recreation	33.3	5.6
VG	Corps-sponsored event	31.4	5.7
VE	Cooperate with the local business community	28.5	5.7
VA	Provide test sites for experimental recreation	26.4	8.8
VF	Emphasize research support programs	26.4	17.6
VH	American Youth Hostels	26.4	32.3
VD	Assist in promotion of regional economic development	14.2	8.6
VJ	Emphasize opportunities of cooperation	13.6	22.7
VI	Set up package deals for schools for off-season use	12.5	8.3

Comments on Table 2-2

The general view of Group I management options was not highly positive: feelings were more "middle-of-the-road." As seen in Table 2-2, the most popular option by far (61.7% positive and 5.9% negative) was to move towards market prices for outgrants. This was the only option that had 50% or more in the positive ranking area. Relaxation of the fourteen-day camping restriction was the next most popular option with 45.0% positive and 12.5% negative. The third and fourth highest-ranked options dealt directly with lessees by promoting ventures through economic incentives and allowing longer leases.

The least popular option was to reduce the regulatory restrictions and reporting requirement by lessees (20% positive and 20% negative). The most negatively perceived option, on the other hand, was the rent-to-own option for small business interests (42% negative responses).

The Group II options, dealing with ways to increase revenues, were generally well received. Twelve of the fifty options discussed had positive rankings above 50%. Another sixteen options had rankings above 40%. The most popular option was to return revenue from lessees to the Corps (72.5% positive and 2.5% negative). The second highest-ranked option was to return revenues generated by surplus land sales to the project. This highly ranked option, along with fifteen others, was added to the original set of options during an open discussion of the participants. Charging a realistic fee for permits and leases was the next highest option. No one ranked this option in our negative region.

Collecting fees for ranger activities or services was the lowest-ranked option (10% positive and 30% negative), and collecting fees at visitor centers was ranked second lowest (14.2% positive and 31.4% negative). Gambling and sale of visitor information had the highest negative percentages (32.5 and 33.5 percent, respectively).

Nearly one-third of the Group III options, involving generation of nonappropriated funds for use in recreation management, had positive percentages of 50% or more. The highest-ranked option, "Obtain eligibility for Land and Water Conservation Funds", received very high support (79.1% positive and 4.2% negative). Allocating revenue from other project purposes, e.g., hydropower, was the second highest-ranked option (62.5% positive and 16.6% negative). A sponsorship program for corporate sponsors was also a well-received option, as was the option to collect excise taxes on recreation vehicles.

Campgrounds for the homeless in exchange for operation and maintenance labor was rejected strongly. In fact, it received the highest level of rejection of any option in any group (0.0% positive and 75.0% negative). The next to lowest ranked option was to sell land with receipts going toward recreation.

There was a generally positive feeling toward the Group IV options which involved ways of increasing the efficiency of recreation management. In fact, the group had the highest percentage of options above 50% positive of any of the groups (36%). The most popular option was to give the local Corps manager authority to provide "one-stop outgrant service" to interested parties (63.1 positive and 5.3% negative). The next ranking option was to consolidate and renovate facilities to enhance O & M efficiency; this received about as much approval as the highest-ranked option, with slightly less opposition (62.8% positive and 2.9% negative). Allowing the on-site manager full authority to determine where money at his/her site goes was the third highest-ranked option (57.1% positive and 11.4% negative).

Determining the feasibility of using outside contractors for various operation and maintenance activities was the least popular option (14.7% positive and 38.2% negative). An option presented during discussion at the workshop, Corps' management of military recreation and Natural Resources, was not well received (20.6% positive and 27.5% negative). These lower-

end options were, however, not as negatively perceived as were the low-end options in other group rankings.

Overall, the options in Group V, involving ways to increase recreation opportunities, were not very popular. Not one of the ten options presented received positive responses from 50% of the participants. Reopening closed areas was the most popular option (40.0% positive and 2.9% negative). The next highest option, which was to allow construction of more tennis court and swimming pool-type recreation facilities, was only marginally accepted, as compared to the second highest options of the other groups (33.3% positive and 5.6% negative).

Emphasis on cooperative opportunities with other associations was the lowest-ranked option. Converting Corps facilities to youth hostels received the highest percentage of negative response (32.3%) but also received "some" positive response (26.4%). This suggests an interesting split.

Summarizing the Results

This exhaustive listing of options and the positive and negative responses to them is interesting but a bit overwhelming. It is also difficult to know just what to make of the results in the broader context of the study. For example, they may help to eliminate from further consideration some options that are so negatively viewed within the Corps as probably not to be worth the implementation struggle. But a hefty positive score is hardly a sufficient condition for pushing an option forward, since the public is at least as much concerned with the outcomes here as are Corps managers.

Two kinds of simple statistical manipulation can help us search for patterns in this mass of data, patterns that should be useful to the leadership of the Corps in anticipating problems with the options ultimately pushed and in designing appropriate implementation systems. The first thing we can do is to aggregate the individual options into broader option types -- e.g., all options having to do with introducing or increasing fees; or all options dealing with budget augmentation. This can help us see whether or not certain classes of potential actions are viewed more positively than others. (The option groups, I...V, as used in the workshop are only roughly indicative of option types in the sense meant here. This will be seen more clearly below when the aggregation rules are set out.)

The second statistical operation we can try aims at determining whether any of the identified and "measured" characteristics of the respondents is systematically related to their responses. This information can help the Recreation Task Force interpret and use the results. This will be accomplished below through the estimation of a simple linear regression model.

Aggregating Options

To begin with, we defined eight aggregated response variables:

FEE aggregates options that involve new, increased, or "more realistic" fees for products or services. Includes responses to the following questions:

IA, IN, IP
IIB, IIC, IID1, IID2, IID3, IID4, IID5, III, IIJ1, IIJ2, IIJ3, IIJ4, IIL, IIN, IIO, IIP, IIQ, IIR, IIS, IIW, IIX

INNOV aggregates options that involve special events or new departures such as using CETA (sic) youth. [(sic) because CETA doesn't exist anymore and its replacement, JTPA, does not fund public-sector jobs.] Includes responses to the following questions:

ID, IO
IIA, IIF, IIG, IIU, IIV,
IIIA, IIIB, IIIC, IIIJ, IIIK,
IVI, IVJ,
VA, VB, VF, VG, VH

BRUL aggregates options that involve changing Corps budget rules to favor recreation. Includes responses to the following questions:

IIK, IIT,
IIIH

BAUG aggregates options that involve augmenting the Corps budget to help the recreation activity. Includes responses to the following questions:

IG, IH,
IIH,
IIIE, IIIF, IIIG

EASE aggregates options that involve easing one or another rule or set of rules to attract private or state/federal partners. Includes responses to the following questions:

IB, IE, IF, II, IJ, IK, IL, IM, IQ, IS, IT, IU, IV,
IIE

PROM aggregates options that involve making new or enhanced promotional efforts for Corps recreation sites. Includes responses to the following questions:

IC, IR,
IIM, IIY,
IVG

LAUT aggregates options that involve giving increased autonomy to lower-management levels, with the aim of increasing efficiency of operations. Includes responses to the following questions:

IVB, IVE, IVO, IVP, IVS

EFFY aggregates options that involve minor efficiency-related actions. Includes responses to the following questions:

IVC, IVF, IVH, IVL, IVM, IVR

Notice the following about these definitions:

- There is not a one-to-one correspondence between the groups (I...IV) and the aggregated variables, even though the group questionnaires were designed to concentrate on particular themes. This is important because it implies that we observe a larger fraction of workshop attenders rating the individual options within our option types than we would have, if we had aggregated over each questionnaire.

- Some questions are not included in any aggregated variables:

  - IVA, IVD, IVK, IVQ, VC do not seem to fit any broader concept.
  - IVN, VD, VE involve stressing local economic development, but even aggregated there are not enough observations.

- IIID, IIII involve selling assets, but again, even after aggregating there are not enough observations.

In order to get an overview of the appraisal of the broad option types represented by the aggregated variables just defined, we can look at the means of all the ranking scores assigned by all the respondents to all the included questions. These results are included in Table 2-3.

Perhaps the surprising thing about these results is how similar the rankings are, at least upon casual inspection. That is, on average the workshop participants viewed all the option types in a neutral-to-slightly-positive light. But of course the averages conceal very great differences between individual participants. For every one of these option types, the range of scores given by individuals to individual questions ranged from 0 to 5 on the recreation and funding dimensions and from 0 to 10 for the sum of those dimensions. This variation in answers is captured, at least in summary form, in the standard deviations that are also reported in Table 2-3. Using these measures -- means and standard deviations -- it is possible to test for the significance of the apparently fairly small differences in scores of the option types.[2]

The result of these tests is to show us that there are effectively two groups of option types:

Those viewed more positively	Those viewed less positively
BRUL	FEE
PROM	EASE
LAUT	EFFY
	INNOV

The BAUG option type is not viewed significantly differently from most of the members of either group (if the significance level of the t-test is set at 5 percent).

Therefore, it seems that Corps managers who deal with natural resources and real estate (the principal types represented at the Nashville Workshop) are more enthusiastic about options that:

- change Corps budget rules to favor recreation
- promote recreation at Corps sites
- allow lower level Corps managers more authority to make recreation decisions

than they are about options that:

---

[2] The test for significance of two means from samples of different size and exhibiting different standard deviations is as follows:

$t = (\bar{x}_1 - \bar{x}_2)/\sigma_u$ is distributed as Student's t

where $\bar{x}_i$ = mean of the i^{th} sample;

$\sigma_u = [\sigma_x^2 [(1/n_1) + (1/n_2)]$;

$\sigma_x^2 = (n_1 s_1^2 + n_2 s_2^2)/(n_1 + n_2 - 2)$

n_i = sample size of i^{th} sample;

and s_i^2 = variance of i^{th} sample.

TABLE 2-3

MEAN SCORES OF OPTION TYPES (AGGREGATED VARIABLES) OVER ALL RESPONSES TO INCLUDED QUESTIONS[a]

Option Type	Total Observation[b]	Recreation Score	Funding Score	Total Score
FEE	912	2.94 (1.17)	3.28 (1.22)	6.22 (1.97)
INNOV	680	3.29 (1.24)	3.04 (1.28)	6.33 (2.74)
BRUL	96	3.46 (1.16)	3.56 (1.29)	7.02 (2.12)
BAUG	178	3.58 (1.30)	2.94 (1.41)	6.52 (2.26)
EASE	496	3.17 (1.43)	2.92 (1.40)	6.09 (2.50)
PROM	185	3.60 (1.11)	3.03 (1.19)	6.63 (2.03)
LAUT	165	3.44 (1.34)	3.56 (1.34)	7.00 (2.46)
EFFY	198	2.96 (1.31)	3.27 (1.35)	6.23 (2.43)

[a] Figures in parentheses are standard deviations of calculated means.

[b] Total observations equals number questions aggregated times number of individuals answering each question.

- involve charging fees for previously free activities or increasing already existing fees
- relaxing the rules that govern relations with private or nonfederal public developers and managers
- strive for increased efficiency in recreation management

Such a result is hardly surprising, for the second set of options involves either going against the strong public-interest ethical strain within the Corps (see Chapter 1 for more on this) or making life more complicated and fraught with tensions with users. The first options aim at bringing in new resources from elsewhere in the Corps; increasing use and thus, quite probably, the political power of the managers; and letting local managers manage more independently. Whether these favorably viewed options could actually deliver on the goal set out by the Assistant Secretary of the Army (Civil Works) is quite another matter, it need hardly be said.

Relating Preference Patterns to Respondent Characteristics

The second question we can address to the Nashville Workshop data is whether there is any systematic relationship between the characteristics of a respondent and that respondent's rankings of the options. Unfortunately, we do not know a great deal about any of the respondents -- only the level at which each works with the Corps; the functional area (e.g., Natural Resources) within which each works; and the amount of experience (high, medium, low, or none) that each person has had with each individual option.

None of these data about respondent characteristics involve numbers, either continuous or integer, in any natural way. We are therefore constrained to create 0/1, or dummy, variables to capture membership in a particular set defined by the three known characteristics always in relation to a particular question because of the experience variables definition. To avoid perfect multi-collinearity in our regression analysis, we define in each case one less variable than the number of available classifications. The omitted classifications define a base group.

Because of the very small numbers of people indicating they worked either at the Chief of Engineers level or in the Planning functional area we eliminated those classifications and individuals. (The "other" level was also eliminated.) The remaining characteristics give use to the following dummy variables:

EXPERIENCE DUMMIES

EXH = 1 if H(igh) experience indicated
= 0 if otherwise
EXM = 1 if M(edium) experience indicated
= 0 if otherwise

Low/0 experience is base group

SERVICE-LEVEL DUMMIES

LDIV = 1 if level circled is DIVISION
= 0 otherwise
LDIS = 1 if level circled is DISTRICT
= 0 otherwise

PROJECT level is base group

DEPARTMENT/FUNCTIONAL AREA DUMMIES

ANR = 1 if NATURAL RESOURCES is circled
= 0 otherwise

ARE = 1 if REAL ESTATE is circled
= 0 otherwise

"OTHER" is base group (only 4 people indicated PLANNING so it was eliminated as functional area)

The regressions run to search for relationships among characteristics and option rankings were structured as follows:

$$FEE = \alpha^F + \beta^F_1 EXH + \beta^F_2 EXM + \beta^F_3 LDIV + \beta^F_4 LDIS + \beta^F_5 ANR + \beta^F_6 ARE \text{ (+ error term)}$$

$$INNOV = \alpha^I + \beta^I_1 EXH + \beta^I_2 EXM + \beta^I_3 LDIV + \beta^I_4 LDIS + \beta^I_5 ANR + \beta^I_6 ARE \text{ (+ error term)}$$

$$BRUL = \alpha^R + \beta^R_1 EXH + \beta^R_2 EXM + \beta^R_3 LDIV + \beta^R_4 LDIS + \beta^R_5 ANR + \beta^R_6 ARE \text{ (+ error term)}$$

$$BAUG = \alpha^U + \beta^U_1 EXH + \beta^U_2 EXM + \beta^U_3 LDIV + \beta^U_4 LDIS + \beta^U_5 ANR + \beta^U_6 ARE \text{ (+ error term)}$$

$$EASE = \alpha^E + \beta^E_1 EXH + \beta^E_2 EXM + \beta^E_3 LDIV + \beta^E_4 LDIS + \beta^E_5 ANR + \beta^E_6 ARE \text{ (+ error term)}$$

$$PROM = \sigma^P + \beta^P_1 EXH + \beta^P_2 EXM + \beta^P_3 LDIV + \beta^P_4 LDIS + \beta^P_5 ANR + \beta^P_6 ARE \text{ (+ error term)}$$

$$LAUT = \alpha^L + \beta^L_1 EXH + \beta^L_2 EXM + \beta^L_3 LDIV + \beta^L_4 LDIS + \beta^L_5 ANR + \beta^L_6 ARE \text{ (+ error term)}$$

$$EFFY = \alpha^Y + \beta^Y_1 EXH + \beta^Y_2 EXM + \beta^Y_3 LDIV + \beta^Y_4 LDIS + \beta^Y_5 ANR + \beta^Y_6 ARE \text{ (+ error term)}$$

Here the superscripts on the coefficients indicate which dependent variable is involved. These are very simple linear regressions, but since we have no theory to guide (or restrain) us in the choice of functional form, and since these results may be at best of modest internal usefulness, this seems sufficient. In each option-type regression, the constant term may be interpreted as the average ranking given the individual options by members of the base group (those with low or no experience, working at the project level, and in some other functional area than Natural Resources, Real Estate, or Planning). The Beta coefficients indicate how many rating points are added or subtracted on average from the base group ranking when respondents have other levels of experience, or serve at other management levels and in other functional areas.

The results of this exercise, involving only the sum variables for the option types (i.e., the total for each individual ranking of the recreation and funding score), are presented in Table 2-4.

The first observation about these results has to be that for the most part the relationships are weak. Only three of eight regressions produce F statistics significant at the 5 percent level or better. Two of the regressions have no coefficients significantly different from zero except the intercept. Two have only one significant coefficient in addition to the intercept (in both cases it is that relating to a high level of experience with the options in question). But such significant results as do appear are of some interest.

First, as a sort of reality check, we note that giving more autonomy to local managers is favored most by those managers who form the base group (i.e., they profess to see these options as helping to meet both goals of the overall study -- enhanced recreation and reduced federal funding needs.) But those at higher levels of the Corps and those in the Real Estate functional area see this option type significantly less favorably. Within an hierarchical organization with some interfunctional area tensions this is what we would expect.

Second, both the FEE and BAUG regressions have four significant coefficients in addition to the intercept. It is not clear what we ought to make of the BAUG result, since these options

may be politically and even bureaucratically unrealistic. But at least we see that these options get higher ratings from individuals higher in the structure and with more budget experience.

The single most interesting result in the table seems to be that for the FEE option type. New or increased fees may not be popular at the level of the project and among those with little experience with them, but those with more experience (with charging fees) located up the chain of command see these options much more favorably. For example, the change in averaged summed rankings as one moves up from project to divisional level and obtains more experience is:

Base Group	District Level	Division Level
Rank	Medium Experience	High Experience
5.15	6.05	6.53

Since the charging of user fees appears to be one of the revenue-raising alternatives the present administration is most willing to contemplate, this may well be a place to look for real solutions to the tough problem set for this overall study.

TABLE 2-4

REGRESSION RESULTS RELATING SUMMED RANKINGS OF OPTION TYPES TO RESPONDENT CHARACTERISTICS

	FEE	INNOV	BRUL	BAUG	EASE	PROM	LAUT	EFFY
	Coefficients (t statistic)							
α^K intercept	5.15* (24.76)	5.55* (14.31)	6.54* (8.47)	4.69* (7.47)	5.66* (12.66)	6.11* (11.04)	7.69* (11.63)	5.25* (8.17)
β_1^K (EXH)	1.02* (4.08)	0.19 (0.47)	0.51 (0.70)	1.14* (2.01)	1.43* (4.62)	1.18* (2.35)	1.28* (2.33)	1.05* (2.13)
β_2^K (EXM)	0.53* (3.10)	0.04 (0.16)	-0.19 (-0.32)	1.31* (3.04)	0.32 (1.24)	0.59 (1.64)	0.70 (1.60)	1.23* (2.93)
β_3^K (LON)	0.36 (1.75)	0.03 (0.10)	0.17 (.26)	1.33* (2.70)	-0.35 (-0.97)	0.20 (0.42)	-1.29* (-2.26)	0.57 (1.04)
β_4^K (LDIS)	0.37* (2.27)	0.18 (0.73)	0.68 (1.28)	1.07* (2.77)	0.10 (0.40)	0.17 (0.49)	-0.88* (-2.03)	0.14 (0.33)
β_5^K (AMR)	0.52* (2.59)	0.22 (0.65)	0.08 (0.12)	0.79 (1.39)	0.13 (0.33)	0.08 (0.17)	-0.33 (-0.63)	0.38 (0.75)
β_6^K (ARE)	0.80* (3.15)	-0.15 (-0.33)	0.23 (0.26)	0.67 (0.98)	-0.02 (-0.04)	0.59 (0.98)	-3.50* (-4.09)	-0.86 (-1.03)
R^2	0.049	0.063	0.034	0.108	0.046	0.042	0.23	0.09
F statistic deg freedom	8.03* (6;929)	0.36 (6;673)	0.53 (6;89)	3.47 (6;171)	3.96* (6;489)	1.31 (6;178)	8.00* (6;158)	3.07 (6;191)

* Indicates coefficient is significant at 5 percent level or better

CHAPTER 3

THE REGIONAL PUBLIC WORKSHOPS

The third element of the work performed under this contract was a series of six regional workshops at which members of the public were invited to give their views on options for meeting the Corps Recreation Study goals. Each workshop took the form of a one-day event, with supplementary evening session. Each workshop opened with an introduction to the study. Then during the morning session at each workshop, the participants were divided into two or more groups and engaged in open-ended discussion of ways to meet the study goals. During the afternoon session, the same groups reconvened and worked through a questionnaire containing fifty-four options identified in previous research and any new ideas developed at the morning sessions. The participants were asked to rate each option on a definitely should to definitely should not scale. The final part of each workshop day was a wrap-up and summary conducted by Corps study leaders. Evening supplementary sessions were conducted for those unable to get away during the day. In this chapter we summarize the relevant data about the workshops -- participation, tone and special suggestions, and rating results. We also analyze the results for patterns not obvious in the raw data.

LOCATIONS, DATES, PARTICIPATION

The workshops were held during March and April 1990, at six widely scattered locations around the forty-eight continental United States. Locations, dates, and total participation are summarized in Figure 3-1.

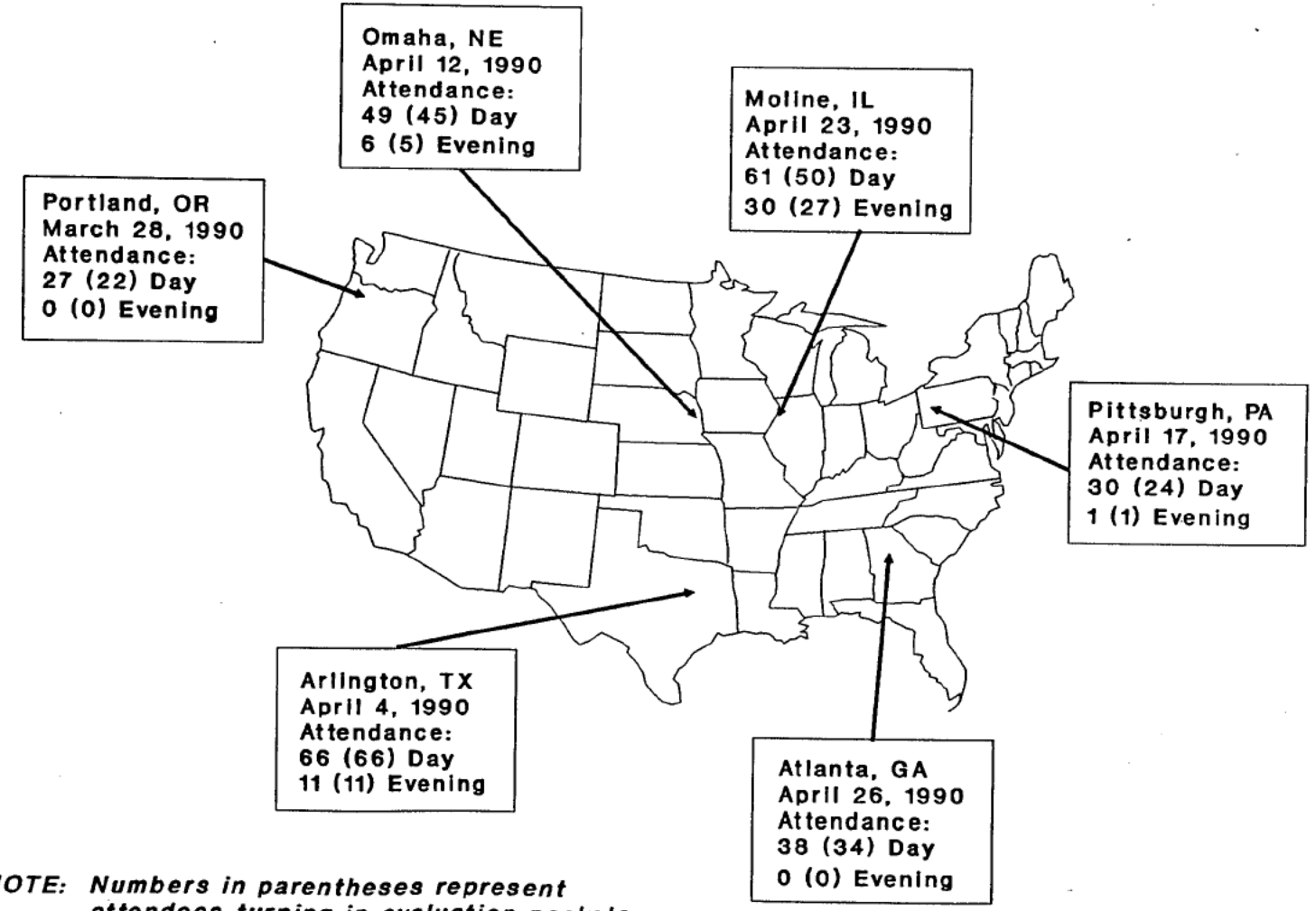
A total of 318 individuals took the opportunity to express their views on the goals of the Corps Recreation Study, 271 of whom participated in the day sessions and 47 at the supplemental evening sessions. Of this total, 286 participants completed and returned the "Suggestions Evaluation Packet" (Appendix C contains a copy of the packet), 241 during the day and 45 during the evening.

When completing the evaluation, 37 individuals checked multiple affiliations (although they were directed to check only one. Thus, a respondent might have indicated that he both worked for a state agency and was a user of Corps recreation facilities. These individuals are counted as many times as the number of affiliations they checked in the following summary of participation by affiliation category. Because there is no way to know which affiliation most influenced their responses, and because there is no reason to think that their views should be two, three, or four times as important as someone with a single affiliation, they have been eliminated from our subsequent analyses of responses.

With this *caveat* in mind, we can turn to Table 3-1, in which we report the numbers of participants in each category of affiliation and the percentage of total participation represented by each participant category. Workshop composition varied widely. For example, the Portland Workshop was dominated (numerically, at least) by representatives of government at all levels. The Arlington session was more equally balanced, as was the Atlanta Workshop. Pittsburgh and Moline, on the other hand, produced heavy concentration of users and conservationists. Overall, about 30% of participants were users or conservationists, about 30% from government, about 15% from project level business, a little more than 10% from national recreation business or from the more general business category, and a little more than 10% from academic and other affiliations.

FIGURE 3-1

REGIONAL PUBLIC WORKSHOPS BY LOCATION AND DATE



NOTE: Numbers in parentheses represent attendees turning in evaluation packets.

TABLE 3-1

AFFILIATIONS OF WORKSHOP PARTICIPANTS

	Portland		Arlington		Omaha		Pittsburgh		Moline		Atlanta		Totals	
Affiliation Categories	No.	%[a]												
User/user group	1	(4.5)	21	(21.9)	8	(14.0)	7	(26.9)	34	(36.6)	7	(18.4)	78	(23.5)
Conservation group	0	(0.0)	5	(5.2)	3	(5.3)	4	(15.4)	10	(10.8)	1	(2.6)	23	(6.9)
Corps concessionaire	2	(9.1)	17	(17.7)	4	(7.0)	3	(11.5)	7	(7.5)	5	(13.2)	38	(11.4)
Resort developer	0	(0.0)	4	(4.2)	2	(3.5)	1	(3.8)	4	(4.3)	2	(5.3)	13	(3.9)
Recreation business	0	(0.0)	8	(8.3)	1	(1.8)	1	(3.8)	4	(4.3)	4	(10.5)	18	(5.4)
Chamber of Commerce/ Tourism Assoc.	2	(9.1)	9	(9.4)	5	(8.8)	1	(3.8)	4	(4.3)	0	(0.0)	21	(6.3)
City/county/regional government	7	(31.8)	4	(4.2)	10	(17.5)	2	(7.7)	8	(8.6)	1	(2.6)	32	(9.6)
State government	6	(27.3)	13	(13.5)	16	(28.1)	3	(11.5)	4	(4.3)	6	(15.8)	48	(14.5)
Federal government	2	(9.1)	9	(9.4)	4	(7.0)	0	(0.0)	8	(8.6)	1	(2.6)	24	(7.2)
Academic	1	(4.5)	0	(0.0)	0	(0.0)	2	(7.7)	2	(2.2)	5	(13.2)	10	(3.0)
Other	1	(4.5)	6	(6.3)	4	(7.0)	2	(7.7)	8	(8.6)	6	(15.8)	27	(8.1)
Totals	22	(100.0)	96	(100.0)	57	(100.0)	26	(100.0)	93	(100.0)	38	(100.0)	332	(100.0)

[a] Percents may not add up to 100.0 because of rounding.

PROCESS

Each workshop was organized into three distinct working sessions, one in the morning, one in the afternoon, and a night session. After brief introductions as a large group, participants were divided into small breakout groups. No Corps personnel were in attendance during the small-group activities except for a silent recorder who took anonymous notes. This practice was to ensure frank and candid discussions by participants.

Each morning session was an open-ended brainstorming activity, with participants encouraged to offer any suggestions they could think of relating to the study goal. Ideas and suggestions were not confined by laws and regulations. (It may be an outcome of the study that some laws and regulations need to be changed.) After participants had an ample opportunity to offer their suggestions, each person was asked to vote for his or her top three choices from all those offered.

The suggestions from each group were categorized under the four headings of "Resource Augmentation," "Increase Revenue," "Increase Nonfederal Involvement," and "Increase Private Involvement." These categories were developed from the previous data collection efforts described in Chapters 1 and 2. High priority suggestions developed in the morning session which did not reiterate those of the evaluation packet were inserted by the facilitators prior to the afternoon breakout group session. These suggestions were representative of the regional perspective of the workshop and were not added to the packets for subsequent workshops.

The afternoon session was organized around the "Suggestions Evaluation Packet" (Appendix C). The suggestions to be evaluated fell into the previously mentioned four categories. Each small group started with a different category in the packet and discussed the pros and cons of each item before rating it individually. Participants were encouraged to give their written opinion on any suggestion under evaluation. These comments as well as general statements from attendees are included in the working paper series (one through six) discussing the Regional Public Workshops.[1] Participants helped summarize the major messages they wanted to convey and a summary report was given by the facilitators in each group to the reconvened large group.

An evening session was included in the workshop schedule to accommodate interested constituents who were unable to attend the morning or afternoon sessions. The evening participants were allowed to complete a Suggestions Evaluation Packet that included suggestions developed by participants of the morning breakout sessions.

GENERAL MESSAGES FROM THE WORKSHOPS

As anticipated, each workshop had its own flavor in part attributable to the particular mix of interests and personalities and in part to special regional interests and problems. In the following sections, we try to summarize the workshop flavors as a prelude to the more strictly quantitative analysis of responses that follows. (Individual participant comments from each workshop as well as summaries prepared by the different breakout groups are included in the Appendices of the Working Paper Series mentioned above.[2]) Recurring themes are summarized in Table 3-2.

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[1] Planning and Management Consultants, Ltd., 1990. Findings of the Corps of Engineers Recreation Study Activities. Working Papers 1-6. Carbondale, IL.

[2] Ibid.

TABLE 3-2

RECURRING THEMES

APPROPRIATENESS OF STUDY OBJECTIVES

PRIORITY OF RECREATION
- Articulate Recreation Mission/Policy
- Funding - National Level
- Encouraging Local/Private Involvement

REGIONAL CONSIDERATIONS
- Single National Policy/Manual Inappropriate
- Regional Planning Marketing Cooperation
- More Public Relations - Education - Information

BUREAUCRACY
- Reduce Complexity - Time of Review
- Inconsistent Direction
- More Local Authority

RETAIN REVENUES AT PROJECT
- Users Should Pay
- Reduces Unfair Competition with Privates
- Charge Market Values for Lake Shore Permits

ENVIRONMENTAL
- Corps Must Protect Natural Resource Base
- Don't Sell Public Lands

PRIVATE EXCLUSIVE USE
- No - But Private Development for Public Use - OK

Portland

The general consensus of the Portland Workshop was that the Corps should look seriously at placing more authority at local/regional levels if it is to stay in recreation. Creativity and flexibility in management will be required. The by-product of this shift in responsibility will be less red tape, which will enhance efficient operation. A regional scope will also account for variable supply-and-demand conditions for recreational services which are very evident across the country.

The following are general summary statements that came out of the Portland Workshop.

- The Corps should be more flexible and creative. There should be more local District authority and autonomy. The Corps should look to others as partners and for input.
- The Corps should reduce bureaucracy and red tape.
- The Corps should analyze recreation needs on a regional basis and cooperate regionally.
- Is the Corps really committed to recreation? It should either get in or let another agency do it.
- The Recreation Study Goal should place emphasis on enhancing recreation opportunities that promote economic and social development efficiency (rather than on reducing expenditures).
- The Corps needs a new division detached from military. A local civilian (with a recreation background) could operate responsibly and efficiently under Corps direction. (Comment: A concern with the military was the lack of continuity, with the District Engineer leaving every three years.)
- Relative to the Recreation Study process, public (participants) should have an opportunity to review the report before submittal (even if there is a short ten-day turn around).

Arlington

The participants in the Arlington Workshop also felt it was extremely important for the Corps of Engineers to recognize regional differences in recreational needs. The participants also felt strongly that the Corps should be conscious of the environmental impacts of the recreational developments under Corps jurisdiction, although many participants recognized the legal mandate already in existence in this regard under the National Environmental Policy Act (NEPA). The protection of surface-water and groundwater quality was the most prominent such consideration in the opinion of workshop attendees. The group formed a consensus that the Corps needs to develop a specific recreation policy; either commit to servicing recreational needs of the nation or else get out of the business entirely.

The summary suggestions developed by the Arlington Workshop participants included the following:

- The Corps must develop a clear policy with regard to recreation.

- The environmental quality of Corps recreation areas must be an integral part of Corps operations policy.
- Utilize environmental education to increase awareness of recreation facility users.
- Overall, the groups agreed that the Corps must recognize the differences in regional needs of Corps recreation facilities. The Corps should allow funds generated locally to support local operations.

Omaha

The Omaha Workshop developed a wide variety of themes for consideration by the Corps. A majority of participants felt strongly that the Corps must take into consideration regional needs in recreational planning. They also discussed the potential need for increased revenues to improve recreation development. Strong agreement was also centered on the idea of reducing "red tape" in building regional recreational development with the Corps. The participants felt the Corps should invest more money in the recreation business.

The Omaha Workshop suggestions can be summarized as follows:

- The Corps should stay in the recreation business, obtain more money for it, expand the recreation program, and make it easier for the Corps to work with others.
- The Corps must consider regional needs; one policy will not address the needs of the entire nation.
- Authority for facility management should be at the local level. This would improve the competence of facility operations, with increased understanding of the local area.
- Financial incentives/subsidies are necessary for the Corps to interest outside sponsors/partners.
- The bureaucratic system must be simplified.
- Management of lake water levels to enhance recreation will encourage local and private development and allow shoreline development.
- Improve public relations/education.
- Increase Corps revenues.

Pittsburgh

The participants of the Pittsburgh Workshop felt that a regional recreation perspective toward recreational needs would be most beneficial to maintain and develop Corps facilities. They also stressed the idea that the U. S. Congress should recognize the national need for recreation and appropriate funds accordingly. The attendees also felt that the Corps must recognize the benefits of a commitment to recreation, although these benefits may not be readily defined in economic terms.

The Pittsburgh Workshop suggestions can be summarized as follows:

- Congress should recognize the national need for recreation and appropriate more funds for this purpose.
- Avoid the implementation of user fees for general public use.
- Separate the Corps' recreation division from Corps military association.
- Increase local involvement in recreation planning at Corps facilities.
- Develop separate use guidelines for natural-versus-improved recreation areas.
- Reduce bureaucracy to encourage private development.
- Improve the communications between government agencies.

Moline

There was general agreement among participants of the Moline Workshop that recreation is an important and growing part of Corps activities. The overall messages from these attendees reflect ideas requesting the Corps to utilize volunteers, promote awareness of Corps projects through advertising, and increase local management autonomy.

Summary statements of the Moline Workshop include:

- Encourage volunteerism, supervised by the Corps, similar to Civilian Conservation Corps.
- Encourage savings incentives by allowing carry-over of funds from one fiscal year to the next without reducing appropriations.
- Promote awareness of Corps projects through advertising.
- Remove recreation from the Dept. of Defense to increase its priority.
- Develop long-range plans for recreation that include conservation goals.
- Give local managers more flexibility, autonomy, and control.
- Do not reduce commitments to recreation, as the need for these opportunities/facilities is growing.
- Do not allow new options for private involvement to give unfair advantages to new concessionaires. Consider sunk costs of previous Corps concessionaires.

Atlanta

The general consensus of the Atlanta Workshop was that the Corps must evaluate the social, environmental, regional, and national value of recreation. The Corps must do a better job as a recreation provider by developing more controlled private/public partnerships. Consistent policies/regulations must be developed with a commitment to provide recreation to all publics.

Summary suggestions from the Atlanta Workshop include:

- The Corps should conduct studies to measure economic impacts of recreation.

- The Corps should consider long-term leases (fifty-year minimum) for commercial development. This would allow private interests the opportunity to acquire capital monies and investments.
- Management policies and practices should encourage private investment to foster free market economic success.
- Place recreation as a higher priority in Corps planning and operation.
- Develop consistent regulations and policies.
- Recognize that recreation cannot be separated from other water-related management issues.

ANALYZING RESULTS FROM THE WORKSHOPS

Beyond giving workshop leaders and attending Corps personnel a chance to gauge the mood of individuals across the country, the regional workshops generated an enormous amount of data. Three hundred and eighteen people attended the workshops, and almost all filled out the "Suggestions Evaluation Packet" which contained fifty-four preprinted options, with half a dozen or so additional options generally being added by the participants. Roughly speaking, then, the workshops produced about eighteen thousand individual rankings of individual options, with accompanying information on the affiliations of the producer of each rank for each option. What does it all mean? The rest of this chapter will be devoted to three different efforts at interpretation.

First, however, we note that the raw data -- the filled-in "packets" -- reside at Planning and Management Consultants, Ltd.'s office in Carbondale, IL and have been entered into an electronic database that allows additional manipulations if necessary. Data one step from the raw state, in the form of counts of ratings by evaluation scale element and affiliation, for every option from every workshop have been supplied with the preliminary workshop reports and will not be repeated with this final report. However, the evaluation counts for all participants for all workshops are included in Table 3-3 to give a first impression of the overall results. (Only the preprinted options are reflected in the table.)

The impressions we can take away from this table must be limited by the volume of information it contains, but do include the following:

- Some options stand out as attracting substantial support, especially

  # 1 Increase use of supplemental labor sources.
  # 2 Increase use of prisoners or juvenile offenders.
  # 3 Increase the use of programs for the handicapped.
  # 4 Increase use of volunteers.
  # 6 Seek supplemental funding sources.
  # 7 Participate in recreation trust funds.
  #15 Increase recreation fees.
  #16 Increase existing recreation user fees.
  #25 Charge fair market value for all recreation outgrants.
  #26 Charge fair market value for lakeshore use permits.
  #41 Provide development incentives.
  #42 Allow federal cost sharing on wider range of facilities.
  #44 Improve existing facilities at federal cost to encourage greater nonfederal operation and maintenance.

TABLE 3-3

CUMULATIVE EVALUATION COUNTS

	DS	S	N	SN	DSN
#1	84	128	13	13	10
#2	65	97	39	29	28
#3	39	113	76	20	9
#4	112	112	15	9	7
#5	53	72	49	50	30
#6	90	94	33	19	11
#7	63	100	58	19	9
#8	26	69	51	56	51
#9	85	74	46	25	17
#15	50	102	33	30	16
#16	40	117	41	35	17
#17	41	52	57	55	56
#18	54	64	37	65	37
#19	31	64	29	74	60
#20	48	90	50	32	36
#21	30	51	41	65	70
#22	24	43	40	69	78
#23	47	53	54	58	47
#24	40	85	37	27	18
#25	51	99	52	27	26
#26	60	122	45	10	16
#27	33	30	32	69	89
#28	23	71	44	35	81
#29	26	72	58	29	71
#30	34	71	44	33	27
#31	25	96	44	42	45
#32	19	39	25	42	127
#33	10	38	35	53	118
#34	27	44	52	43	82
#40	81	74	33	27	38
#41	65	102	30	22	31
#42	70	113	29	27	19
#43	50	86	56	41	28
#44	51	92	53	36	26
#45	57	90	20	17	28
#46	80	107	18	31	23

Option Evaluation Scale:

DS = Definitely Should
S = Should
N = Neutral
SN = Should Not
DSN = Definitely Should Not

TABLE 3-3 (Continued)

CUMULATIVE EVALUATION COUNTS

	DS	S	N	SN	DSN
#47	113	105	19	12	9
#48	45	66	35	42	70
#49	62	83	58	29	28
#55	65	69	28	31	49
#56	51	82	30	49	62
#57	50	76	36	48	62
#58	32	36	62	72	66
#59	47	67	55	50	54
#60	54	78	31	18	46
#61	32	34	29	57	118
#62	46	95	51	23	53
#63	31	44	46	64	85
#64	64	62	39	25	40
#65	60	61	38	58	53
#66	27	35	37	62	108
#72	0	0	47	1	0
#73	63	86	27	35	25
#74	49	95	30	39	31
#75	44	94	43	39	22

Option Evaluation Scale:

DS = Definitely Should
S = Should
N = Neutral
SN = Should Not
DSN = Definitely Should Not

#46 Allow more flexibility in leasing.
#47 Reduce recreation cost-sharing "red-tape."
#62 Fund and/or conduct experimental and research studies, provide test sites for demonstration projects, and conduct market studies.
#74 Increase nonfederal public and/or private recreation responsibility at Corps projects.
#75 Increase Corps recreation management responsibility at its projects through increased fees.

- Many fewer options received very large total negative ranks. The really notable examples are:

#27 Reduce restrictions on private exclusive use.
#32 Sell land.
#33 Sell artifacts.
#61 Transfer Corps lands to developers in exchange for development and/or management of recreation areas.
#66 Allow private exclusive use in conjunction with private recreation development.

- For the rest, the balance was much closer, though in some cases distinctly positive, in others distinctly negative.

The lessons for the study from this way of looking at the workshop results seem to include the following:

- There are a number of paths that can be pursued with broad public support toward the goal being addressed by the study. Some of these are perhaps surprising, especially the fee increases and full-market-value options. Not so surprising is the support for ideas that seem to promise new money or lower costs, or that might make life easier for public-access but privately run facilities at Corps projects.

- Options that involve asset sales or the closing of parts of projects to public use are definitely and widely unpopular. This implies that encouraging private development as a way of raising money and of increasing use of project resources involves balancing on a political tight rope. There is plenty of opposition out there that can probably be mobilized by one misstep.

Pro- and Anti- Sentiment and the Effect of Aggregation

One way of trying to identify politically meaningful patterns in the workshop data is to concentrate on the pro- and anti-rankings and ignore the neutral rankings. Those individuals who feel that the Corps "definitely should" or "should" do something (or who feel the Corps "should not" or "definitely should not" do something else) can be presumed to care about that issue. Those who are neutral almost by definition do not care which policy is pursued with respect to that option.

But these tables are still overwhelming because of the large numbers of options and affiliations. Let us try, as we did in Chapter 2, to create aggregates of options that all deal with roughly the same approach to the Corps' goal. And let us, at the same time, aggregate over affiliations by creating broader categories for the attendees, but categories within which individuals' objectives may be presumed to be consistent.

To accomplish these two ends, we have created the following option categories[3] and aggregated affiliations.

Option Categories	Aggregated As:
1, 2, 4	"Cut Costs"
5, 6, 7, 8, 9, 34	"Special Funding"
15, 16, 17, 18, 19, 20, 21, 22, 24, 25, 26	"Raise Fees"
30, 31, 32, 33	"Sell"
40, 41, 42, 43, 44, 45, 46, 47, 48	"Shift to Nonfederal Public Sector"
55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66	"Shift to Private Sector"
23, 27, 28, 29	"Relax Demand Side Constraints"

Affiliation Groups	Aggregated As:
User/User Group/Lake Assoc. + Environmental/Conservation Org.	USER
Concessionaire + Resort Developer	PROJECT BUSINESS (PRBUS)
Recreation Business/Industry + Chamber of Commerce	GENERAL BUSINESS (GEN BUS)
City/County or Regional Government + State Government + Federal Government	GOVERNMENT (GOV)
Academic Community	ACADEMIC (ACAD)

Table 3-4 shows in its eight parts, one for each aggregation of questions, the pro and anti ranking percents for the aggregated groups. The pro- and anti- percentages are just the

[3] Suggestion 3 was eliminated from the analysis because of the widespread misinterpretation of its meaning by participants.

TABLE 3-4

PRO AND ANTI RANKINGS OF AGGREGATED OPTION CATEGORIES
BY AGGREGATED AFFILIATION GROUPS

#1, #2, #4 - Cut Costs

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	66.7	0.0	79.5	0.0	60.6	15.2	78.8	21.2	78.8	12.1	83.3	12.5	77.2	10.2
3 & 4	66.7	16.7	62.1	3.0	61.1	38.9	91.7	8.3	81.8	6.1	71.4	14.3	69.9	10.3
5 & 6	16.7	83.3	73.0	3.2	50.0	33.3	83.3	0.0	74.1	3.7	83.3	0.0	68.9	10.6
7,8,9	84.4	8.9	67.9	5.1	70.0	13.3	46.7	40.0	68.4	8.8	79.2	8.3	70.9	10.7
10	0.0	66.7	0.0	0.0	0.0	0.0	83.3	16.7	100.0	0.0	80.0	0.0	76.7	10.0
1-10	71.4	19.0	70.9	2.8	64.8	18.9	75.0	20.8	76.9	9.4	79.2	8.3	72.7	10.4

#5 - #9, #34 - Special Funding

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	33.3	50.0	38.5	21.8	47.0	24.2	68.2	21.2	45.5	28.4	58.3	20.8	47.2	25.1
3 & 4	41.7	33.3	46.2	18.9	58.3	19.4	70.8	12.5	53.0	18.2	64.3	14.3	53.2	18.3
5 & 6	25.0	50.0	53.2	15.1	75.0	5.6	41.7	41.7	42.6	37.0	50.0	25.0	51.9	22.0
7,8,9	54.5	18.2	47.7	14.8	49.4	30.7	72.7	15.2	57.9	16.8	56.9	33.3	50.0	24.3
10	16.7	50.0	0.0	0.0	0.0	0.0	83.3	16.7	50.0	16.7	66.7	20.0	61.7	21.7
1-10	46.8	28.6	44.4	18.8	51.9	25.8	68.1	20.1	48.4	25.5	58.9	24.0	50.3	23.1

Note: All figures are in percentages. Affil = Affiliation.

TABLE 3-4 (Continued)

PRO AND ANTI RANKINGS OF AGGREGATED OPTION CATEGORIES
BY AGGREGATED AFFILIATION GROUPS

#15 - #22, #24 - #26 - Raise Fees

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	18.2	54.5	52.8	20.6	46.3	35.5	25.6	56.2	42.8	33.7	44.3	25.0	43.7	32.5
3 & 4	9.1	18.2	51.7	21.9	45.5	39.4	56.8	29.5	42.1	32.2	61.0	15.6	49.0	25.7
5 & 6	45.5	22.7	47.6	26.0	50.0	36.4	31.8	50.0	35.4	39.4	25.0	25.0	42.6	31.0
7,8,9	41.3	26.7	43.5	27.6	49.0	29.6	34.0	54.7	48.6	26.0	48.2	30.1	46.0	29.1
10	63.6	18.2	0.0	0.0	0.0	0.0	50.0	50.0	22.7	36.4	61.8	30.9	51.8	34.5
1-10	39.4	26.4	49.7	23.6	48.4	32.6	35.6	50.0	41.6	33.0	49.7	24.7	45.5	30.1

#30 - #33 - Sell

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	30.8	25.0	30.8	49.0	18.2	40.9	18.2	68.2	19.3	49.4	34.4	43.8	23.8	49.8
3 & 4	0.0	25.0	36.4	40.9	54.2	37.5	68.8	31.3	37.5	54.5	42.3	39.3	39.4	41.8
5 & 6	37.5	25.0	45.2	35.7	33.3	54.2	0.0	62.5	6.5	55.6	43.8	6.3	33.0	40.3
7,8,9	43.3	33.3	31.7	45.2	39.2	38.3	25.0	35.0	38.5	41.7	62.5	17.9	36.7	38.3
10	25.0	50.0	0.0	0.0	0.0	0.0	25.0	75.0	0.0	44.4	45.0	50.0	30.0	57.5
1-10	39.3	32.1	35.5	43.2	35.8	40.6	27.1	55.2	22.4	49.1	41.4	33.6	32.2	43.5

Note: All figures are in percentages. Affil = Affiliation.

TABLE 3-4 (Continued)

PRO AND ANTI RANKINGS OF AGGREGATED OPTION CATEGORIES BY AGGREGATED AFFILIATION GROUPS

#3, #23, #27, #28, #29 - Relax Demand Side Constraints

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	25.0	75.0	27.9	39.4	36.4	36.4	20.5	65.9	20.5	54.0	56.3	25.0	27.0	47.5
3 & 4	37.5	25.0	46.6	26.1	70.8	20.8	93.8	6.3	45.5	45.5	64.3	25.0	54.8	27.9
5 & 6	50.0	50.0	34.5	33.3	45.8	29.2	12.5	87.5	38.9	55.6	37.5	18.8	36.9	39.2
7,8,9	30.0	50.0	21.2	42.3	30.0	46.7	25.0	50.0	32.9	39.5	18.8	62.5	27.2	46.1
10	75.0	25.0	0.0	0.0	0.0	0.0	12.5	87.5	25.0	37.5	40.0	45.0	35.0	50.0
1-10	34.5	47.6	31.8	35.8	37.7	39.6	32.3	56.3	28.5	49.4	43.8	36.7	33.4	42.7

#40 - #49 - Shift to Nonfederal Public Sector

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	100.0	0.0	26.9	47.7	52.7	15.5	55.5	29.1	40.2	39.8	67.5	11.3	42.6	35.3
3 & 4	95.0	0.0	50.9	18.6	45.0	18.3	90.0	0.0	46.4	32.7	74.3	10.0	57.1	18.3
5 & 6	85.0	10.0	54.3	24.8	66.7	11.7	70.0	15.0	26.7	44.4	70.0	7.5	53.9	24.3
7,8,9	88.0	2.0	55.4	12.3	73.7	11.3	70.0	18.0	50.5	22.6	66.3	13.8	66.1	12.8
10	80.0	10.0	0.0	0.0	0.0	0.0	95.0	5.0	65.0	5.0	84.0	6.0	82.0	6.0
1-10	88.6	2.9	46.3	26.2	65.3	13.0	68.8	18.8	42.5	34.7	71.6	10.3	55.7	22.5

Note: All figures are in percentages. Affil = Affiliation.

TABLE 3-4 (Continued)

PRO AND ANTI RANKINGS OF AGGREGATED OPTION CATEGORIES BY AGGREGATED AFFILIATION GROUPS

#55 - #66 - Shift to Private Sector

	PORTLAND		ARLINGTON		OMAHA		PITTSBURGH		MOLINE		ATLANTA		ALL	
Affil	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti	Pro	Anti
1 & 2	41.7	50.0	16.3	70.8	37.9	37.1	15.9	72.7	18.9	53.6	32.3	39.6	21.3	57.2
3 & 4	79.2	8.3	71.2	13.3	83.3	11.1	45.8	4.2	35.6	55.3	82.1	8.3	64.9	20.4
5 & 6	79.2	0.0	49.6	40.1	63.9	23.6	4.2	33.3	11.1	65.7	47.9	10.4	42.8	38.3
7,8,9	53.9	23.3	34.3	42.6	47.2	32.8	25.0	50.0	32.5	28.5	42.7	39.6	40.8	34.5
10	75.0	16.7	0.0	0.0	0.0	0.0	8.3	91.7	33.3	20.8	41.7	51.7	36.7	50.0
1-10	59.1	20.6	41.3	43.0	51.3	30.2	21.2	54.9	23.6	48.7	49.2	31.0	38.6	40.5

Note: All figures are in percentages. Affil = Affiliation.

aggregated versions of the ones already calculated. (e.g., Total pro (DS, S) votes on all questions in the aggregated set by persons in the aggregated affiliation group divided by the total votes cast equals "pro" percent for the aggregated option set.)

This table does seem to hold a few lessons, and though most of these are far from surprising, they are worth mentioning. First, almost every group was strongly in favor of the Corps cutting its costs by using cheaper labor. (Even the use of juvenile offenders or prisoners, Option 2, was generally viewed positively.) Second, there was also very favorable reaction to the idea of seeking additional funding for recreation through one or another special route (e.g., private donations, federal recreation lottery, or transfer of hydropower revenues). Not surprisingly, the general business affiliation group was least favorably disposed toward this set of options.

What is perhaps most surprising about this entire table is the positive reaction to increasing fees. No affiliation group -- not even the user group -- was consistently against this option at every workshop. And in no workshop was every group on balance against increased fees.

Fee introductions and increases may be politically viable and could make a dramatic difference in the net federal cost of providing recreation at Corps projects. It is, unlikely by contrast, that either the "cutting cost" or "special funding" option groups can really contribute much toward meeting the overall goal of the study. The first is unlikely in practice to make much of a difference, since it will cost money to organize and supervise volunteers or prisoners or any other unconventional sort of labor. The second option group suffers from a certain political naivete. If it were that easy to get more money for recreation, for example by cross-subsidy from hydro sales, it seems unlikely the opportunity would have been missed for so long.

The option group involving selling off assets (land and artifacts) or simply selling some sort of merchandise is on balance not popular. This result is dominated by opposition to sales of land (especially) and artifacts (to a lesser extent). On the whole, this seems a sensible result. Most individuals recognize that selling assets to support current consumption is a recipe for long-term trouble.

Policies encouraging a shift of recreation responsibility to the nonfederal public sector were popular with all affiliation groups at all the workshops, with one exception. (The private developers at Moline showed more opposition than support.) What is most remarkable here is that the government officials -- generally a group dominated by state and local government representatives -- joined in this support. This is remarkable because of the strong signals coming from other directions that the states do not want or cannot afford added recreation responsibilities. And it is by no means the case that the individual options in this category are all of the sort that imply a free ride for the states. Probably what we are observing here is the enthusiasm of those who would have new opportunities and responsibilities were such transfers effected, but who do not face the political task of finding the money.

The option group that involves ways to encourage a shift of recreation responsibilities to the private sector received very mixed rankings. No affiliation group was consistently for or against it, not even the project and general business groups. Users at some workshops were strongly against, and others weakly for. Government people were sometimes against, sometimes for. These mixed results may mean that the Corps' leadership has considerable freedom to explore specific policies aimed at drawing in more private capital and entrepreneurial energy. But for reasons discussed in Chapters 1 and 2, the private sector is not likely to be either willing or able to make much of a dent in current, or even future, Corps recreation responsibilities.

The last aggregated option group we have characterized as one involving relaxing demand-side constraints. Here again, results were mixed, with no obvious pattern. On the other hand, this is probably the least defensible of our aggregations. The other three individual options

that go to make up this group (allowing gambling, allowing the sale of state lottery tickets, and relaxing the 14-day camping limitation) are favored and opposed by roughly equal numbers. To the extent there is any message here about public opinion, it seems to have very little significance for the national study because the options themselves are not strong contenders for the roles of reducing net costs or increasing recreation opportunities. Relaxing restrictions on private exclusive use would enhance recreation quality for small groups, but would not necessarily do anything for the budget. Relaxing the 14-day camping limit might increase revenue if at some campgrounds no queue exists and campers are forced to leave before they otherwise would. The other options in this group seem to promise at best a small increase in Corps income and one of them, reducing restrictions on private exclusive use, would again make for higher quality recreation only for those with the right of use.

Strength of Agreement

Another way to tease some meaning out of the mass of workshop results is to look for strength of agreement on particular options. To do this, a strength-of-agreement index may be created that has a resemblance to the well-known coefficient of variation. Thus, for any number of ranking categories, R_1 --- R_K, and any number of individuals N, who rank an alternative in any of the K groups, the strength-of-agreement index for any one option is defined as:

$$SAI = \frac{\sum_{i=1}^{K} (N_i - N/K)^2}{(N/K)2N}$$

The two terms in the denominator of this fraction amount, first, to the number of individuals who would, on average, rank the option in each rank if ranks were assigned randomly by individuals. Or, said another way, N/K just divides the population of rankers equally among the groups. The second term, 2N, normalizes for the size of the group doing the ranking. The numerator in effect measures the distance from the observed set of rankings to the random or equal division rank.[4] In the Regional Public Workshop working paper series[5] we show the top ten options in terms of this index for each workshop. Thus if the people do in fact find themselves equally divided on the option, SAI = 0, it can be shown that the largest value for given N and K occurs when all N participants agree on a single ranking.[6]

In Table 3-5 we report the extent to which options with strong agreement index scores at one workshop also scored in the top 10 in other workshops. We include, but differentiate between, printed options and option themes identified in workshop brainstorming sessions and subsequently ranked.

We observe that no single option or theme achieved a top ten strength-of-agreement score across all six workshops -- or even across five of the six. If we expand the search for agreement to the top fifteen strength-of-agreement scores at each workshop, we do find that one option, #4,

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[4] $\Sigma(N_i - N/K)^2/2N$ would be the standard deviation if the mean were N/K -- that is, if people were evenly divided on the rank of the option on average.

[5] Planning and Management Consultants, Ltd., 1990.

[6] The value of SAI then is $(N-N/K)^2 + (K-1)(-N/K)^2$ which equals $[N^2 - 2N^2/K + KN^2/K^2]/[N/K(2N)] = (K-1)/2$. In our workshop data, K = 5, so max (SAI) = 2.0 when all those ranking an item agree.

TABLE 3-5

AGREEMENT WITHIN AND AMONG WORKSHOPS
OPTIONS ACHIEVING HIGH STRENGTH OF AGREEMENT SCORES
AT ONE OR MORE WORKSHOPS

Printed or Pre-identified Options

# of Workshops	Option #	Predominant Evaluations	Description
4	1	4 S	Increase use of supplemental labor sources
4	46	2 S, 2 DS	Allow more flexibility in leasing
3	4	2 S, 1 DS	Increase use of volunteers
3	42	2 S, 1 DS	Allow federal cost-sharing on a wider range of facilities
3	45	2 S, 1 DS	Provide lease incentives
3	47	1 S, 2 DS	Reduce recreating cost-sharing "red-tape"
2	6	1 S, 1 DS	Seek supplemental funding sources[a]
2	16	2 S	Increase existing recreation use fees

Inserted Options Based on Morning Brainstorming Sessions

# of Workshops	Predominant Evaluations	Description [General Theme]
4	4 DS	Fix the bureaucracy whether via incentives, changed regulations, new training, reorganization
3	3 DS	Create and adopt a long range policy on recreation generally (within the Corps)
3	3 DS	Improve project planning, include economic impact study and involve locals
2	3 DS[b]	Increase local management flexibility (authority)

[a] Inclusion of essentially similar inserted options from Moline and Omaha Workshops brings number of workshops agreeing up to four. The two other workshops agreed on definitely should evaluation.

[b] Moline produced two options for insertion that were very similar and on this theme.

"Increase use of volunteers," produced general and positive agreement at five workshops. Only Portland did not climb on the volunteer band wagon.

Confining ourselves to the top ten strength-of-agreement scores at each workshop, we do find that six pre-identified options and three inserted options or option themes were strongly agreed on by three or more workshops. All of this agreement was on the positive side. Four of the six pre-identified options agreed to widely fall into the category, "Increase nonfederal private involvement." Two involve attempting to cut recreation O & M costs via use of supplemental or volunteer labor. The inserted option themes that were widely agreed to involved (1) somehow fixing the bureaucracy, which is clearly perceived to function badly where recreation is concerned; (2) creating a long-term recreation policy for the Corps, presumably to attempt to do away with these periodic flutters about what the Corps is doing in recreation anyway; (3) doing a better job of local project planning, to include economic impact assessment; and (4) increasing local management authority and flexibility. (This might be seen as just another way of fixing the bureaucracy.)

Regression Relations

In Table 3-6 we report the results of ordinary least squares (OLS) linear regressions for which the dependent variables were:

Y_i = 1 if a person ranked an underlying option DS or S
= 0 if a person ranked an underlying option as SN or DSN (or N)

and I represents the aggregated option categories already defined above ("Cut Costs, Raise Fees, etc.).[7] The explanatory variables are dummies representing workshop attended (hence, somewhat imperfectly, region) and user group checked.[8] Thus,

WS1	=	1 if person attended Portland Workshop
	=	0 otherwise
WS2	=	1 if person attended Arlington Workshop
	=	0 otherwise
WS3	=	1 if person attended Omaha Workshop
	=	0 otherwise
WS4	=	1 if person attended Pittsburgh Workshop
	=	0 otherwise
WS5	=	1 if person attended Moline Workshop
	=	0 otherwise
USER	=	1 if person checked User/User Group/Lake Assoc. or Environmental/Conservation Org.
	=	0 otherwise
PRBUS	=	1 if person checked Concessionaire or Resort Developer
	=	0 otherwise
GENBUS	=	1 if person checked Recreation Business/Industry or Chamber of Commerce
	=	0 otherwise

[7] We recognize that it would be better to analyze these data using Logit or some other method suited to binary dependent variables. We would not expect the relations to differ in sign or, indeed, to differ often in significance, however, so the OLS/linear approach should not be misleading.

[8] As already noted, individuals who checked more than one user group on their evaluation form were excluded from the regression analysis.

TABLE 3-6

LINEAR OLS REGRESSION RESULTS
PROPORTION IN FAVOR OF AGGREGATED OPTIONS AS FUNCTION OF WORKSHOP AND USER GROUP

	DEPENDENT VARIABLE						
EXPLANATORY VARIABLES	CUT COSTS	SEEK SPECIAL FUNDING	RAISE FEES	RELAX DEMAND CONSTRAINTS	SELL ASSETS	SHIFT TO NON-FEDERAL PUBLIC SECTOR	SHIFT TO PRIVATE SECTOR
INTERCEPT	0.87** (16.23)	0.67** (13.18)	0.65** (16.60)	0.36** (5.87)	0.53** (7.98)	0.91** (26.18)	0.52** (15.63)
PORTLAND WORKSHOP	-0.06 (-0.86)	-0.03 (-0.46)	-0.04 (-0.78)	0.04 (0.53)	0.08 (0.83)	0.05 (1.19)	0.23** (4.99)
ARLINGTON WORKSHOP	0.07 (1.12)	-0.06 (-1.05)	-0.03 (-0.62)	-0.05 (-0.67)	-0.25** (-3.38)	-0.22** (-5.36)	-0.10** (-2.68)
OMAHA WORKSHOP	-0.03 (-0.56)	0.00 (0.07)	-0.04 (-0.92)	0.11 (1.57)	0.00 (-0.08)	-0.05 (-1.38)	0.09* (2.42)
PITTSBURGH WORKSHOP	-0.11 (-1.62)	0.15* (2.25)	-0.28** (-5.61)	-0.13 (-1.62)	-0.18* (-2.11)	-0.04 (-0.96)	-0.17** (-3.84)
MOLINE WORKSHOP	0.02 (0.32)	0.03 (0.50)	-0.07 (-1.55)	-0.12* (-1.83)	-0.15* (-2.19)	-0.24** (-6.19)	-0.08* (-2.12)
USER GROUP	-0.02 (-0.45)	-0.08* (-1.96)	-0.02 (-0.74)	0.01 (0.13)	-0.14** (-2.72)	-0.22** (-7.76)	-0.22** (-7.88)
PROJECT BUSINESS	-0.02 (-0.40)	-0.02 (-0.39)	-0.07 (1.85)	0.40** (7.07)	0.09 (1.48)	-0.03 (-0.95)	0.32** (10.35)
GENERAL BUSINESS	-0.18* (-2.86)	-0.12* (-1.93)	0.04 (0.76)	0.10 (1.40)	-0.11 (-1.36)	-0.04 (-0.87)	0.11** (2.58)
ACADEMIC	0.06 (0.61)	-0.02 (-0.19)	0.02 (0.41)	0.10 (1.05)	-0.16 (-1.61)	0.04 (0.68)	-0.12* (-2.36)
N	476	846	1589	605	566	1525	1801
R^2	0.04	0.02	0.03	0.12	0.09	0.14	0.21
F	2.16*	1.81	6.04**	8.72**	5.83**	27.90**	52.97**
deg freedom	9;466	9;836	9;1579	9;595	9;556	9;1515	9;1791

Figures in parenthesis are coefficient t values.
* Significant at the 5% level.
** Significant at the 1% level.

ACAD = 1 if person checked Academic
= 0 otherwise

Thus, the base group -- the group whose predicted favorable ranking proportion is shown by the intercept is the set of government people attending the Atlanta Workshop.

The interpretation of the (significant) coefficients in Table 3-6 is in general, then, that they represent the increase or decrease in the proportion ranking that option group favorably attributable to a shift in region or a shift in affiliation category. More carefully, looking at the coefficient for one of the workshop dummies means looking at the effect on the favorable ranking by government attendees of changing region. For any given workshop, the coefficient on an affiliation group tells us the effect or the proportion of favorable rankings of looking at a different affiliation group than "government."

Thus the predicted favorable ranking proportion associated with government group at Atlanta of "Relax Demand Constraints" was 46%. The government group at Pittsburgh was less favorable by about 17 percentage points. But the project business group at Pittsburgh was roughly 31 percentage points more favorably disposed. So the predicted (fitted) favorable proportion among project business people at Pittsburgh on the question of relaxing demand-side constraints, would be:

$$(0.46) + (-0.17) + (0.31) = 0.60$$

Because these coefficients reflect all the noise in the data caused by unmeasured variables affecting individual rankings, our R^2s are quite small (though one or two are surprisingly large) and the exercise we just went through does not produce very close matches for observed percentages favorable.

Our interest, however, is in the direction of adjustment, where the coefficients are statistically significant. What do we find? First, looking regression by regression, we see that:

- General Business participants were less favorably disposed toward Cutting Costs (through use of unorthodox labor) than were government people. No other workshop or affiliation group relation shows up as significant.

- The overall relation for Seek Special Funding was not statistically significant, so we do not want to make too much of the significant coefficients. But *ceteris paribus* the Pittsburgh Workshop people viewed this less favorably, as did users and general business people (relative to the government participants in Atlanta).

- Raising Fees was also less favorably viewed by participants at Pittsburgh. But no other workshop or affiliation variable was significantly related to this option set. The base favorable rate was 65% which is about the median value for the intercept terms.

- Relaxing Demand-side Constraints was not at all popular with the base group, and was even less popular at Pittsburgh and Moline, while being more popular with project business people -- an intuitively reassuring result.

- Selling Assets had the third lowest intercept (predicted base-group favorable rating), and each of the significant coefficients is negative; so that the Arlington, Omaha, and Pittsburgh participants were even less favorably disposed, as was the user group.

- Shifting Responsibility to the Nonfederal Public Sector was quite popular with the government people at Atlanta, displaying the largest intercept. The regression relation here was also quite strong -- perhaps remarkably strong, for cross section attitude survey data. Again, both Pittsburgh and Arlington participants were significantly less favorably inclined, as was the user group.

- Shifting Responsibility to the Private Sector had the second lowest level of predicted support among the base group. The regression relation was extremely strong and every coefficient significant at the 5% level or lower. The Portland and Omaha participants liked this option better than the Atlanta group, while the Arlington, Pittsburgh and Moline groups were more negatively inclined. Among the affiliation groups, it is reassuring to find a more favorable view of measures to increase the private sector role among members of that sector. Users and academics found the idea less appealing than the base group, *ceteris paribus*.

Looking across the rows of the table we find the following patterns.

- The Pittsburgh and Moline participants were the most negatively inclined, with significantly negative coefficients on this dummy in 4 of 7 regressions. And Arlington just trailed these two, with three significantly negative coefficients. The only statistically significant positive coefficient on a workshop dummy was that for Pittsburgh on Seeking Special Funding.

- Among the affiliation groups, the Users win the prize for negativity. The coefficient on User was significantly negative in four relations. (Seeking Special Funding, Selling Assets, and the two option groups representing shifting recreation responsibility away from the Corps.

- Project-level business people were distinctly up for relaxing demand side constraints and shifting responsibility to the private sector.

- The general-business community was down on cutting costs and seeking special funding, and up on shifting to the private sector.

What might we carry away from all this?

- Selling assets is unpopular everywhere, some places more than others, and with users more than other groups in the same region.

- Shifting responsibility toward the non-federal public sector is quite popular in most regions, but was viewed less favorably in Pittsburgh and Arlington and among users than in other regions and by other groups.

- Shifting responsibility toward the private sector is not particularly popular anywhere, though more so in Portland and Omaha than in Arlington, Pittsburgh, Moline, and even Atlanta. It is more popular with businessmen than with users or academics.

- And, again perhaps surprisingly, raising fees runs around the median favorable ranking among the base group and is only significantly less popular among Pittsburgh participants. Importantly, users did not display statistically significant hostility. Whether that translates into an absence of politically significant opposition is a different question, though one that eventually must be answered by the Corps if this strategy is to be pursued.

CHAPTER 4

OVERALL RESULTS AND RECOMMENDATIONS

This project has amounted to an effort to measure the opinions of different "publics" about the options identified by the Corps of Engineers study committees for trying to meet the dual goals of the National Recreation Study. The internal public of the Corps itself was given a chance to express itself at the Nashville Workshop. The larger publics of concerned users, related businesses, state and local officials, and even academics were asked for comments in two different settings -- a small number of one-on-one interviews without a rigid structure and six more formal facilitated workshops structured by an evaluation questionnaire. In all, almost five hundred people contributed their thoughts on the Corps problem.

It would have been convenient for the authors of this report if all those individuals had agreed on what were desirable and what were undesirable options. Of course they did not. Individual and group interests, not to say perceptions, lead to very different views of what the problem is and therefore what ought to be done. As we have indicated at various points in the first three chapters, some of the options favored by some of the groups can at best make only a marginal contribution to solving the problem. Others amount to wishing the problem away (e.g., persuade Congress to appropriate more money for recreation). With the background of data and analyses in Chapters 1-3, providing the Corps with a foundation for forming its own judgments, we intend in this chapter to present our own conclusions and recommendations. Our discussion will not touch on every strawman put forward by the study for public comment nor on every suggestion flowing from interviews and workshops. Rather, we concentrate on three areas that in our opinion share several important characteristics:

- They might actually make a difference.
- They do not appear to be utopian, for example, they do not depend on individuals becoming less self-interested.
- They did not provoke intense opposition among any of the publics.

The three areas discussed in this chapter are:

1. economically meaningful pricing
2. specific accommodations to the private sector
3. dealing with the bureaucratic monster

PRICING

If there is a big surprise in any of the data from the three public opinion sampling efforts described above, it is that the suggestions of more realistic pricing, especially in the form of fees for day-use activities, were not greeted with a firestorm of opposition. No major group, including users, was consistently against this set of options, and at no regional workshop was overall opinion decidedly negative. It is true that project-level Corps officials, perhaps anticipating that opposition would surface as soon as fees were actually charged, were fairly negative. But higher up the chain of command, a more positive attitude appeared.

More realistic pricing could certainly make a difference. According to the Federal Recreation Fee Report for 1988, the Corps of Engineers in 1988 collected just about $14.7 million

in fees from 6.67 million "fee management unit visits" (see Table 4-1). This revenue does not begin to tap the potential of Corps sites. If, for example, a one dollar fee were collected for each visitor-day in 1987, the Corps would have generated over $500,000,000 in revenue.

Beyond the revenue, pricing would make a socially beneficial difference by sending the proper signals to users. While users who came to a project only to look may be enjoying what amounts to a public good, other users, including boaters, fishermen, picnickers, and swimmers are using facilities at which the long-run cost of serving another "customer" -- of providing another recreation day of a certain type -- is not zero. In part, this is a matter of crowding. Boat ramps, parking lots, picnic areas, and beaches have fixed capacity. Above "some level of use", each additional user puts noticeable (external) costs on each other user. (This is also true of lake surface area.) But to the extent that use of these facilities implies real costs for the Corps for security, clean-up, and wear and tear on capital, there are real costs attachable to each additional visitor day. Visitors have to know what all those costs (resource and externality) are if they are to make the kind of rational decisions that welfare theorems about the market economy depend on. These arguments run both to day-use fees and to the pricing of concessions, development leases, and private exclusive-use permits.

But how can the Corps know what prices to charge? Wouldn't prices inevitably be completely arbitrary and thus not really serve the welfare end but merely raise same desired amount of revenue? Well, it is certainly true that arbitrarily set fees would be easiest to arrive at. And, at a guess, starting from zero with one eye on revenue and the other on politics, any initial set of fees would probably be so low as to have little impact on use. This is not, however, the best that could be done.

It would be entirely within the capabilities of the Corps of Engineers' Institute for Water Resources, though far from a trivial task, to conduct studies aimed at identifying efficient prices for the major recreation "goods" sold by the Corps. What is needed is knowledge of demand and supply -- of marginal willingness to pay for, and marginal cost of, providing units of the various goods over appropriate ranges of quantities provided. There are models in the literature for such efforts.[1] Much, though not all, of the necessary data are currently collected by Corps projects. The way to proceed here is probably to obtain authorization for a regional pilot study that would result in nationally transferable methodology. Such methodology would have to take into account not only Corps resources but also competing and complementary resources and their relation to within-and-without region demands. It would also have to be sensitive to the matter of demand peaking seasonally, weekly, and over the hours of any given day. For peak-load pricing would almost certainly be more efficient than temporally flat fee structures, at least for visitor use.

Therefore, our **first recommendation** is:

- That the Corps commit itself to, and obtain necessary authority for, charging at least approximately efficient prices for all recreation users that have a private-good character. These at least should include day-use recreation activities (other than just looking or sight-seeing), the granting of concession and development leases, and the granting of various types of private, exclusive-use permits. The necessary studies could also feed into a national recreation plan for the Corps, a frequent recommendation at the workshops.

RELATIONS WITH PRIVATE SECTOR

The second area in which we see scope for major improvements in Corps recreation policy, in relation to the overall goals of the Recreation Study, is the structuring of relations with

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[1] See, for example, the case studies reported in John V. Krutilla and Anthony C. Fisher, 1985. The Economics of Natural Environments. Resources for the Future. Washington, D.C.

TABLE 4-1

FEE DIFFERENCE ACROSS FEDERAL AND
QUASI-FEDERAL AGENCIES PROVIDING RECREATION

	Bureau Land Mgt	Bureau of Reclamation	Corps of Engineers	Forest Service	Fish and Wildlife Services	National Park Services	Tennessee Valley Authority
1986							
Fee Receipts	$1,198,673	$824,772	$11,903,083	$10,930,200	$154,928	$22,351,149	$553,752
Fee Mgt Unit Visits	763,900	3,365,500			5,650,200	152,839,700	321,100
Ave Fee/Visit	$1.57	$0.24			$0.03	$0.15	$1.72
1987							
Fee Receipts	$1,299,732	$835,542	$13,236,335	$11,134,519	$205,432	$41,878,220	$636,293
Fee Mgt Unit Visits	734,000	3,362,500			7,025,800	178,315,600	342,400
Ave Fee/Visit	$1.77	$0.25			$0.03	$0.15	$1.72
1988							
Fee Receipts	$1,462,562	$821,687	$14,695,951	$12,439,780	$1,695,872	$51,211,735	$757,792
Fee Mgt Unit Visits	2,061,600	3,230,100	6,672,000		8,866,600	166,993,800	411,500
Ave Fee/Visit	$0.71	$0.25	$2.20		$0.19	$0.31	$1.84

Source: Federal Recreation Fee Report - - 1988, June 27, 1989. National Park Service.

the private sector -- both small-time concessionaires and big-time developers. A start in this direction could be accomplished by working on a few quite specific problems described below. A fully satisfactory policy probably requires some more fundamental changes touched on in our third area, bureaucracy.

- A very common complaint in interviews and workshops, though not the Nashville internal workshop, was that leases for private developers of recreation related private enterprises were just too short. Apparently there is no single term uniformly applied, but periods as short as a few years were mentioned. The near-universal desire was for a minimum term of thirty years.

  The idea behind short leases is presumably to maintain flexibility and to avoid getting stuck with an undesirable or incompetent leaseholder. We believe that the existence of distinctly under-market prices for leases helps to create this perceived problem. If leases were priced at a realistic market rate, operators would either have to be competent and successful or have to abandon the lease to the Corps. Underpricing leases subsidizes incompetence.

- A similar argument says that the Corps should not force concessionaires or developers to charge, in their turn, less than market prices. Successful cooperation with the private sector involves, among other things, taking advantage of the beauty of the decentralized price system and of the self-interest of private-sector management. The Corps' worry here may be partly political (just as with its own fees) and partly the fear of "price gouging." While it would take a full-scale study to prove it, our belief is that sufficient competition exists, or could be brought into existence by additional lease offerings, to keep prices to a competitive standard. At most Corps projects, it is very likely that within, say, an hour's drive at least one other offerer of water-based recreation will exist.

- A third area with potential for improving Corps experience with the private-sector alternatives -- and one that received considerable attention in interviews and workshops -- is that of nonprice regulations on the activities of lessees. A lightening rod example is the matter of liquor service. The ability to serve drinks at a restaurant may easily be the difference between success and failure. Yet permission to serve drinks is granted as a special concession by the Corps. The justification for this policy appears to be a concern that facilities be suitable for "family" recreation. Liquor is seen as destroying that suitability. A quick survey of high-quality privately owned destination resorts and even day-use facilities should be sufficient to convince the open-minded that there is no necessary inconsistency between the serving of liquor and the attraction of families.

- There is, however, one broad area of management that respondents agreed the Corps cannot abandon to the private sector -- the environment. The Corps' interest in site planning, protection of artifacts and shorelines, and maintenance of air and water (both ground and surface) quality is entirely legitimate. Just as with any form of pollution -- visual, noise, or materials discharge -- private-sector owners have no incentive to take account of the external costs of their action. They must be forced to do some things not in their narrow self-interest because of the larger social interest.

Our **second recommendation** is, then:

- That the Corps work to change several facets of its policy toward private-sector developers and concessionaires. Particular examples include:

  - Lease terms should be longer, providing lease payments reflect market values.
  - Leaseholders should themselves be free to charge market prices except in what are probably unusual circumstances involving near-monopoly conditions.

- Nonprice regulation of leaseholder operations should be lightened up except as it pertains to the natural environment. As a particularly potent symbol of existing micromanagement, the treatment of permits to serve liquor should be changed.

REFORMING THE BUREAUCRACY

The single most pervasive theme in the interviews and workshops was the multifaceted problem of Corps bureaucracy. Specific complaints took several forms, some of them apparently contradictory. For example, some respondents in interviews and workshops saw themselves as victims of petty tyrants at the project level. Others thought their local contacts were just fine but themselves at the mercy of arbitrary superiors. Many felt that approvals for private and even nonfederal public cooperative ventures take far too long because of the very long chain of command they must ascend and then descend. Some respondents called for a single "clearinghouse" of information that would allow them to go forward with plans under some certainty about Corps policies and regulations. Others (clearly those satisfied with local officials) wanted to see considerably more authority vested in local decision makers. Some suggested special training for Corps managers in how to work with the private sector. Others wanted the Corps to be forced to take more notice of local public opinion in shaping policies at specific projects.

The very diversity of the analyses and solutions offered tells us that this is not a problem amenable to simple solution. The Corps has its own internal logic and institutional dynamic. In the recreation area, particularly, it often finds itself caught between Congress and the President. The self-protective instincts of those at the top are reflected and refracted at successively lower levels. Project management could not ignore for long, even if no books of detailed regulations existed, the concerns of those who see the national and longer-term picture from the agency's point of view.

Our own third recommendation has two parts. The first is a rather modest suggestion that attempts to change the incentives facing those Corps officials most closely associated with nonfederal initiatives in recreation at all levels. The second recommendation is more sweeping and perhaps threatening and involves (possible) creation of a new institution to manage recreation at Corps projects.

Thus our **third recommendation** is:

- That the Corps define a new functional area at every level. This might be called "nonfederal initiatives." It would be symmetric with real estate, natural resources, planning, etc. But it would have as its mission successfully involving state, regional, local, and private institutions in recreation development and management at Corps projects. Thus, career rewards would come from being helpful, prompt, etc., and at best, the "corporate culture" would evolve toward outward-looking service.

In summary, we believe that the paired goals of the recreation study will not be reached easily. But the most promising direction in which to look for a path to those goals is that of pricing. The Corps can improve social welfare and its own budget situation by pricing the services it provides -- and those provided by nonfederal and private partners -- at levels approximating what free markets would produce. In addition, the Corps could usefully work to clear away some of the underbrush in its nonprice regulation of those partners. And it might further consider modest or not-so-modest reorganizational alternatives that would change the incentives facing individual managers.

APPENDIX A

NARRATIVE SUMMARY OF PERSONAL INTERVIEWS

Appendix A provides a brief summary of each interview conducted during this research effort. To provide the desired anonymity of the interviewees, each participant was assigned a number and is referred to by that number in the Appendix.

Persons #1, #15, #36

The Savannah Valley Authority is a state authority charged with the economic development of the Savannah River Basin of South Carolina. The respondents characterized the agency as "project-driven," being interested in any sort of project having economic development potential. The SVA's connection to the COE is that the "drainage basin of the Savannah River is married to the Corps of Engineers," as one of the respondents described it.

The respondent's first key point was this: the COE places too many restrictions on what may be done with its land, and it spends too much time telling developers what they cannot do on Corps property. By doing so, it limits the options of those who know about development. The respondent stated that the COE does not understand what people look for in development opportunities, asserting that "the only way they are going to be able to attract private dollars is to allow private developers to design and market projects in the way that they see fit." This was qualified, though, by noting that development does need to be done within the boundaries set by economic development goals, environmental regulations, etc. A few examples noted were of conditions of Corps leases that were believed to be too restrictive, in particular the prohibition against liquor, the limits on the length of time a guest may stay at a site, and the length of the lease (i.e., it needs to be longer). The respondents stated that they think the best thing that can be done to spur economic development via recreation area development is to sell some of the land at Corps sites to private developers.

Their second major point was that decisions concerning how Corps lands ought to be divided up should not be made by the COE. Neither should the COE deal directly with private developers. They would like to see most or all Corps lands transferred or sold to states who would then decide how to divide up the land and establish development guidelines in cooperation with local governments and in accordance with local and state economic development goals. The COE simply does not have the knowledge of local conditions and goals that is needed to determine how recreation lands ought to be developed. Furthermore, the COE cannot think like a private developer, and this is what it needs to do to be able to determine how COE lands can be made into attractive development opportunities for private developers. They commented that it is the job of state and local agencies, not of federal agencies, to pursue development of recreation lands.

One point they kept coming back to was that development on recreation lands must be supported by the economic development of the surrounding areas. They claimed to have had success in bringing this about in the case of Savannah Lakes Village. In this program, as part of the purchase price for the land (land of which the SVA had acquired ownership from the COE), Cooper Communities provided $2 million, which was used by the Savannah Valley Authority to provide loans to support development in businesses in nearby communities. It was stated that economic development of the surrounding area is necessary for the success of recreation projects; the development of the surrounding community and of recreation lands must go hand in hand. Off-site support needs (e.g., medical, accountants) are important for making recreational sites attractive to developers and should be taken into consideration when devising development plans. There are two key judgments that the responsible public agencies ought to provide: (1) a measure of the public good that will accrue as a result of developing a particular recreational site and (2) an identification of the support facilities/services that will be necessary for the development of a particular recreational site to occur. In short, what are currently Corps lands need to be seen as a resource to be utilized as part of an overall economic development scheme administered at the state and local levels.

By utilizing the above approach, the respondents claimed that the SVA has been very successful in attracting private dollars for the development of recreational areas. They think that hotels, resorts, theme parks, etc., will be most successful if privately owned and run with a minimum of government interference (with the exception of certain environmental protection laws, regional economic goals, etc.). They see no need for grants or subsidies to developers; they believe that if developers are allowed access to recreational lands and a free hand (within, once again, certain guidelines), then economically successful development will occur. One respondent thought that even as little as 10% development of this sort would make COE development projects economically feasible.

Person #2

The respondent representing the Department of Natural Resources in Indiana stated that there are nine reservoirs in Indiana. From the beginning, the DNR has assumed full responsibility for the operation and maintenance of reservoir recreation areas (with the exception of the dam itself, the boat launch ramps, and the water). The financial responsibility for the acquisition and development of these sites has been 50/50. For land purchased jointly with the COE, each side has put up 50%. There is joint planning and development of the site, and each side pays for 50% of the designing and development costs. The DNR is satisfied with this arrangement. The DNR in general is interested in acquiring additional recreation lands, and it is interested in cooperating with the COE as much as it can. There are no specific plans to acquire more recreation lands at this time, although, were it to acquire lands, the COE would prefer to do so through purchase of the property. The DNR is also interested in entering into agreements with the COE to operate and maintain other Corps recreation facilities, although no specific sites were mentioned.

The conditions that would be required for the DNR to take over areas from the COE are those under which they have worked in the past: 50/50 cost-sharing for capital construction only. The COE would not have to split the O&M costs with the DNR. The COE would have to allow the DNR to charge user fees and keep the entire proceeds, but it was stated that they would not mind the stipulation that all such funds stay within the state park system. As far as control of these sites, the DNR must have 100% control over the operation of those areas under its direct jurisdiction. It is not the COE's job to provide O&M or oversee (closely) O&M at these sites. The DNR would accept the requirement that it be required to submit five-year and yearly plans to the COE; however, the DNR does not need the amount of oversight it is getting from the COE at this time. Challenge grants would provide additional incentive for the DNR to take over and manage Corps recreation facilities. No philosophical, financial, or legal constraints are seen that would make it difficult for the DNR to take over COE facilities, with the exception that the DNR is not able to find the state legislature.

The DNR has had some success with private developers on reservoir recreation areas. At Monroe Lake (approximately one hour from Bloomington), there is a destination resort called the Inn at the Four Winds and a privately run marina. The property is leased from the Corps. The only money the state makes from this is from gate fees (this money is reinvested in the project). This development was characterized as successful in that the area is being used, it is still attractive and ecologically healthy, and it is self-sufficient. The presence of the privately run facilities has been the key to making the reservoir self-sufficient. Overall, approximately 75%-80% of the state parks in Indiana are self-sufficient. Some make money (those near population centers or with facilities which attract large numbers of people) and some lose money. Whether a recreation facility loses or makes money is not necessarily a management problem; some facilities are simply not intensive-use areas (e.g., nature preserves, primitive areas). Fifty percent of Indiana's reservoirs are self-sufficient. This is because there are all sorts of things for which you cannot charge a user fee, and in remote areas it would cost more to have people in place to collect fees than they would collect.

An ongoing project with which DNR is very pleased is Patoka Lake. The DNR's approach there has been to divide the area around the lake into different "user areas": part of it is a wildlife preserve (there are eagles here), another part is a state recreation area (picnic areas, campsites, etc.), and a portion is reserved for commercial recreation. The DNR feels that some sort of theme park, wildlife park, or amusement facility is needed in this area to draw people to the reservoir and make it self-sufficient. This land will be leased to private developers; the DNR will not transfer or sell the land to developers. In addition, physical construction and improvements must be approved by both the DNR and the COE. Rates must also be approved by the DNR and COE. The DNR first talked to private developers to determine what sort of development potential this area of the reservoir has, then put out a prospectus to elicit proposals for the site. But nothing has been decided at this time. The thought behind this kind of development is that although every area of the park cannot be all things to all people, the developers can give people most of what they want by providing different use areas in the recreation part.

The DNR has been somewhat successful in offsetting the costs of some of its recreation facilities by leasing some portions of its lands (primarily strips of land) to farmers. The DNR takes cash bids from farmers for the right to plant on these strips. The farmers are required to leave 10% of the crop as food for wildlife. The farmers do not always pay very much for these strips (some of the plots are either difficult to get to or twisting), but there has been steady interest from farmers in planting on these strips. This also helps the DNR to provide adequate feed for animals on its lands.

Person #3

Fairfield Communities had not had much in the way of direct dealings with the COE in the past, although a number of its developments are near Corps lands. Fairfield Communities constructs condominium communities in scenic areas, the units of which are then either sold outright to single individuals, sold on time-share, or rented out. Fairfield is the largest time-share concern in the country. At this time Fairfield is primarily pursuing the development of sites near large tourist cities such as Orlando and Las Vegas.

The respondent did not consider himself to be very familiar with Corps projects. He stated, though, that if Fairfield were to be at all interested in developing Corps lands, it would require the outright sale or transfer of Corps property to Fairfield. A lease of any sort is out of the question. Furthermore, the firm would have to have a free hand in developing the site. The Corps could have some minimal control over the property (e.g., some approval of site planning and the infrastructure) but would for the most part have to allow Fairfield to develop the property in the manner it thinks will allow the development to be profitable. Fairfield would not necessarily require the Corps to provide the infrastructure; this decision would be made on a site-by-site basis. Fairfield would be willing to provide some operation and maintenance of adjoining Corps property if it contributes to the attractiveness of Fairfield's development. Fairfield would be interested in seeing what might be available through the COE, but there would have to be something in it for Fairfield.

The respondent noted some things that keep private developers from being interested in placing developments on Corps lands: the leases are too restrictive (setbacks from beaches being too wide, alcohol restrictions, and lease lengths are the particular things he named). The lease allows the COE too much control over developers and restricts ingenuity and creativity. EPA statements, although a fact of life now, tend to bottleneck development. The failure of the Corps in many cases to have a development plan and study of site potentials in hand prior to accepting bids from developers keeps developers from being interested; a good idea of what sort of development particular sites might be suitable for would make Corps projects more attractive to

private developers. The COE's biggest problem is that it lacks a marketing mentality; the developer/marketer looks at things in a way different from the way in which the COE looks at things.

Persons #4, #19

Two respondents whose business is interested in both a potential private development effort as well as a bait shop concession began working two and one-half years ago with the Corps to try to initiate a project. They note that they "are no further now than they were when they started." This is compounded by a written approval which was later rescinded at the division level.

The respondents describe the approval process as "jumping through a lot of hoops" to the point of having written approval for the project. Later, when checking with the division, they were told that the project was not approved. Thus their recommendation #1 below.

Another situation was reported where a plumber was laying a sewer line and went "over" the line and did not leave enough footage for Corps regulations. The local agent "reamed out" the plumber, the developer, and even went to the 73-year-old owner and "chewed him out" for making the error. They do not believe this to be the type of communication that the Corps desires, and certainly the public does not.

The respondent's view was that the government sets standards at levels so high ("at least double") and redoes studies ("engineering studies until you get what Corps wants") that contractors must bid high because they know the government will be involved, "The way the Corps operates, anything will cost at least twice as much." They cite an example of getting bids on road construction. Their contractor paid $10,000, and the Corps said that "you can't do the road for less than $50,000." There were plenty of examples in the area of the reputable contractor's roadwork being of good quality.

They have the perception that if the Corps is in control at the project level, they do a good job. But if the private interest is there, the Corps does not seem to want that and will do anything to dissuade or remove the private interest.

The respondents' observations and recommendations were:

1. The Corps does not have a structure set up for authority to make decisions, and this is especially frustrating when someone at a higher level reverses a decision made at a lower level.

2. If permanent-type work is to be done (trees, road, dredging, etc.), the Corps should participate and contribute.

3. The Corps seems to require private groups to do things the Corps has not done in the past and will not do in the future. They cite an example of an Indian burial area: when the Corps had it, the Corps let 4-wheelers drive over it, but when a private developer wants to use it, the Corps requires fencing, etc. They stated that "first the Corps tries to wait a private interest out to the point that they give up but when they see the private interest is staying in there, they try to 'cost them out' by throwing new requirements in front of them."

4. COMMUNICATION is a major area for improvement both within the Corps itself (people to contact, who knows the rules and regulations, who has what philosophy) and with the public (what is expected up front, what the total process is,

developing a list of "steps to be done" as a starting point). They cited an example of not hearing from the division for several months; and when contacted, were told apologetically that "someone" at the state level had told them they had abandoned the project. They also noted that the Corps had called the governor's office saying that they wanted the project built, but the Corps did not want to do it.

5. Put decisions in local hands of local people who know the project. Omaha is unfamiliar with the situation in this area. Omaha can set the guidelines, but let the local Corps office meet the guidelines. Make sure there is only one group to deal with and not this chain of decision makers.

6. Get clarification on who has what authority when. This would help the concessionaire/developer know ways to proceed and build in necessary information, steps, and resources.

In the private world, if this project, which has gone nowhere in two years could not be worked through the approval process in six months, they would "fire and rehire" because it should not take any longer than six months. Right now they feel they are no further than they were, except they are out considerable money. At the same time, they are not giving up yet.

The Corps appears to have worked so long in a "sheltered world" that it does not know/have private enterprise perspective on what is needed to move forward and accomplish something together.

Before leasing to the private sector, a comprehensive plan of all land in the area and financial plan on how to operate should be prepared by the Corps. This allows review of the potential of the developer to progress positively with the necessary resources and plans in place to meet goals and expectations.

There are many cases when the Corps of Engineers is sincerely interested in public benefit, but the problems with decision making and decisiveness (riding the fence) create frustration.

The state would probably want to have authority to sublease with the private sector.

Potential is there to upgrade facilities. The Corps cannot do this under current program.

The primary problem is that the existing areas the Corps manages are federal responsibility, and, therefore, it seems inappropriate for the state to assume the burden when the state gave up responsibility for downstream users. And there is the obligation not to further tax the population.

The secondary problem is Corps bureaucracy -- which tends to create a lot of hurdles that can slow down the process AND add costs.

Person #5

This respondent's expertise is in concessionaire management at an administrative level. Park Service facilities range from totally concessionaire-run to totally government-run. A Park Service task force is presently evaluating the role of concessionaires. The general feeling is the Park Service may back off concessionaire activity slightly because some private groups are getting too powerful. Most private operations are barely working on the margin. Some corporations put together recreation chains, bus-boat-camping, which get too close to monopolistic situations. The Park Service has a good permitting procedure in place, NPS 48. All aspects of the agreement are

laid out very well, and it has worked quite well up to now. They have found that they need to keep close control of the design/construction process, because private groups tend to cut corners or stray from the theme the Park Service wanted.

Person #6

This respondent runs a restaurant/marina on property leased from the Corps. In his words, "If I had it to do over, I wouldn't. Regulation of the pool elevation and the drought has had a severe impact on business -- only 50 out of 130 slips are in the water. The entire permitting process has been tedious, inefficient, and seemingly never-ending. The Corps leased him 70 acres, but last year the Corps restricted half of it for archeological reasons. He feels the Corps should extract what they need and get off his land. Another example: Someone at the Corps told him he could excavate at 3:1. After he finished, they told him to go back and do it at 2:5:1. Lease conditions have been a constant battle. The local Corps has been fairly cooperative. But when he has to deal with the Corps at the division level and higher, he runs into red-tape and time constraints, all of which hurt business tremendously. He suggests turning over the land to the state and letting the state sell it off. He thinks there is a good opportunity for time-shares, condos, etc. The Corps could provide cheaper power also. He also suggests the Corps avoid across- the-board policies, because supply-and-demand conditions vary greatly from region to region.

Person #7

He is a member of an Indian tribe. A general feeling of prejudice is felt by the Indians. Tribal lands occupy one-third of the reservoir shoreline, and only two Corps recreation facilities have been built on tribal lands. They feel the Corps ignores them and provides no support. One recreation site is surrounded by tribal land, but the Corps leases it to a party other than the tribe. They feel this as a "slap in the face." The Corps does not recognize tribal fishing permits. Cost-benefit-based decisions do not capture the benefits a recreational development on tribal lands would provide to the tribe (alleviate unemployment, and other social problems). The tribe could offer roads, maintenance, archeological expertise, fishing tours, and labor at a recreational facility. They are looking for just one site to start out, then progress from there. The Corps could have a "set aside pot" for the Indians, similar to the Bureau of Reclamation. Other federal agencies have special policies regarding the Indians as well.

Person #8

This respondent has helped a very rural county in the permitting process of development. He suggests that rural counties for the most part do not want/need to be involved in the process. They have neither the expertise nor the financial backing to be a major player. Thus, the Corps should deal directly with the developer or the state. Let nonfederal groups get involved in recreation, but a clear paper trail to attain such an agreement should be established. Furthermore, communication from the Corps needs to be enhanced. There are too many involved parties acting on speculation, where the Corps could clear things up significantly with some communication and well-defined policy. Capital improvements should be cost-shared or provided by the Corps.

Person #9

The Corps has committed itself to providing recreation and should continue to do so. Federal, state, and local recreation facilities at one lake could consolidate. This situation offers prime opportunity for the Corps to give up some land. Some areas are maintained too well. A

subsistence level of maintenance should be determined, thus lowering O&M costs. Maintenance-free facilities can be constructed (e.g., concrete tables). Educational campaigns for "public pride" and cleanliness of parks should be carried out. "Pack-in, Pack-out" slogans will lower O&M needs. Demand for privatization is just not there, recreationists will go to publicly run (the least expensive) parks. It could be considered if demand was there and the public's interest was maintained. Cost-sharing is a good alternative, but a major stumbling block now is that the state is on a biannual budget, and the Corps works on a fiscal budget. The cost-sharing program has to be revamped.

Person #10

This respondent has worked successfully as a state liaison between the Corps and private interest groups for various projects. He believes that there is fear on the part of local Corps of Engineers employees that agreement with any private interest on projects will ultimately result in a loss of jobs.

The respondent observed that there needs to be an ongoing dialogue at the district level in order to work cooperatively and to assure local people they will not be left out in the cold. Also, there needs to be a cost-sharing agreement with the state to develop a team approach, but make sure it does not cost the taxpayers to take over Corps responsibilities. If the actions improve the current situation, the Corps must be willing to contract with the agency to pick up the difference.

Policies need to be clarified and communicated widely. A policy allowing cooperative work now exists, but people seem to either not know it or not "buy it."

This respondent believes that selling Corps lands to the private sector will <u>not</u> work politically and would be a political mistake. Already the public sentiment has been tested to its limits.

Persons #11, #16, #29, #33

These respondents represent the local governments involved in a condominium development process. They do not want to be involved as a player in the negotiations. They do not have the time or expertise to see through the permitting process. The Corps fails to recognize it is dealing with laypersons. Communication is a significant problem -- the local governments simply do not know what to do. A mitigation campground would help the area economically. There is a demand for primitive-to-resortlike recreation, and the new campground will probably be successful. If the Corps would put in a boat ramp(s), the county would provide a road(s). This type of cooperative effort is welcome. Slightly higher fees could be obtained with very little change in demand. Some of the land the Corps bought for the reservoir is not being used. The Corps feels this land should be sold/returned so it can be placed back onto the tax roles; as it is now, it is just barren land.

Person #12

This subject was familiar with the operation of one state-chartered development authority and explained the history of the organization and its current situation and functioning. The concept for the authority was that it would obtain the master lease from the Corps and oversee infrastructure investment (roads and beaches). Then the parts of the operation with the most profit potential would be offered to private enterprises. These would pay a percentage of their gross receipts to the authority.

In the event the sublease turned out to be small, undercapitalized firms that could not handle the rough spots caused, for example, by adverse weather patterns could receive support. Of the original eight subleased from 1976, only two are still operating at the authority's development, and one of those is in Chapter 11. (The respondent felt that using bid price as the sole determinant of choice among potential lessees removed the authority's chance to look over the full set of relevant characteristics.)

The authority has gone to annual licenses for concessionaires in an attempt to keep their own flexibility to change operators. At the same time, they have been willing to build facilities to be used by concessionaires to cut down on the concessionaire's up-front capital costs.

There was, in any case, no stampede to bid for the facility leases. The respondent attributed this in some large part to a reluctance on the part of potential operators to deal with bureaucratic red tape. For example, even though the authority had the master list, all arrangements made under that instrument were, in principle, subject to two approval requirements -- the authority and the Corps. (In practice this has turned out to be largely a formality.)

The authority has not so far been able to become self-supporting -- defined as covering all operating and maintenance costs out of revenue. (But not, significantly, including the necessity of covering the costs of the initial infrastructure investment.) A consultant has persuaded the authority, which in turn has persuaded the state, that the addition of a second hotel and another golf course would provide enough additional revenue not only to cover the new capital and operating costs but also to make up the operating deficit of the existing facilities. The second hotel is now operating, and it remains to be seen what will happen.

The annual budget for the authority is currently about $14 million and it employs on average over four hundred people. The original lease was for fifty years. It was re-extended to fifty years from 1987. The state of Georgia has $40 million (in early 1970 dollars) invested in infrastructure. There is substantial Corps money as well.

Overall, the relationship of the authority with the Corps has been extremely good, though he mentioned areas that could be problems in other places or with other personalities. For example:

The lease-flooding clause
Permission to serve alcohol
Regulation of rates charged by subleased
Corps approval of structural investments

He emphasized that in some cases the Corps was as useful as a gorilla in the closet -- for example, in protecting trees and shorelines from developers who would impose external costs on other users.

The authority's experience suggests that resort development is a tough game. The respondent said that this development is a destination (as opposed to a day-use) resort. Roughly 75% of revenues come from the two hotels. The development is roughly forty-five minutes from downtown Atlanta and perhaps an hour from the Atlanta airport. In his view, a hour is a long way for a successful major resort. Overall, he felt the Corps was probably sitting on some major opportunities, but that the Corps would need to reduce its restrictions on what private enterprises can do.

Person #13

This respondent observed that there is a high level of desire for development along the Missouri River. He was on the 1986 South Dakota Tourism Task Force. He notes that the private sector is applauding the effort to develop cooperation and will share a copy of the USTTA task force report regarding ownership of public lands.

Water levels are causing problems, and it appears there are plans for opposition from the city of Mobridge. Current policies were developed for the 1940s and 1950s, when there was little or no priority for recreation relative to navigation, and they need to be brought up-to-date.

The area is now in the worst drought since dams were constructed, but this could be reversed if the operations manual could be revised.

If the Corps is serious about partnerships, then it must speed up the decision-making process and give priority to being decisive.

There are currently no criteria to follow when working on proposals, therefore, every single time the Corps is given a proposal, it must be measured against some past action. Set some guidelines and criteria to move forward.

Person #14

This respondent's involvement with the Corps has primarily been in connection with the State Film Commission, with whom he worked before coming to head up tourism development. The Film Commission's dealings with the COE concerned the making of films promoting reservoirs in the state. His current department, the Department of Economic and Community Development, seeks only to act as a catalyst for economic and community development. In this capacity it does seek to promote and market Corps facilities. It has no interest in operating or maintaining recreation lands. Neither does it at this time lease lands from the Corps.

Currently, however, the Department of Economic and Community Development is considering acquiring 6,000 acres of lakeside land (by lease, not purchase or transfer of ownership) from the Corps for the purposes of bringing in a development by Cooper Communities. The land would be run by a state authority, and then the developer would return to the state rent or lease based upon the fair market value of the land. According to the respondent, they are primarily looking at sites close to a major metro area of a neighboring state. However, this is as far as the development plan has been taken at this time. No site has been selected or master plan developed. It is still in the very early planning stages.

Persons #17, #24, #28

According to one respondent, 55% of the recreation areas operated by the state are on sites leased from the Corps. From the beginning, he stated, there has been a sharing of operation and maintenance costs with the Corps.

One point this respondent emphasized is that the goal of state parks is not to make money. The design changes necessary to make them profitable, he claimed, would detract from their attractiveness. He expressed concerns over what would happen to the quality of already developed recreation lands if private developers and concessionaires are allowed to operate on Corps lands. He felt that there is not enough motivation for private industry to keep the lands and facilities in top shape. Any privatization must be designed into the development plan for a recreation area from the very beginning and must be carefully controlled. Another concern he

expressed is for the loss of revenue for the state. At this time, the only revenues the state collects from its recreation lands are fees for the use of specific facilities (conference centers, campsites, etc.) and sales. These provide 60% of operating funds for recreation areas (the remaining 40% comes from legislature). He thinks that it does not make sense for the state or Corps to retain many of the expenses of upkeep yet give away the moneymaking end of it to private industry. He sees this as taking money out of the park system instead of keeping it there to fund and maintain parks. "If there is money to be made by a park system, it ought to be retained by the park system to reduce the tax burden" (i.e., the money that the legislature has to provide for operation and maintenance of parks over and above what the parks bring in). He also observed that some business people in his state had expressed unfair competition between preexisting businesses and those on Corps lands.

The same respondent stated that a real limitation on the ability of the state to take over the development, operation, and maintenance of Corps lands is financial. For example, his agency does not have the front-end money for construction. Concerning the possibility of some other agency taking over the operation of Corps lands, he stated that all the Corps parks he knows of are very well run; there is no way that any other agency could do it more efficiently or cheaply than the Corps does now. He feels that the Corps had originally promised to provide operation and maintenance for its recreation areas in the state and that it needs to fulfill that promise. If change is necessary, though, he thinks that a state agency would be best suited to provide O&M at Corps areas. He has no objections to the Corps leasing lands or facilities to other public agencies whose jurisdictions overlap or are contiguous with his agency's.

He further said that the state is interested in obtaining leases on additional Corps lands, but the Corps would have to provide maintenance, housing for the park employees, etc. He did say that the state would be willing to split the costs of any needed new facilities or repairs, but it would be difficult for his agency to get such money from the legislation, which is where the money would have to come from. Also, the state would not take over Corps lands just to take them over. Any area the state takes over would have to genuinely further its goal of providing recreational opportunities for the people of the state. For example, if there were Corps lands available in an area with few or no state parks available, then the state would be interested in leasing some land from the Corps. However, even if an area needs a state park, the state is not always able to provide it. He noted that he had had fourteen requests for new state parks in the last year, but the legislature was simply unable to provide the money for them. He did express some interest in the possibility of the Corps simply transferring ownership of some of its property to the state.

The group collectively did see great potential benefits from further cooperative ventures between the Corps and the state. For example, they would like to see visitor centers and interpretative facilities run as cooperative ventures between various state and federal agencies. This would not have to involve any money changing hands among the agencies involved. The cooperative venture would simply be each group doing what it can with its own resources. Areas of responsibilities would be determined by agreement among the groups.

One respondent did suggest that the Corps could save money by selling recreation equipment (especially movable equipment) from closed-down recreational sites to local recreational providers rather than simply bulldozing the equipment as it does now. It would even be cheaper to give the equipment away rather than bulldoze it (and the Corps would get some valuable PR exposure).

Person #18

The respondent runs the operation of the Park Service concessionaire program. They use planning guide, NPS 48. Nationwide in 1988, there were $480 million in concessionaire revenue,

about a 9.2% return on investment. In the Northwest it is difficult for concessionaires because of the short season (three to four months). Therefore, the Park Service subsidizes their operation. They do not want their concessionaires to fail -- they work with them. They have had to be creative about getting funding through OMB.

Person #20

Involvement of this respondent with the October 1988 pre-bid meeting was solely in connection with the search for a developer connection. He has had a great deal of experience with Corps projects, but almost entirely at military bases; almost none with the recreation side of the Corps. He has done a lot of recreation/resort architecture and engineering work but not for the Corps.

His only really relevant comments were: (1) the Corps District Office has large responsibilities other than recreation; and (2) developers do not read the Commerce Business Daily. If the Corps wants to contact them, it has to use their professional periodicals.

Persons #21, #35

These two work at the state capitol and represent the prevailing views of the governor's office. They are "ready and willing" to come to (almost) any agreement with the Corps on recreation. The state is convinced that recreation is crucial to its growth. It now receives very little benefit from the Missouri River Projects; thus recreational opportunities are "owed to them." Stumbling blocks to this point have been policy conflicts, communication problems, and a lack of a clear-cut procedure to come to any type of agreement. A high degree of frustration has been experienced, and they feel it is because the Corps itself is not sure what it wants to do. Facility level personnel are sometimes difficult because they feel their jobs are at stake. Developers are discouraged because of the long red-tape process. If the Corps was serious about nonfederal participation, it could make the process easier. They suggest the Corps offer conditional approval so developers can get to the next step. Another suggestion is to require a bond put aside for reclamation should an endeavor go under. This would alleviate the Corps' fear of abandoned projects.

Person #22

A cost-share agreement requiring capital and O&M funds, as the present policy dictates, is not considered attractive. In the 1970s the Corps required considerably less financial commitment from the nonfederal partner. This state will open up five new parks by 2010, and taking over a Corps site could be a good alternative. The state would certainly be willing to go into a partnership. They have some land next to Corps land that they would like to run, but the Corps does not seem interested. Whenever the Corps is involved, red tape slows up things tremendously. They have a few concessionaires, but they keep very close tabs on them -- they are treated more like employees than lessees. The Corps needs to recognize that it is an integral part of the nation's recreation, and should put some time and money into it. In other words, the Corps needs to show commitment to recreation.

Person #23

This subject is the director of the State Board on Tourism. The state found river development to be the chief opportunity for tourism and economic development in the state. Increased demand for recreational facilities has been experienced in the past twenty years and is expected to continue. In dealing with the Corps, communication has been the major problem. It

is virtually impossible for rural area governments to deal with the Corps directly. The problem is a combination of unnecessarily long and unclear permitting procedures and individual personalities at various levels in the Corps. When dealing with the Corps, the prevailing attitude is "prepare to be frustrated." As the nation's major recreation supplier, the Corps should concentrate more on hospitality training. It was also suggested that more flexibility be permitted in the leasing agreements.

Person #25

As a representative of a major regional developer of a resort complex, this respondent has a definite interest over time in the private recreational development along the Missouri River in the state. The firm operates resorts and has been involved with development projects on publicly owned recreation lands.

He cited an example of a problem wherein a Corps person, who fears for position or activity, starts spreading "horror stories" to campers to generate major letter-writing campaigns.

A developer does not currently have options (development tools) available because of federal land regulations, for example, inability to get ownership of land. This provides a "Catch 22" wherein the developer tries to get leasing, but there are restrictions and clauses, and when presented to lending institutions, there is reluctance to get funds for lack of permanency. Getting money is extremely hard for the lodging industry. The Corps should look at thirty-year windows and not just brief five-year windows. It takes time to line up and recoup investment money.

In addition, developers must invest six-figure amounts on major projects before they have an idea if they are going to be able to even get a lease. Clarify as much as possible before the project starts so that, later, the Corps does not "dig out surprises" (for example, later lowering water level excessively and not informing people).

If the Corps wants to retain control, it should allow the public to buy time-shares where contracts specifically state the public can own X amount of time. A big incentive for cooperation would be to allow for time-shares and private ownership that fits within the leasing of facilities.

When bidding gets too complex, the Corps gets poor-quality bids or no bids.

Observations/Recommendations

1. It has been helpful to have a point of contact with the Corps who knows related information or can track down specific information.

2. The bureaucracy of the Corps appears to have sets of regulations and rules which are used to the benefit of the Corps on an "as needed" basis. The Corps seems to have its own interpretation of the various policies, regulations, etc., and these are used only at critical times to move against a project.

3. Would like to work with the Corps on a project with the approach that when there is a problem, the team asks, "What is stopping this at this point?" and works to move on from there. This is especially important when many stops do not make sense. It appears that the Corps applies a different set of rules for developers, than to itself, and it is extremely difficult to get answers. This in turn gives the definite impression that the Corps does not want to work with developers.

4. Persistency is about the only thing that seems to get a project through the Corps of Engineers.

5. Put a project under one (functional) area, not so many different areas within the Corps; and turn projects over to the state level or perhaps even to the local level. Somewhere so the project does not "disappear" into Washington DC. "Surely the Corps would like to get rid of all the hassle of projects" and turn it over to state or a special area within the Corps.

6. Improve communication. There are situations where the Corps communication process is quite weak, one hand does not know what the other is doing. Cited were instances of press releases noting Corps announcements that Corps projects were going to close.

7. Improve attitude. There is a "protect your own butt" attitude within the Corps. Personnel appear to follow the letter of the policy statement and follow that policy instead of taking a "How do we work together to make this happen?" attitude. Everyone appears to be afraid that because of the Public Disclosure Act, information about a project will come back to haunt them. Therefore, working with the Corps on a development is bogged down in the minutiae of regulations.

8. This person visualized working with the Corps on a development project as trying to move a big cube up a hill, where lack of information, poor communication, lack of knowledge about rules and regulations (often used against the developer), and people/turf/personalities are the edges and corners that impede any movement whatsoever. The only lubricant is people trying to make things happen.

9. Set and communicate parameters at the beginning of a project. Develop a list of government standards "up front."

10. Establish one place to go for rules and regulations; if rules are not pertinent, be able to obtain an exception. Make this a "central clearinghouse" that does not have to play politics, and staff it with quality people and quality guidelines to ensure a quality level of results.

11. Establish rules and regulations for NOW and the FUTURE. Too many rules are for "dinosaurs," the effects of which are felt all up and down the river (e.g., shipping coal via trains versus barges with water traffic and water level problems). The world has changed in the last forty to fifty years! What are the new priorities?

12. Advertise where the trade people read, for example, national association listings and national publications -- not just in local newspapers, which the major players may be not reading.

13. Make things clear and make things simple -- the government and the people will get a better deal.

14. Go outside the Corps and find developer(s) to discuss recreation alternatives; the subsequent insights will prove mutually advantageous.

Person #26

The respondent stated that his firm had been involved with the Corps for approximately six years since its founding in 1981. His firm performed preliminary studies for the waterway management center at the Columbus Lock and Dam on the Tombigbee River and designed the buildings and interiors. At the Aliceville Lock and Dam (near Aliceville, Alabama), his firm

designed the visitor's center and oversaw the construction phase. His firm also helped to develop the master plan for the Blue Bluff Resort Complex in Monroe County, Mississippi (attached). The involvement his firm has had with Corps projects is limited in that it did not engage in the operation and management of sites. However, he rates himself as very familiar with Corps recreation operation.

He stated that, overall, he had found the Corps to be a knowledgeable, interested, and helpful client. One major difficulty for the Corps, as far as its ability to cut expenses, is its inefficiency. However, he thought that, to a large degree, system "corruption" would make it difficult to improve efficiency. One area of operation that he thinks could be improved is its process for accepting bids from private industry. He stated that, at this time, the process takes too long and that this provides a disincentive to private industry. He suggested that the process might be reduced from the present two-review system to a single, careful review. He also characterized the procedure whereby the Corps awards projects as "capricious," stating that there seems to be no consistency. According to him, the Corps oftentimes ignores companies with proven track records and familiarity with the Corps, in favor of less experienced and less capable companies. He sees the primary problem as resting with the first level of selection. He states that the initial "weeding out" of bids is done by people without a knowledge base appropriate to making informed decisions. He stated that the Corps could best increase its efficiency and learn what appeals to private developers by interviewing large developers (he mentioned Marriott). He stated that "this would probably teach them a lot." The Corps could hire developers as consultants with an eye toward finding ways to streamline its procedures and make Corps projects more attractive to private developers.

He stated that the Corps needs to pay greater attention to market considerations too. He observed that it often misjudges the private market's ability to bear development and maintenance costs. Many of the sites that the Corps wishes private industry to develop and maintain are too remote, would require large capital investment with low chance of adequate return, and are too high risk for most private developers to be seriously interested in undertaking their development. A prohibitive factor in many areas of his state, for example, is the absence of infrastructure (roads, sewers, etc.). However, he felt that, in at least some cases, the infrastructure problem could be worked out by the Corps through agreements with local government. He suggested that the Corps hire private developers as consultants to make reasonable cost estimates and to suggest what sorts of development can reasonably be expected by private developers. As an example of the way the Corps should proceed, he gave me a copy of a study done for the Blue Staff Resort Complex.

One idea that he thinks could strongly entice private developers to take on projects on Corps land is a grant program similar to Community Development Block Grants. He noted that such a program had helped rebuild downtowns across the nation, and he thinks that this would help induce private developers to develop and maintain Corps lands. He thinks that this is better than direct government subsidies, since it does not directly involve government money. The money for these grants would come from banks and be guaranteed by the government.

He strongly advocates increased involvement of state and local governments in the development, operation, and maintenance of Corps lands. For one thing, the success of resorts, hotels, marinas, etc., on Corps lands depends to a large degree upon the economic condition of the surrounding area. Local and state governments are best equipped to work with private developers and the Corps to secure economic development for areas around Corps lands. He also thinks that state and local governments would be very happy to gain some control over Corps lands since some of them are prime real estate. Some sort of cooperative arrangement between the Corps and state and local governments (or between private developers and state and local governments), which could be beneficial to all concerned, could probably be worked out. The Corps should more aggressively seek the involvement of state and local governments.

Person #27

The respondent works as an executive director with a development corporation involving seven communities and two tribal nations. He perceives the state area to be economically slow. Future trends all point to tourism as an economic tool -- and the cultural history of the area is one key to attracting the tourist population. He has had a successful experience with a Native American "Loop" at the Big Bend Dam which has increased visitation 33% in one year. People drive off of the interstate to visit various cultural sites and activities along the route. He has had a situation with a Corps person who was giving out confidential information in an attempt to "sabotage" and close down other projects.

Observations/Recommendations

1. Get the Corps to decide its policies, goals, and directions; then put quality people in place who support those goals and let them monitor performance.

2. Things will not work if the Corps permits one person to control use and stops the public from enjoying what is already theirs.

3. Develop a fairer policy for the entire length of the Missouri River. No one region should be depressed because of another region's goals (referring to draw down of reservoir levels for downstream navigation).

4. People in the Corps who built the river management system had a "vision" -- they left the natural beauty and did not spoil it with concrete and they are to be commended. So leave it that way and do not spoil it in the future.

5. Need a quality liaison person from the Corps who is knowledgeable, personable, informed has a noncaustic personality, and is a team player. Give the information to everyone. As it is now, people are not even comfortable asking the Corps person to attend critical meetings.

Person #30

The respondent has conducted academic and project-type research for the Corps, but mainly for the Forest Service. The Corps has defined a safe, predictable recreational opportunity which plays an important role. The problem is that the Corp's general mind-set is fairly uncreative in terms of recreation management. An "engineer's attitude" exists which is maintenance-oriented. The militaristic agency culture is very visible in the Corps. As recreation providers, the Corps needs to concentrate on trying to hire recreation specialists who know the recreation industry and know how to provide service. This has to be defined at the bottom and enforced at the top. Offering privatization opportunities would shakeup the traditional Corps thinking as well as increase efficiency. The Corps could cut costs through more efficient O&M practices.

Person #31

There are positive examples: i.e., at the Lewis & Clark Res., the private sector, the state of South Dakota, and the Corps worked very well. Spring Creek could easily be improved for a more positive result. Also, the proposed River Ranch (which will eventually be done) will be successful.

However, he mentioned a situation in which the state leased a recreation area. During a storm, high winds and wave action devastated the area, eroding forty to fifty feet of shoreline

overnight. In essence, it was a natural disaster. The state did not have resources to fix it, but the Corps called and said, "You leased it. It is your responsibility to repair!" But the state does not control the water level, and the state did not have the money to rebuild. Corps management of the reservoir level was not adequate in the circumstances. He warned that it was necessary to watch out for the Corps "looking the other way" and showing favoritism with concessionaires.

He cited as examples of inconsistency:

1. It took two and one-half years for a development on private land, across the fence from Corps access, to get a road and a simple gate for access to the property. The Corps regulations and the person overseeing this were unbelievable.

2. A concessionaire had an exclusive right to sell gas, but big boats could not make it to the docks to gas up. However, wholesalers could provide the gas to the boats through long hoses at 40 cents per gallon cheaper. There was a confrontation with the concessionaire on the "exclusive" right to sell. The Corps was far too protective of the concessionaire.

Observations/Recommendations

The Corps does a good job providing the BASICS of recreation, private groups are much better at providing such things as hotels, etc.

Frequently the Corps seems to hide behind protecting wildlife and natural areas for the good of the public when a private contractor is wanting to come in -- but in reality the public would be better served when private groups are allowed to come in and work together.

It appears that if the Corps does not want to do something, it will bring up new ideas and requirements to stop or slow it down.

When the Corps is managing a project and does not require its own people to do something, why does the Corps expect others to take the responsibility. Examples were given of 4-wheelers driving over a Corps-managed area. The Corps did not do anything to stop or control them, but when private interest is discussing it, the Corps expects others to take care of the problem. Thus, the Corps should not demand, under a new lease, something the Corps itself was not practicing.

Another simple recommendation, improve communication and consistency in doing things.

Person #32

When we explained the purpose of the interview and the source of his name (the October 1988 private sector initiative meeting), the subject reacted very strongly).

The meeting was "a joke" because:

- The Corps had not done its homework, by which he explained he meant market analysis, thinking about site assets and liabilities, and setting out at least a general site plan.

- The Corps had not targeted the proper developers -- corporations or individuals with access to major amounts of investment capital. (This subject's estimate was that of the twenty to fifty attendees, five or fewer were even developers. The rest were "sharks" cruising in search of work within a developed consortium.)

Much of the rest of the interview was taken up with discussion of alternative approaches to involving the private sector, with emphasis on the role of state-established "development authorities." Specific examples mentioned were:

- Lake Lanier Islands Development Authority in Georgia.

- The Savannah River Authority (SVA), a creature of South Carolina. He described attending a meeting the previous evening to discuss a possible feasibility study for a 3,000-acre tract being assembled by the SVA from Corps and private lands. He also mentioned Savannah Lakes Village, a multiple-use development for which SVA was the catalyst, including arranging for public infrastructure investment.

The subject felt these authorities could serve an important buffering and filtering function between the private sector and the Corps bureaucracy.

He also mentioned a Mississippi initiative to put JP Coleman State Park on the Tennessee waterway into private hands.

Person #34

The respondent has extensive knowledge of Corps recreation. He did his master's thesis on it in 1983. Recreational demand has increased constantly, and the Corps has gradually been reducing its staff and contracting work to the outside. Considerable time and effort is put into determining whether Corps staff or contractors should operate and maintain Corps areas. An overall budget cut came down from OMB, and the Corps cut recreation the most. In many instances leases are broken, and areas sit vacant because nobody wants to take them over within that jurisdiction. In the Northwest, most of the prime recreational sites are run by nonfederal groups. The Corps needs to take the attitude of a partner rather than a dictator. Private groups, in general, have a difficult time because the recreation season is very short. Starting in the Southeast and moving Northwest, more opportunities for privatization exist in the Southeast because the Corps owns more of the recreational lands. Going to the Northwest, Corps lands compete with Forest Service, Park Service, Bureau of Reclamation lands. This supply of public land makes privatization difficult.

Person #37

Before working at the Park Service, the respondent was employed by the Corps. Reasonable fees for general recreation would likely be accepted by the public. O&M efficiency could be improved by designing maintenance-free facilities, hiring contractors to pick up garbage, etc. Most local governments do not have the financial stability to get into a lease agreement for O&M of a recreation facility. Therefore, agreements at the state level should be focused upon. Privatization would be a good alternative as long as the public is allowed access. The opportunities in the Northwest for private ventures are limited because of the tremendous supply. The Corps has more of an engineering mentality, where the Park Service has a wildlife and recreation mentality. The Corps should concentrate on public relations in recreation.

Persons #38, #39, #40, #41

As district personnel, these individuals have extensive experience with recreation at Corps facilities. Generally, they have had good success with cooperative agreements involving state and local governments and private groups. Several instances were named where private groups

requested development on Corps lands and were denied. In many cases the private group developed on land adjacent to the Corps lands and are quite successful. This group felt well-designed privatization agreements would enhance recreation and cut Corps costs extensively. One suggestion was to allow a developer to develop a site on a Corps lake with the agreement that they would maintain the rest of the lake area (e.g., pick up garbage at hiking areas, maintain access roads.) There was a very strong feeling that the Corps should allow more decisions to be made at the district level. Too many decisions are contingent upon approval from personnel higher up in the Corps who are removed from the actual recreation climate of the region. They suggested this would also help with the ever-present red-tape problems. Cost-sharing arrangements are simply not working, possibly because they have to go through the Secretary of Defense's office. They felt recreation programs in their district could be run at close to "no-cost" if they had the flexibility to run things as they saw fit. There needs to be a structure developed in which innovative ideas can be tried. The Corps could develop a "model district" to test out new ideas and arrangements for recreation management.

Person #42

This individual, a planner for the Corps, is familiar with concessionaire-related decisions concerning Corps facilities. An interdisciplinary team develops the master plan for each site. Proper land allocation is the main intent. Once high- and low-use recreation lands are defined, a decision is made whether second- or third-party involvement would be beneficial. A general market study is conducted to see if demand for recreation development exists. Existing concessionaires are protected -- the Corps will not allow further development unless it feels enough demand exists to keep all existing groups in business. The Corps cost-sharing agreement has never been used in the district (since the existence of the program.) The state of Missouri was interested but backed out at the last minute. The overall relationship with state/local governments has been favorable. The Corps would welcome increased recreational interest from state government.

Person #43

This person has extensive experience in concessionaire planning for the Corps. He has been involved in market studies. The Corps is involved in private development, but under the present arrangement (Corps policy/mind-set), not much more could be done in this area. The emphasis has been mainly with marinas; resort development has received little attention. The general agency feeling is to preserve and maintain a pristine shoreline. It will be difficult to shake this attitude, therefore private groups must be brought into the scene while maintaining a high level of environmental quality. This can be done, but it will take some thought. A general policy change which looks favorably upon privatization needs to be implemented. The Corps and other involved parties should tread carefully -- many recreation operations are marginal, and many state/local recreation budgets are peaked out. Leases should be designed which cause revenues to be invested back into the site.

Person #44

This person owns/runs a resort development on a Corps lake. His lease agreement is through the state, who is leasing it from the Corps for a state park. The difference between dealing with the Corps and the state has been incredible. He finds the Corps to be very unbusinesslike, and the state to be very cooperative to his business needs. The Corps has displayed a painful lack of expertise concerning private development issues. Cooperation has been a big problem -- the Corps maintains a "we want" rather than "how can we help" attitude. Regulations that seem unfair have been a hinderance, for example, gas tank regulations that

pertain to him but not to the farmer across the road; regulating his hotel rates based upon TVA rates. The state advertised for bids and provided $3 million incentive for start up. Since he was awarded the lease, the state has been very cooperative, and he feels he is working with them (versus against them). His chief recommendation to the Corps is to hire personnel who have experience in private industry. The state, for example, has hired a mortgage-financing expert to design and carry out its leasing agreements.

APPENDIX B

NASHVILLE WORKSHOP QUESTIONNAIRE

Name:_____ Office Symbol/Project: Phone:

Circle:

1	OCE	1	Natural Resources
2	Division	2	Planning
3	District	3	Real Estate
4	Project	4	Other:_____
5	Other:_____		

Extensive experience with the following project(s) related to this set of options:

1. 2.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	
I. WAYS TO INCREASE PRIVATE AND NON-FEDERAL INVOLVEMENT.			
A. Reduce the restrictions on the type and location of private exclusive use in conjunction with public recreation and charge a realistic fee for that use.			
B. Allow residential developments on Corps owned lands.			
C. Engage in economic promotion and marketing to encourage private/non-federal entities to lease recreation areas which are capable of earning a profit.			
D. Use Corps resources to develop a regional promotion program for the region/area/lake/park.			

B-1

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
E. Liberal partnershipping and/or cost sharing - (Public law 89-72, "Federal Water Project Recreation Act", requires the Corps to obtain a non-federal public entity to share 50/50 in the costs of developing recreation facilities and requires the non-federal entity to operate and maintain those recreation facilities. Although the act applies to projects authorized after 1965, several past administrations have applied the cost-sharing and operation and maintenance (O&M) requirements to any new developments at pre 1965 projects.)				
F. Ease the cost sharing restrictions on development, pay back, types of facilities, potential sponsors, etc.				
G. Offer low interest, long-term Federal loans for private/non-federal entity to develop public recreational facilities on Corps lands/waters.				
H. Lease out lands for public recreation and then construct all or part of the infrastructure including roads, parking lots, boat ramps and sanitary facilities (which usually constitutes the largest initial capital expenditures).				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
I. Seek legislative authority to acquire land to facilitate recreation development under eminent domain to provide a private/non-federal entity with adequate land and location to engage in profitable public recreation activities.				
J. Provide leasing incentives.				
K. Lengthen the term of the lease to allow long-term financing.				
L. Eliminate or reduce current restrictions on types of recreation lessees may provide on Corps property.				
M. Relax the Corps 14 day camping restriction.				
N. Allow groups/associations etc. who operate parks to charge discriminatory fees to members to encourage those groups to take over recreation area.				
O. Encourage college or university to run park(s) using students who are gaining college credits and/or money from their efforts, i.e. graduate assistants/interns, etc.				
P. Encourage "members only" recreational developments when members pay the O&M.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
Q. Allow inclusion of several recreation areas in a single lease instrument.				
R. Foster regional and/or local organizations to promote individual lakes or regions.				
S. Liability Insurance. The high cost of liability insurance for non-Federal public and private entities providing recreational and other services discourages their assumption of Federal areas. Congressional statute should be recommended to limit their liability and encourage their operation of Federal properties.				
T. Rental rebates. Although the regulatory constraint of a graduated rental system was addressed by the Strawman, rental rebates could be offered to Corps concessionaires who also provide non-revenue producing recreation activities.				
U. Funded cost-share program. One of the Divisions made a strong case for a well-funded cost-share program with which the Corps could respond when potential cost-share partners come forward.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
V. Rent-to-own. Develop a "rent-to-own" plan for current Corps operated areas that would encourage small business interests to take over Corps operated areas.				

Additional Options:

W.

X.

Y.

Z.

Additional Comments:

Name:_____ Office Symbol/Project: Phone:

Circle:

1	OCE	1	Natural Resources
2	Division	2	Planning
3	District	3	Real Estate
4	Project	4	Other:_____
5	Other:_____		

Extensive experience with the following project(s) related to this set of options:

1. 2.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	
II. INCREASE REVENUES.			
A. Implement nationwide reservation system.			
B. Charge a variable rate for camping sites depending on location and amout of use.			
C. Expand the Corps authority to include charging for day use fees.			
D. Charge for what we have been giving away, such as:			
1. Access for hunting, fishing or trapping.			
2. Boat licenses (require each boat on Corps lake to have Corps boat license).			

B-6

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
3. Firewood				
4. Expand the number of commercial activities allowed on Corps lands and water, and charge for all those activities.				
5. Charge for certain ranger activities such as off-site presentations, interpretive tours, programs, etc.				
E. Eliminate the free camping requirement.				
F. Develop special event areas and charges.				
G. Reduce restrictions to encourage or allow concerts and other non-water related special events to be held on Corps property for a fee.				
H. Have the Corps purchase recreation equipment.				
I. Charge rent for use of Corps facilities such as auditoriums, amphitheaters, etc.				
J. Allow the sale of items the Corps could offer and traditionally has not sold (Must guard against unfair competition.)				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
1. Loosen restrictions on concession stands in public recreation areas for sales of ice, beer, soft drinks, etc.				
2. Sell visitor survey information, zip codes, etc.				
3. Sale of merchandise (T-shirts, brochures, etc.)				
4. Sell recyclable materials from the public use of Corps lands.				
K. Return of revenue to Corps from concessions, leases, etc.				
L. Charge a realistically equitable fee for the processing of permits, lease, and license applications.				
M. Promote our recreation areas nationally/internationally to increase visitation and income.				
N. Charge for recreational boats going through locks.				
O. Establish Corps membership campgrounds nationwide (Castle Club) where all members would pay a fee and receive ID card which would allow free admittance and a reduced use fee.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	

P. Golden Age and Golden Eagle Passports. Increase revenues through fees associated with these programs. One-time administrative fees could be charged for issuing passports. A change in regs to allow for half price on the basic fee, but full price on hookup charges (especially electricity), would help increase Corps revenue and at same time be fair to card holder.

Q. Shoreline use permits. Shoreline management regulations were identified by the Strawman as regulatory constraints, but a revenue enhancing idea was put forward to charge fees for shoreline use permits based on the fair market value in the local area.

R. Concession rents. Start charging any commercial concession operating on Corps-owned lands, including state parks, etc., rent for the privilege of operating a money-making venture on Federal property. Rent monies should then be returned to the project.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
S. Sell advertising. Sell advertising space in Corps-produced publications such as lake brochures. Another suggestion was encouraging concessionaires to advertise in Corps brochures, which would help offset the brochure printing costs to the Corps and improve sales and rentals for the concessionaire.				
T. SRUF funds. Allow SRUF funds to be utilized for the hiring of personnel only at the field project where they are generated and without counting against FTE ceilings.				
U. Gambling. Allow riverboat gambling as a means of increasing revenues to the Corps and dedicating the funds to the recreation O&M program.				
V. Lottery tickets. Allow the sale of state lottery tickets at concessions. This would increase the concessionaire's revenue and the return to the Corps. Another suggestion was for Corps park attendants to sell the lottery tickets.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
W. White water releases. The Corps currently cooperates with clubs and outfitters by providing white water releases from dams when not interfering with another Corps mission. When releases meet the needs of a particular group, fees could be charged to recoup costs.				
X. Itinerary planning. Service to campers for a fee.				
Y. 1-900-Number. Initiate a 1-900-FEE number for campground information.				

Additional Options:

Z.

AA.

AB.

AC.

AD.

Additional Comments:

Name:_____ Office Symbol/Project: Phone:

Circle:

1	OCE	1	Natural Resources
2	Division	2	Planning
3	District	3	Real Estate
4	Project	4	Other:_____
5	Other:_____		

Extensive experience with the following project(s) related to this set of options:

1. 2.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	
III. BUDGET AUGMENTATION (with Non-appropriated Funds).			
A. Develop a program to solicit nationwide voluntary contributions and donations.			
B. Encourage sponsorships to promote corporate and/or individual financing of public recreation sites for which sponsor gets special acknowledgement.			
C. Develop challenge grants program for large corporations to pledge material, money, and/or labor matched by federal contribution to accomplish a specific task.			
D. Conduct land sales with receipts going to recreation O&M.			

B-12

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
E. Establish Corps recreation trust to provide monies for public recreation.				
F. Organic Act. Legislation for a recreation and natural resource management organic act was recommended, with one objective being that the Corps would become eligible for Land and Water Conservation Fund disbursements.				
G. Excise taxes. The Corps could seek legislation that would provide an excise tax on the sale of major pieces of recreational equipment such as recreational vehicles or motorboats.				
H. Fees from other project purposes. Suggestion made that the Corps charge additional fees for hydropower generation, acquatic plant control, etc., and dedicating the revenues to recreation programs.				
I. Armed services involvement. The Corps could make available to the military unused, developed areas in exchange for contributions toward O&M costs.				
J. Prisoners, juvenile offenders. Greater use of juvenile offenders to perform maintenance and repair work at Corps recreation areas.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
K. CETA Program. Comprehensive Educational Training Act (CETA) functions in many localities, employing disadvantaged youths for summer months in various public works- related projects. Make greater use of this program for summer maintenance activities.				

Additional Options:

L.

M.

N.

O.

P.

Additional Comments:

Name:_____ Office Symbol/Project: Phone:

Circle:

1	OCE	1	Natural Resources
2	Division	2	Planning
3	District	3	Real Estate
4	Project	4	Other:_____
5	Other:_____		

Extensive experience with the following project(s) related to this set of options:

1. 2.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	
IV. OPERATION & M AINTENANCE EFFICIENCIES.			
A. Initiate peer review process.			
B. Allow on-site manager to determine where all of his/her money goes. "Authority equal to responsibility".			
C. Swap out recreation areas with other agencies to facilitate maintenance and management efforts.			
D. Re-organize for more efficient operation.			
E. Adope a "one stop outgrant service" which authorizes local manager to issue licenses/permits for all outgrants.			

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
F. Reduce the frequency of in-house inspections.				
G. Monitor facility use levels and conduct visitor preference survey and eliminate unwanted facilities and services. Provide more facilities wanted by the visiting public.				
H. Encourage and fund consolidation/ renovation of facilities to improve or eliminate inefficient recreation areas.				
I. Encourage the increased use of volunteers and remove the restrictions considering their handling of money and use of vehicles.				
J. Institute adopt-a-park programs.				
K. Encourage professionalizing and improve human resource management.				
L. Visitor centers. Visitor centers could be closed on a seasonal basis.				
M. Minor concessions. Advertise, without the necessity of a feasibility study, for minor concessions in parks such as snack bars, soda machines, ice machines, camp stores, etc.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
N. Commercial activities program. This program involves determining the economic feasibility of contracting various O&M responsibilities (e.g., lawn maintenance)to non-Corps commercial operators.				
O. Cost-sharing agreements. Eliminate the requirement for the ASA to approve cost-sharing agreements under $25,000, allowing on-site personnel greater management control.				
P. Signage. Authorize ordering officers to procure recreation signs from vendors other than Federal Prison Industries when the vendor's price is less than the FPI price. Greater on-site managment would lead to greater efficiency.				
Q. Retirement payment. At retirement time, the Corps could make a cash payment to all employees for their unused sick leave. This would increase organizational productivity.				
R. Self collection of camping fees. Self-explanatory.				
S. Division management. Consider delegation of approval from HQUSACE to the Division office on all aspects of the recreation program.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating	+Opportunities - Constraints with comments
		Rec $	

Additional Options:

T.

U.

V.

W.

Additional Comments:

B-18

Name:_____ Office Symbol/Project: Phone:

Circle:

1	OCE	1	Natural Resources
2	Division	2	Planning
3	District	3	Real Estate
4	Project	4	Other:_____
5	Other:_____		

Extensive experience with the following project(s) related to this set of options:

1. 2.

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
V. INCREASED RECREATION OPPORTUNITIES.				
A. Provide test sites for experimental recreation i.e. demonstration projects.				
B. Allow more local community type recreation facilities (tennis courts, swimming pools, etc.).				
C. When demand warrants, reopen closed areas and renovate for Corps/private/non-federal takeover.				
D. Assist in the promotion of regional economic development.				
E. Cooperate with the local business community.				

Strawman	(H, M, 0) Experience	5 Hi to 1 Low Rating		+Opportunities - Constraints with comments
		Rec	$	
F. Emphasize research support programs.				
G. Corps-sponsored event. Market and promote Corps recreation areas to increase visitation and income. One step further would be for the agency as a whole to sponsor a regional or national event, like the Postal Service is sponsoring the Olympics.				
H. American Youth Hostels. The Corps could conduct a nationwide survey to identify buildings available for conversion to hostels. This would enhance recreation opportunities and save the costs of renovation, maintenance, removal, and demolition of Corps properties.				
Additional Options:				
I.				
J.				
K.				
L.				
M.				
Additional Comments:				

APPENDIX C

REGIONAL PUBLIC WORKSHOPS SUGGESTIONS EVALUATION PACKET

CORPS OF ENGINEERS RECREATION STUDY REGIONAL WORKSHOP

Suggestions Evaluation Packet

AFFILIATION: **Please check below the one category that best describes the organization, agency, or group that you are representing today:**

- ☐ USER/USER GROUP/LAKE ASSOCIATION
- ☐ ENVIRONMENTAL/CONSERVATION ORGANIZATION
- ☐ CONCESSIONAIRE WITH CORPS
- ☐ RESORT DEVELOPER/OPERATOR
- ☐ RECREATION BUSINESS/INDUSTRY
- ☐ CHAMBER OF COMMERECE/TOURISM ASSOCIATION
- ☐ CITY/COUNTY OR REGIONAL GOVERNMENT
- ☐ STATE GOVERNMENT
- ☐ FEDERAL GOVERNMENT
- ☐ ACADEMIC COMMUNITY
- ☐ OTHER: Please specify_____

EVALUATION SCALE: **The following scale should be used when evaluating suggestions within this packet:**

"The Corps . . .

DS	=	**Definitely Should**
S	=	**Should**
N	=	**Neutral**
SN	=	**Should Not**
DSN	=	**Definitely Should Not**

SUGGESTIONS CATEGORY: **RESOURCE AUGMENTATION**

"The Corps . . .

DS	**S**	**N**	**SN**	**DSN**	**1.**	**Increase the use of supplemental labor sources.**
DS	S	N	SN	DSN	2.	Increase the use of prisoners or juvenile offenders.
DS	S	N	SN	DSN	3.	Increase the use of programs for the handicapped.
DS	**S**	**N**	**SN**	**DSN**	**4.**	**Increase the use of volunteers.**
DS	**S**	**N**	**SN**	**DSN**	**5.**	**Actively seek donations.**
DS	**S**	**N**	**SN**	**DSN**	**6.**	**Seek supplemental funding sources.**
DS	S	N	SN	DSN	7.	Participate in recreation trust funds.
DS	S	N	SN	DSN	8.	Support excise taxes on recreation equipment.
DS	S	N	SN	DSN	9.	Direct revenues from hydropower sales to support recreation programs.
DS	S	N	SN	DSN	10.	
DS	S	N	SN	DSN	11.	
DS	S	N	SN	DSN	12.	
DS	S	N	SN	DSN	13.	
DS	S	N	SN	DSN	14.	

SUGGESTIONS CATEGORY: **INCREASE FEES**

"The Corps . . .

DS S N SN DSN 15. Increase recreation fees.

DS S N SN DSN 16. Increase existing recreation use fees.

DS S N SN DSN 17. Reduce Golden Age/Access discounts.

DS S N SN DSN 18. Eliminate requirement for free campgrounds.

DS S N SN DSN 19. Charge for all recreation use.

DS S N SN DSN 20. Charge for recreation craft lockages.

DS S N SN DSN 21. Charge for hunting.

DS S N SN DSN 22. Charge for fishing and boating.

DS S N SN DSN 23. Relax 14-day camping imitation.

DS S N SN DSN 24. Increase outgrant revenues (leases, licenses, permits).

DS S N SN DSN 25. Charge fair market value for all recreation outgrants.

DS S N SN DSN 26. Charge fair market value for lakeshore use permits.

DS S N SN DSN 27. Reduce restrictions on private exclusive use.

DS S N SN DSN 28. Allow gambling in accordance with state and local laws.

DS S N SN DSN 29. Allow sale of lottery tickets in accordance with state and local laws.

"The Corps . . .

DS S N SN DSN 30. Increase sales.

DS S N SN DSN 31. Sell merchandise.

DS S N SN DSN 32. Sell land.

DS S N SN DSN 33. Sell artifacts.

DS S N SN DSN 34. Seek legislation for a Federal Recreation Lottery.

DS S N SN DSN 35.

DS S N SN DSN 36.

DS S N SN DSN 37.

DS S N SN DSN 38.

DS S N SN DSN 39.

SOLUTIONS CATEGORY: **INCREASE NON-FEDERAL PUBLIC INVOLVEMENT**

"The Corps . . .

DS S N SN DSN 40. **Provide financial incentives to encourage non-Federal public agencies to provide recreation at Corps projects.**

DS S N SN DSN 41. **Provide developmental incentives.**

DS S N SN DSN 42. Allow Federal cost-sharing on a wider range of facilities.

DS S N SN DSN 43. Provide additional facilities at Federal cost to encourage greater non-Federal operation and maintenance.

DS S N SN DSN 44. Improve existing facilities at Federal cost to encourage greater non-Federal operation and maintenance.

DS S N SN DSN 45. **Provide lease incentives.**

DS S N SN DSN 46. Allow more flexibility in leasing.

DS S N SN DSN 47. Reduce recreation cost-sharing "red tape."

DS S N SN DSN 48. Transfer Corps lands to non-Federal public agencies in exchange for development and/or management of Corps recreation areas.

DS S N SN DSN 49. Encourage leases or cooperative agreements with qualified colleges and universities.

DS S N SN DSN 50.

DS S N SN DSN 51.

DS S N SN DSN 52.

DS S N SN DSN 53.

DS S N SN DSN 54.

SUGGESTIONS CATEGORY: **INCREASE PRIVATE INVOLVEMENT**

"The Corps . . .

DS S N SN DSN 55. Provide financial incentives.

DS S N SN DSN 56. Allow cost-sharing with private sector developers.

DS S N SN DSN 57. Encourage development through low-cost, long term loans.

DS S N SN DSN 58. Subsidize rentals through rebates to the concessionaire.

DS S N SN DSN 59. Provide tax incentives.

DS S N SN DSN 60. Provide developmental incentives.

DS S N SN DSN 61. Transfer Corps lands to developers in exchange for development and/or management of recreation areas.

DS S N SN DSN 62. Fund and/or conduct experimental and research studies, provide test sites for demonstration projects, and conduct market studies.

DS S N SN DSN 63. Acquire land adjacent to recreation area to make the entire site attractive to potential developers.

DS S N SN DSN 64. Provide lease incentives.

DS S N SN DSN 65. Relax lease restrictions on recreation development by the private sector.

DS S N SN DSN 66. Allow private exclusive use in conjunction with private recreation development.

"The Corps . . .

DS S N SN DSN 67.

DS S N SN DSN 68.

DS S N SN DSN 69.

DS S N SN DSN 70.

DS S N SN DSN 71.

IN SUMMARY . . .

72. Do you consider the goals of this study obtainable with the implementation of some combination of the suggestions provided?

___ Yes ___ No

In order to attain the goals of this study through implementation of the suggestions,

"The Corps . . .

DS S N SN DSN 73. Maintain the current mix of recreation management responsibilities between the Corps and other public and private entities at Corps projects.

DS S N SN DSN 74. Increase non-Federal public and/or private recreation responsibility at Corps projects.

DS S N SN DSN 75. Increase Corps recreation management responsibility at its projects through increased fees.

DS S N SN DSN 76.

Additional Comments:

Thank you for your assistance. Please return this evaluation packet before departing.

J

U.S. ARMY CORPS OF ENGINEERS RECREATION STUDY

VOLUME II: APPENDIX J

Economic Impacts of Recreation

PREFACE

This study was authorized by Headquarters, U.S. Army Corps of Engineers and was funded by the Natural Resources Technical Support (NRTS) Program and the U.S. Army Engineer, Institute for Water Resources. The report was prepared by Mr. R. Scott Jackson, Environmental Laboratory (EL), U.S. Army Engineer Waterways Experiment Station (WES), Dr. Daniel J. Stynes and Dr. Dennis Propst, Department of Park and Recreation Resources, Michigan State University, and Dr. L. Eric Siverts, Timber/Land Management Staff, USDA Forest Service.

The work was performed under the direct supervision of Mr. H. Roger Hamilton, Chief, Resource Analysis Group, (RAG) and under the general supervision of Dr. Conrad J. Kirby, Chief, Enviromental Resources Division, and Dr. John Harrison, Chief EL. Mr. J. Lewis Decell was Program Manager, Enviromental Resources Research and Assistance Programs. Ms. M. Kathleen Perales, RAG, and Ms. Tere DeMoss, RAG, provided technical support in the production of the report. Technical reviewers were Dr. A. J. Anderson, EL, and Mr. John Titre, RAG. The report was edited by Mr. Bobby Baylot, EL.

Commander and Director of WES during the preparation of this report was COL Larry B. Fulton, EN. The Technical Director was Dr. Robert W. Whalin.

ECONOMIC IMPACT ANALYSIS AS A TOOL IN RECREATION PROGRAM EVALUATION

BY

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ECONOMIC IMPACT ANALYSIS AS A TOOL IN RECREATION PROGRAM EVALUATION

INTRODUCTION

Increased emphasis has recently been placed on the participation of non-federal sectors in providing recreation opportunities at Corps of Engineers water resource development projects. This initiative requires consideration of values important to public and private recreation program partners at the state and local level. While over 40 percent of recreation areas on Corps projects are managed by non-federal groups, the agency continues to seek increased participation by non-federal partners to accommodate increased demand for recreation resources. Many regions of the United States depend, to varying degrees, on recreational expenditures as an important source of economic activity (Alward 1986, President's Commission on Americans Outdoors). Local leaders have therefore placed an increased importance on public recreation opportunities as an essential ingredient in maintaining economic development through economic activity stimulated by visitor spending. The purpose of this paper is to describe and demonstrate a procedure for determining the economic effects of Corps of Engineers recreation programs for use as a basis for dialogue with public and private non-federal interests.

The Corps of Engineers has traditionally evaluated planned recreation development in terms of direct benefits to the visitor as defined in the National Economic Development Account of the Water Resources Council's Principles and Guidelines (U.S. Water Resources Council 1983). Net benefits included in this type of analysis are defined as the total amount an individual is willing to pay to engage in a recreational activity minus the cost incurred by the visitor to participate in that activity. The unit day, travel cost, and contingent valuation are accepted methods for measuring user benefits. Each method is appropriate for specific applications depending on the level of accuracy needed, availability of data, and planning questions being addressed (Walsh 1986). However, these procedures ignore the impacts to local and regional economies stemming from expenditures made by recreation visitors. These expenditures are important to non-federal interests when evaluating their potential "return" on investment in recreation programs.

ECONOMIC IMPACT ANALYSIS

The economic effects of recreation use associated with Corps projects can be viewed as the income and employment businesses derive as a direct or indirect result of spending by visitors to Corps projects. *Direct* effects include income and employment

resulting from direct spending by visitors on goods and services required to engage in recreation activities, for instance, the retail purchase of a boat. To meet the increased demand for boats resulting from such sales, boating manufacturers will purchase materials and labor; shipping companies will purchase labor, trucks, gasoline and other supplies; and boat dealers will purchase labor and supplies in support of their retail sales activities. The income and employment resulting from these secondary purchases are the *indirect* effects of the retail purchase of boats. The income of employees directly and indirectly supporting the sale of boats increases as a result of each boat sold. In turn, this employee income is used to purchase goods and services, and the resulting increased economic activity from employee income is the *induced* effect of the purchase of a boat. Using this example, the sum of direct, indirect, and induced effects fully describes the economic effect of the purchase of a boat. Economic Input-Output (I-O) models are commonly used to predict what the total level of regional economic activity would be resulting from a change in direct spending.

Input-Output (I-O) analysis can assist decision-making by providing insights as to how various programs affect regional economies. By tracing spending effects throughout an economy, the extent to which various economic sectors are affected can be determined. When trying to integrate a program or project into an economy it is important to determine who will and who will not benefit from it. Using I-O analysis, a decision-maker is able to predict the effects of various changes in policy or agency expenditures on local economies. This gives the decision-maker the ability to evaluate the potential economic effects of policy alternatives and communicate the potential impacts to local interests.

In order to accurately assess the economic effects of recreation policy alternatives it is also necessary to determine how recreation use patterns and resulting visitor spending would change from current conditions in response to the policy alternative. Recreation demand models are commonly used to translate changes in recreation development, resources, and policies into changes in the amount, composition and distribution of recreation use required in the I-O analysis process. Figure 1 illustrates the process and associated tasks for assessing the economic effects of recreation policy alternatives.

MEASURING THE ECONOMIC EFFECTS OF THE LAKE SHELBYVILLE RECREATION PROGRAM

The process of assessing the economic effects of recreation use will be illustrated through an application at Lake Shelbyville, IL. The application will identify the economic effects of the existing recreation program on three regions; the two counties (Shelby and Moultrie) in which Lake Shelbyville is located, the State of Illinois, and the United States. In addition, the economic effects of the hypothetical development of a 200-unit campground will be examined.

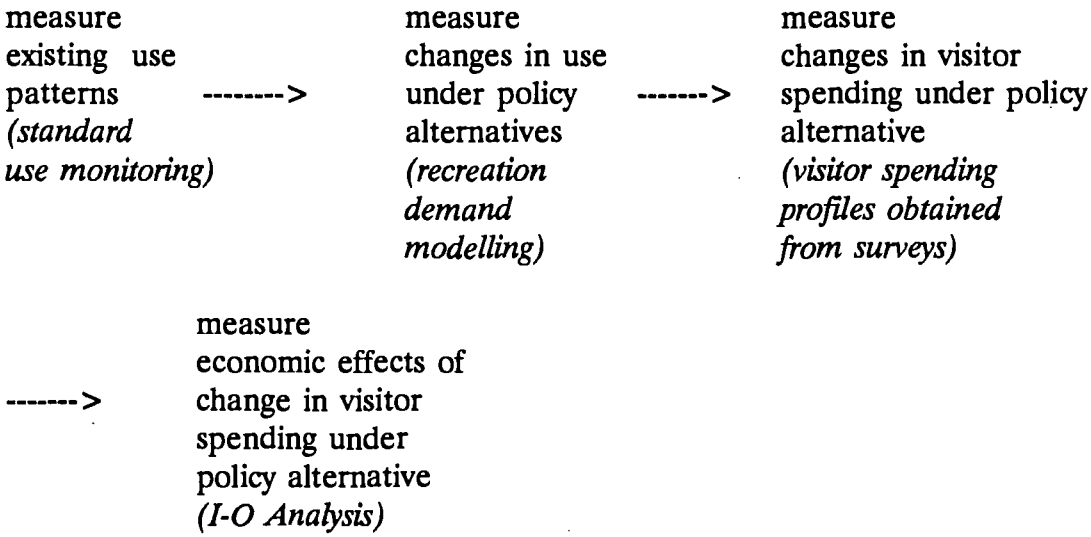

Figure 1. Process for Assessing the Economic Effects of Recreation Policy Alternatives

Lake Shelbyville, an 11,000-acre multipurpose reservoir in central Illinois, was constructed on the Kaskaskia River in 1970 to provide flood control, navigation, water supply, and recreation benefits. There are a total of 16 public recreation areas at Lake Shelbyville operated by the Corps and the Illinois Department of Conservation. These areas provide facilities for camping, boating, swimming, hunting, and a variety of other water-related recreation activities. In addition, three commercial marinas operate on the lake. In June 1989 Eagle Creek Resort was opened to the public. The resort includes a 136-room hotel and associated meeting rooms and conference facilities.

MEASURING VISITOR USE

The first step in assessing recreation economic effects is to measure the amount of recreation use associated with the lake. Recreation use is described in terms of user groups (i.e. day users, campers, and hotel guests) that possess homogeneous spending patterns. Defining use in this way facilitates accurate estimates of total visitor spending.

In 1989 approximately 1.1 million groups engaged in recreation at Lake Shelbyville. The vast majority of visitors (97.1 percent) participated in day use activities, while 1.8 percent camped and 1.1 percent of the visitor groups stayed at the Eagle Creek Resort hotel (estimates of use and visitor spending at the Eagle Creek Resort hotel were based on use statistics for June 1989 through May 1990).

Important to the analysis of economic impacts is the origin of visitors in relation to the regions being studied. This is necessary to distinguish visitors bringing "new" dollars into the region from visitors who live within the region and are retaining money that already exists in the region. The majority of visitors to Lake Shelbyville live in close proximity to the lake. Eighty percent of all visitors lived in the local region of Shelby and Moultrie counties, 19.9 percent lived in Illinois (outside of the local region), and only a small proportion (0.1 percent) of all visitors originated from outside Illinois. Table 1 presents a summary of recreation use at Lake Shelbyville.

Table 1. 1989 Estimated Lake Shelbyville Recreation Use

User Group*	Local Region	Nonlocal Illinois	Outside Illinois	Total
Day Users	870,149	188,427	0	1,058,576
Campers	938	17,222	976	19,136
Eagle Creek Hotel **	606	11,133	631	12,370
Total	871,693	216,782	1,607	1,090,082

* All use statistics are reported in party trips

** Eagle Creek use was reported for June 1989 through May 1990

MEASURING VISITOR SPENDING

A key step in assessing economic impacts is the development of visitor expenditure profiles. An expenditure profile is a series of mean expenditure rates, derived from visitor surveys, for individual goods and services either purchased during a recreation trip or purchased for use on a recreation trip. Visitor spending can be divided into two broad categories. The first category includes goods and services purchased and consumed during a single trip. These expenses are known as trip expenses. The second category includes durable goods, such as boats and camping equipment, that are purchased and used on many trips. Since durable goods are used over a period of time on multiple recreation trips, the total amount spent on such items must be adjusted downward to reflect usage solely at Lake Shelbyville. These adjustment procedures will be discussed later.

To develop both trip and durable goods expenditure profiles, a sample survey was conducted at Lake Shelbyville from July 25 to September 15, 1989. Data collection procedures included a combination of personal, on-site interviews and mailback questionnaires. The interview locations were recreation areas within the Corps' project boundary. These sites were randomly sampled to represent both temporal use patterns (month of the year, day of the week, time of day) and type of use (day vs. overnight, boating vs. nonboating). Trained interviewers conducted personal interviews with visitors as they were completing their visit to Lake Shelbyville. During the interviews, visitors provided recreation activity information, durable good spending estimates, and trip characteristics. To obtain trip spending information, visitors were asked to complete a questionnaire and return it by mail as soon as possible after returning to their permanent residence. A total of 290 groups were contacted in the survey. The response rate for the on-site interview was 92 percent and for the mailback questionnaire 57 percent. This yielded 267 on-site interviews and 165 mailback questionnaires.

A summary of trip expenditure profiles for Lake Shelbyville visitors is presented as Table 2. This table shows the means and standard errors of visitor expenditures for 10 aggregated categories of spending. Finally, Table 2 shows the proportion of spending that occurred within the local region (within 30 miles of Lake Shelbyville) and total trip spending. The average of local regional spending by the 165 groups was $88.80 per trip. The standard error of this mean was $11.77. Thus it is appropriate to conclude, with 95 percent confidence, that the true mean lies between $65.26 and $112.34 per group per trip. The largest proportion of spending occurred within the food and beverage category where local visitors spent an average of $27.38 per group per trip. Figure 2 displays the distribution of total trip spending by major spending category.

Improved accuracy in estimating visitor spending can be achieved by dividing visitors into groups possessing relatively homogeneous spending patterns. Figure 3 illustrates the differences in spending patterns between three groups of Lake Shelbyville visitors surveyed (i.e. day users, campers, hotel visitors). At $248 per trip, hotel visitors spent six times that of the average day user. While some of the differences in spending between hotel visitors and day users can be attributed to the longer length of the hotel visitor's trip, the higher cost of hotel accommodations alone resulted in hotel visitors spending significantly more per trip than campers. Table 3 shows the distribution of visitor spending for the three major user groups at Lake Shelbyville. Mean expenditures for disaggregated spending categories for each user group were used to represent visitor spending required in subsequent estimates of total visitor spending and input-output analysis. Spending by user groups were further divided into groups living inside and outside the local two-county region. As was previously discussed, this allows the distinction to be made between the import of new dollars into the region and the retention of money already in the region.

Table 2. Trip Spending per Party per Trip, Shelbyville (in 1989 dollars)

Description of Spending category	Mean	Standard error	Percent of in region	Percent of total
Totals by region of spending				
Total w/in 30 miles	88.80	11.77		80
Total outside 30 miles	21.56	4.36		20
Grand Total	110.36	12.98		100
Totals by major spending category (within and outside local region)				
Lodging	19.59	4.47		18
Food & beverages	35.27	3.88		32
Auto & RV	22.13	5.81		20
Airline	1.23	1.20		1
Boat	16.61	2.74		15
Fish	2.43	0.64		2
Hunt	0.00	0.00		0
Entertainment	2.70	1.38		2
Misc.	7.80	3.01		7
Other	2.61	0.86		2
Spending by major category within local region				
Lodging	18.21	3.99	21	17
Food & beverages	27.38	3.39	31	25
Auto & RV	17.44	5.79	20	16
Airline	0.00	0.00	0	0
Boat	15.46	2.70	17	14
Fish	2.41	0.64	3	2
Hunt	0.00	0.00	0	0
Entertainment	1.45	0.82	2	1
Misc.	4.30	1.41	5	4
Other	2.15	0.77	2	2
Spending by major category outside local region				
Lodging	1.38	0.84	6	1
Food & beverages	7.88	1.57	37	7
Auto & RV	4.69	0.78	22	4
Airline	1.23	1.20	6	1
Boat	1.15	0.48	5	1
Fish	0.02	0.02	0	0
Hunt	0.00	0.00	0	0
Entertainment	1.25	0.80	6	1
Misc.	3.50	2.69	16	3
Other	0.46	0.40	2	0

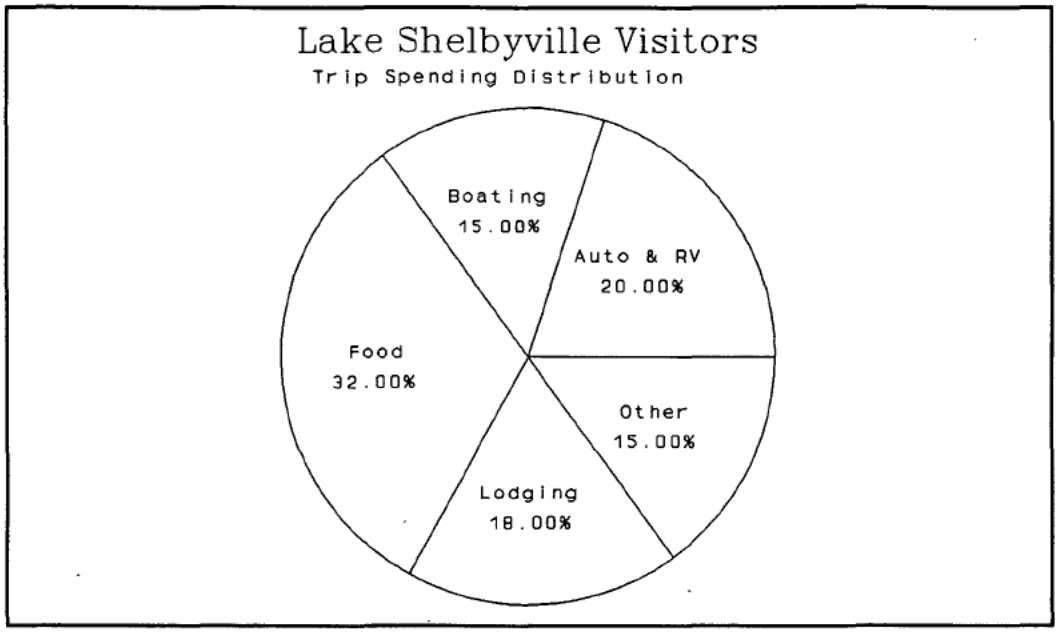

Figure 2. Trip Spending by Category.

Total visitor trip spending was calculated by multiplying visitor use estimates for day users, campers, and hotel visitors from Table 1 by their corresponding expenditure profile presented in Table 3. Table 4 presents these products, or total visitor trip spending for each user group by visitor origin and spending location. As the table shows, a total of over 54 million dollars was spent by Lake Shelbyville visitors on trip expenses. The majority of trip spending, 32.9 million dollars, was made in the local region by Illinois day users (25.5 million within and 7.4 million outside the local region). Imported spending into the local region by visitors living outside the region was an important share of visitor spending, constituting 12.1 million dollars (11.85 million nonlocal Illinois plus .25 million outside Illinois) or 22 percent of all spending. Figure 4 illustrates how local spending is distributed between local and nonlocal visitors. Figure 5 presents the distribution of spending among user groups.

Table 5 presents a summary of durable good spending as reported in the on-site survey. The 267 survey respondents reported purchases of 668 items that cost approximately 1.9 million dollars. Boats and related equipment purchases accounted for most of the spending. Camping equipment including trailers and motorhomes was the second highest spending category. The average visitor reported spending $7,244 for all durable goods used on that trip of which $720 was spent in the last year.

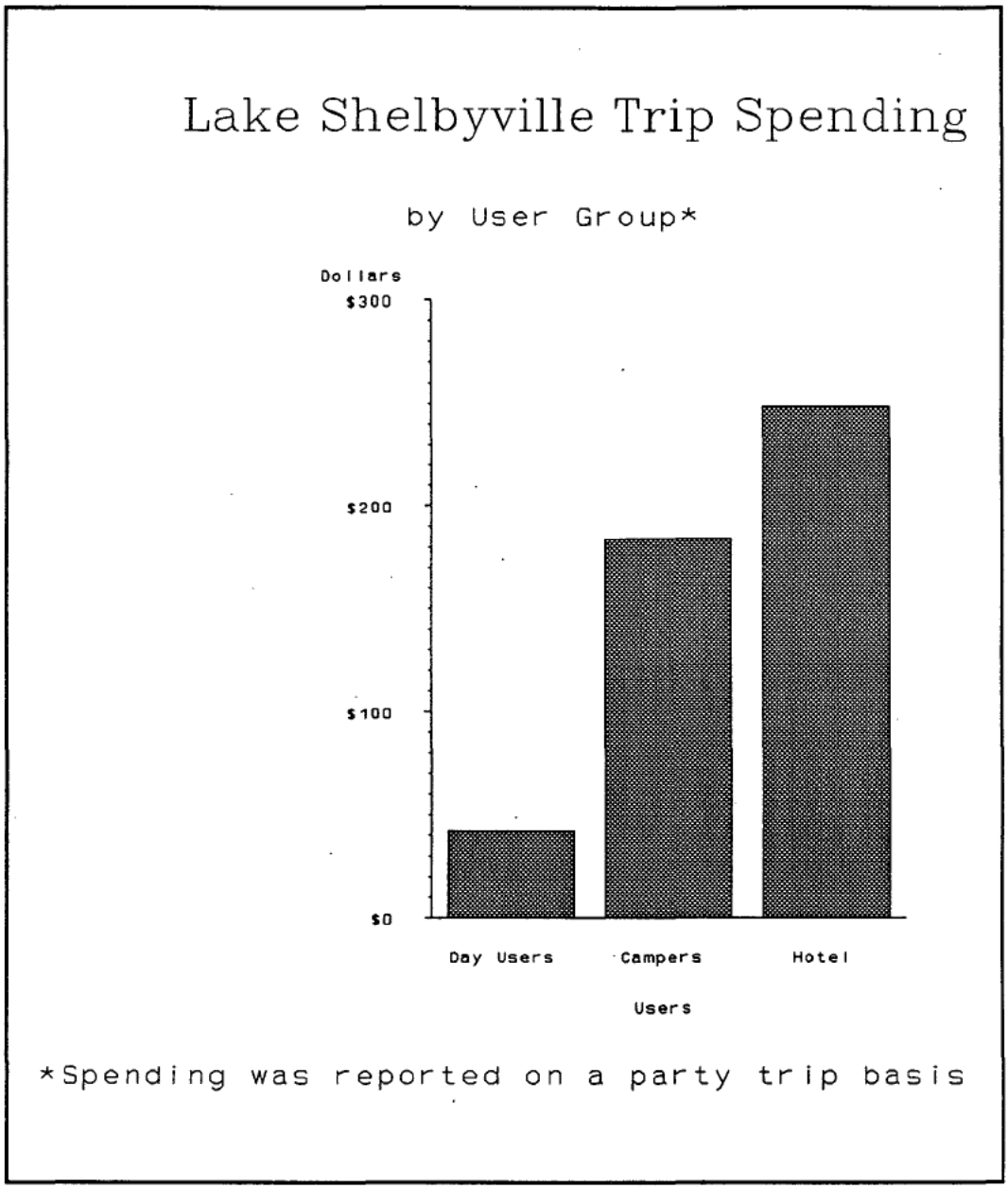

Figure 3. Trip Spending Profile by User Group.

Table 3. Trip Spending per Party per Trip by User Group, Shelbyville (in 1989 dollars)

	Visitors from beyond 30 miles			Local visitors		
	DAY	HOTEL	CAMP	DAY	HOTEL	CAMP
N OF CASES	13	25	21	85	6	12
PCT	8	15	13	52	4	7
----------average spending per party per trip----------						
Totals by region of spending						
Total w/in 30 miles	39.31	188.76	136.10	29.29	267.33	187.33
Total outside 30 miles	64.15	54.12	39.14	3.56	5.00	11.08
Grand Total	103.46	242.88	175.24	32.86	272.33	198.42
Totals by major spending category (within and outside local region)						
Lodging	9.23	75.00	29.38	0.54	28.00	33.83
Food & beverages	32.08	83.36	60.86	9.38	88.00	45.58
Auto & RV	8.15	29.00	35.81	8.27	25.83	97.33
Airline	0.00	7.92	0.00	0.06	0.00	0.00
Boat	11.38	30.80	21.86	8.36	86.83	6.33
Fish	0.00	2.40	4.33	1.32	18.33	1.08
Hunt	0.00	0.00	0.00	0.00	0.00	0.00
Entertainment	8.62	4.00	0.00	2.38	5.33	0.00
Misc.	34.00	9.20	12.90	0.33	20.00	14.25
Other	0.00	1.20	10.10	2.22	0.00	0.00
Spending by major category within local region						
Lodging	9.23	68.64	27.19	0.27	28.00	33.83
Food & beverages	21.69	62.68	39.95	8.41	84.67	38.92
Auto & RV	2.08	16.08	24.76	7.40	24.17	93.92
Airline	0.00	0.00	0.00	0.00	0.00	0.00
Boat	6.15	29.16	21.86	7.86	86.83	5.33
Fish	0.00	2.28	4.33	1.32	18.33	1.08
Hunt	0.00	0.00	0.00	0.00	0.00	0.00
Entertainment	0.00	2.80	0.00	1.61	5.33	0.00
Misc.	0.15	5.92	11.00	0.33	20.00	14.25
Other	0.00	1.20	7.00	2.09	0.00	0.00
Spending by major category outside local region						
Lodging	0.00	6.36	2.19	0.27	0.00	0.00
Food & beverages	10.38	20.68	20.90	0.96	3.33	6.67
Auto & RV	6.08	12.92	11.05	0.87	1.67	3.42
Airline	0.00	7.92	0.00	0.06	0.00	0.00
Boat	5.23	1.64	0.00	0.51	0.00	1.00
Fish	0.00	0.12	0.00	0.00	0.00	0.00
Hunt	0.00	0.00	0.00	0.00	0.00	0.00
Entertainment	8.62	1.20	0.00	0.76	0.00	0.00
Misc.	33.85	3.28	1.90	0.00	0.00	0.00
Other	0.00	0.00	3.10	0.13	0.00	0.00

Table 4. Total 1989 Trip Spending by Lake Shelbyville Visitors (in dollars)

ORIGIN OF VISITOR	LOCATION OF SPENDING			
	Local Region	Nonlocal Illinois	Outside Illinois	Total
Local Region				
Day users	25,486,664	3,097,730	0	28,584,394
Campers	175,715	10,393	0	186,108
Hotel	162,001	3,030	0	165,031
Total	25,824,380	3,111,153	0	28,935,533
Nonlocal Illinois				
Day users	7,407,065	12,087,592	0	19,494,657
Campers	2,343,914	674,069	0	3,017,983
Hotel	2,101,465	602,517	0	2,703,982
Total	11,852,444	13,364,178	0	25,216,622
Outside Illinois				
Day users	0	0	0	0
Campers	132,833	19,100*	19,100*	171,033
Hotel	119,107	17,074*	17,074*	153,255
Total	251,940	36,174	36,174	324,288
GRAND TOTAL	37,928,764	16,511,505	36,174	54,476,443

* For visitors originating outside Illinois one half of nonlocal spending was allocated to nonlocal Illinois and one half to outside Illinois.

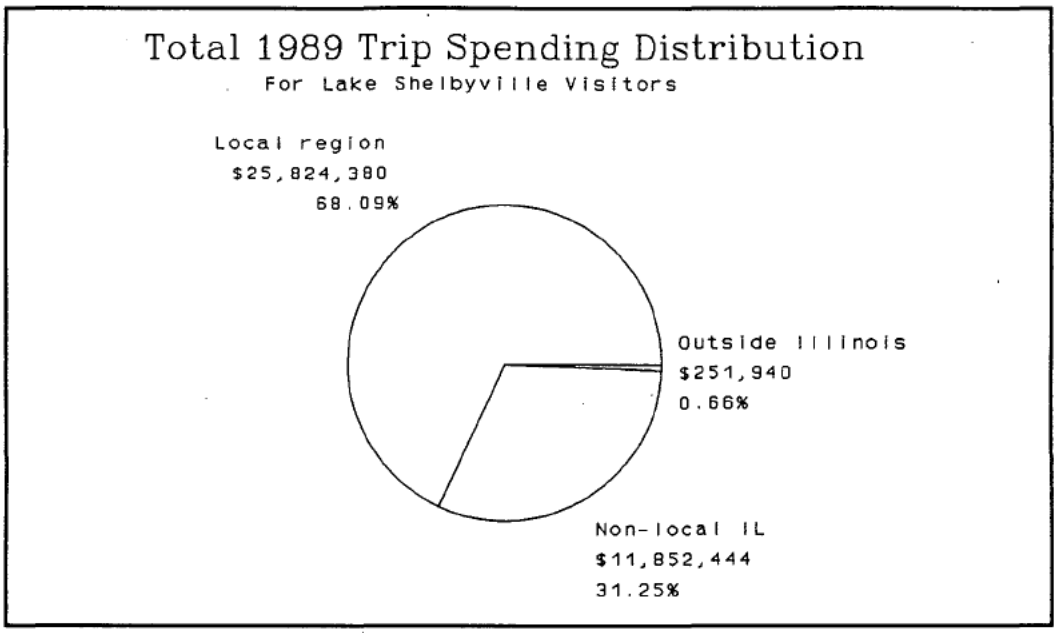

Figure 4. Distribution of Local Spending by Visitor Origin

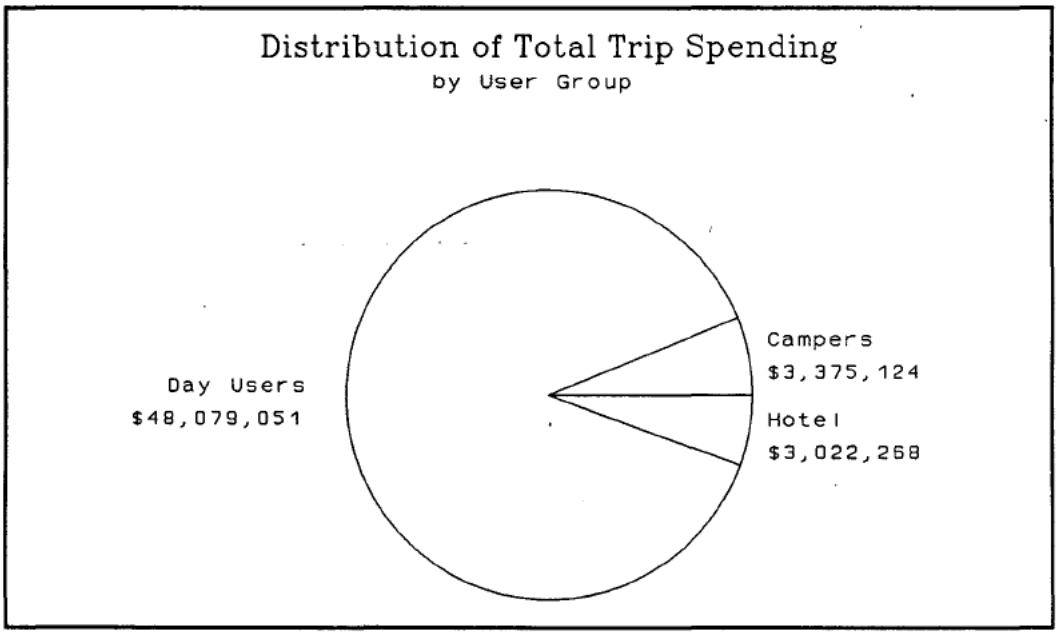

Figure 5. Total Trip Spending by User Group

Table 5. Spending on Durable Goods, Lake Shelbyville in 1989 dollars (n=267)

Durable item	Number reported	Pct of items	Avg cost all items	TOTAL SPENT All items	TOTAL SPENT Purch ases last year
motor boat	25	3.7	12,092	302,292	71,500
non-motor boat	2	0.3	468	935	0
rubber boat	5	0.7	63	313	0
jet ski	1	0.1	3,700	3,700	0
outboard motors	11	1.6	2,155	23,705	950
trailer	10	1.5	688	6,875	0
water skis	34	5.1	365	12,421	170
boat accessories	41	6.1	1,010	41,415	2,650
combination boat/trail/motor	105	15.7	8,610	904,060	111,300
fishing rods	103	15.4	421	43,350	1,075
nets	2	0.3	30	60	0
depth finder	51	7.6	348	17,737	320
vests	68	10.2	173	11,792	190
waders	3	0.4	28	83	0
trolling motor	29	4.3	380	11,020	1,170
guns	1	0.1	200	200	0
tents, bags	27	4.0	507	13,695	0
motorhome	14	2.1	19,146	268,046	0
travel trailer	32	4.8	5,703	182,480	1,000
pickup camper	4	0.6	4,700	18,800	0
camping vehicle accessories	13	1.9	2,133	27,723	60
trail bikes	1	0.1	0	0	0
bikes	19	2.8	263	4,999	300
other rec. equipment	67	10.0	575	38,507	1,563
TOTAL	668	100.0			
			TOTAL	1,934,209	192,248
			AVE. SPENT	7,244	720
			PCT. OF TOTAL	100	9.9

While trip spending was reported by respondents on a per trip basis, durable good spending had to be adjusted to a per trip basis because durable goods are used on multiple trips. Durable good spending was reported by visitors responding to the on-site interview for items brought on that trip. Durable good spending was adjusted to a per trip basis for each respondent by dividing the total cost of durable goods purchased within the last year by the number of trips made within the previous year. Purchases made within the last year were only included to allow direct application of durable spending to annual estimates of use. Average durable good spending for all users was $14.75 per trip in the local region and $110.16 per trip outside the local region. The county in which the item was purchased was used to allocate durable goods spending to the appropriate regions, within Shelby/Moultrie counties (the local region), within the rest of Illinois, or outside Illinois.

Purchases of boating, camping, and other equipment for use at lakes like Lake Shelbyville are substantial. However there is no simple way of attributing these purchases to a single lake because these items may be used at many sites. One rationale for allocating durable good spending to Lake Shelbyville would be to determine the proportion of use that a given durable item receives at Lake Shelbyville versus other sites. This could be quite high for boating and fishing equipment bought by locals, but is probably lower for purchases make by nonlocals. In the absence of credible estimates of total annual use of durable good items purchased, it is necessary to select a percentage that would approximate the proportion of total durable good use that occurs at Lake Shelbyville versus other sites. We recommend attributing 25 percent of all durable good spending to Lake Shelbyville.

Using the 25 percent allocation resulted in average durable good spending for all users of $3.68 per trip in the local region and $27.54 per trip outside the local region. The application of these per trip durable good spending estimates to total 1989 use at Lake Shelbyville results in an estimate of 4.02 million dollars in durable good spending in the local region, 27 million dollars in Illinois, outside the local region and 3 million dollars outside Illinois.

Figure 6 displays the distribution of durable good and trip spending by where the spending occurred. Most trip spending occurred in the local region, while the majority of durable good spending occurred outside the local region.

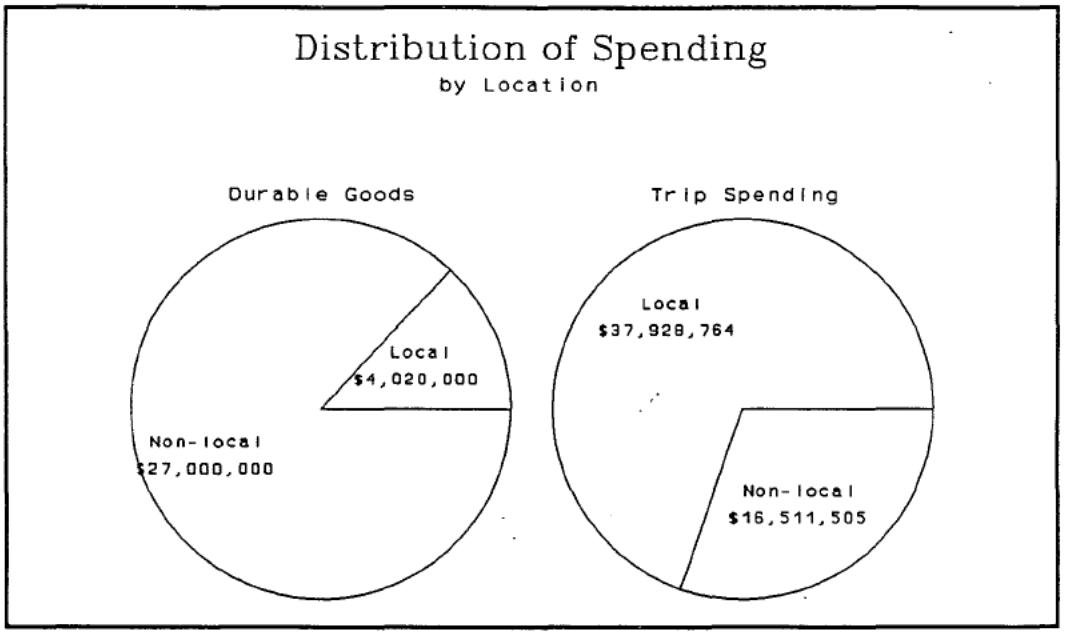

Figure 6. Distribution of Trip and Durable Good Spending by Location of Spending

ASSESSING ECONOMIC EFFECTS

The translation of visitor spending into economic effects in terms of income and employment was accomplished through the use of an Input-Output (I-O) model. The model is an accounting system showing economic transactions between local businesses, households, and governments, as well as transactions between public and private entities located elsewhere. Although an I-O model provides only a static view of economic conditions, it is an effective device for characterizing and analyzing complex local, regional, and national economies. I-O models are constructed for specific geographic regions in order to capture the specific economic sectors and linkages that exist in the region.

IMPLAN, an I-O model developed by the U.S.D.A. Forest Service, was selected for use in this application. IMPLAN was selected for two main reasons. First it provides more detailed information than most other I-O models for recreation-related economic sectors. An economic sector is a group of industries that produce similar goods and services (e.g. retail trade sector). Second, it is a national model that facilitates standardized application throughout the U.S. and allows both local and national effects to be measured.

Three distinct input-output models were developed using IMPLAN, each corresponding to a distinct region of interest. The *LOCAL* model consisted of Shelby and Moultrie counties. These two counties roughly coincide with a 30-mile circle

around Lake Shelbyville. This model includes 124 of the 528 sectors that exist in IMPLAN. The *STATE* model includes all of Illinois. The Illinois model includes 494 sectors. The *NATIONAL* model includes the entire continental United States and includes all 528 economic sectors.

Each model describes the structure of the relevant regional economy. Moving from the *LOCAL* to the *STATE* and then to the *NATIONAL* model, more industrial sectors are represented and there are fewer leakages of dollars outside of the region for imports.

A final demand vector, which consists of visitor purchases to the 528 IMPLAN sectors, is required as input into the model. In the case of recreation applications this vector is developed from estimates of the amount of spending by visitors to the specified area as described in the previously discussed visitor spending profiles. For trip spending, six profiles were used -- day users, campers, and hotel visitors living within the local region and living outside the local region. For durable good spending, two profiles were used, visitors living within the local region and visitors outside the local region. The final demand vectors also account for where the spending occurred, i.e. within or outside the local region.

Spending of visitors within 36 trip expense categories and 24 types of durable goods were allocated into the 528 IMPLAN sectors to produce sector-specific final demand vectors. As part of the allocation process, retail, wholesale, and transportation margins were estimated and allocated to the appropriate IMPLAN sector. A margin is the difference between the cost and selling price of a good or service.

For any final demand vector IMPLAN produces estimates of the effects on employment and income, along with other measures of economic activity. The estimates reported include direct, indirect, and induced effects. IMPLAN'S estimates of employment and income have specific interpretations that are important. Employment is reported in terms of numbers of jobs which include a mix of both permanent full time, part time, and temporary employees. Income estimates reported from the I-O model are referred to as factor income by place of production. Two distinctions are important here. First, factor income means payments to factors of production (i.e. labor and capital). The case of labor, wages paid in the production process represent a part of total personal income, the remainder coming from several sources including investment dividends and government transfer payments. Second, income is reported by place of production not by place of residence. This means that for areas where large numbers of employees live outside the study area and commute to work, the model will overstate the effects. IMPLAN uses 1982 economic data to estimate economic effects; therefore all income estimates are reported in 1982 dollars. The final demand vectors were converted to 1982 dollars to provide consistency with IMPLAN.

For the local and Illinois regional models, two distinct types of analyses were conducted. *IMPACT* analysis is the term used to evaluate the effects of "outside"

dollars being imported into the region from visitors who live outside the region. The term *SIGNIFICANCE* is used to indicate the effects of spending within the region from both resident and nonresident visitors.

IMPACT analysis is the most common use of input-output models. For the *LOCAL* model (Shelby and Moultrie Counties) the *IMPACTS* of Lake Shelbyville include only the spending within the two counties by visitors from outside the two counties. This spending represents the inflow of "new" dollars to this local economy. The rationale for this approach is that if Lake Shelbyville were not available for recreation, these dollars from nonresidents would not be flowing into the region; whereas, a high proportion of spending by local residents would be transferred to other sectors of the local economy.

The *SIGNIFICANCE* analysis for the *LOCAL* model includes all spending within the region associated with all visits to Lake Shelbyville. As a large percentage of the use of Lake Shelbyville is from nearby residents, much of this spending is not "new" dollars to the region. Local resident spending locally can be important to identify which local economic sectors benefit from visits to the lake. Also, to the extent that local residents would otherwise go outside the region for recreation if the lake were not available; local spending by locals represents a potential leakage of spending that the lake captures.

Combining the *IMPACT* and *SIGNIFICANCE* analyses with the three regions, five scenarios are generated as follows:

LOCAL IMPACT: The effects on Shelby and Moultrie counties of the spending of visitors from outside the region. In this analysis local visitors are not included, nor is any spending associated with the visit that occurs outside of the region.

LOCAL SIGNIFICANCE: The effects on Shelby and Moultrie counties of all spending within the region by Lake Shelbyville visitors. Both local and nonlocal visitors are included.

STATE IMPACT: The effects on Illinois of the spending of out-of-state visitors to Lake Shelbyville. This analysis only includes visitors from outside Illinois and includes only their spending within the state.

STATE SIGNIFICANCE: The effects of any spending within the state of Illinois by all 1989 visitors to Lake Shelbyville.

NATIONAL SIGNIFICANCE: The effects on the United States economy of all spending associated with trips to Lake Shelbyville in 1989.

These scenarios produce differing results due to both differences in final demand (total visitor spending) and in the economic structures at local, state, and national levels.

The results of the five scenarios are summarized in Table 6. This table provides the total economic effects, for all use of Lake Shelbyville in 1989, under each of the five scenarios. The effects on employment and income are reported for the three user groups and for all users combined. The effects of trip spending are reported separately from that for durable goods.

When examining employment effects associated with trip spending under the *SIGNIFICANCE* scenarios, notice that the effects get larger as the size of the region increases. This is because more visitor spending is being included in the final demand vector, and less spending leaks out of the region in successive rounds of spending (indirect and induced effects). Spending on trips to Lake Shelbyville in 1989 generated 860 jobs within the two-county area, 1199 within Illinois and 1956 jobs nationally.

The employment effects of "new" dollars into the region (*IMPACT* scenarios) resulted in 427 jobs in the local region from trips by visitors originating from outside the region and 8 jobs in the state of Illinois result from trips by visitors from outside the state. This finding illustrates that the lake primarily serves a state market with the primary regional effect being a flow of dollars (and jobs) to the Shelby/Moultrie counties from the rest of Illinois.

Similar results were obtained for the effects on income. Focusing on the local region, outside visitors to Lake Shelbyville generated 5.5 million dollars in income locally. Figure 7 shows the proportion of total income and employment in the local region attributable to trip spending by Lake Shelbyville visitors. Lake Shelbyville trip spending accounted for 9.5 percent of total local employment and 5.2 percent of total local income. Imported spending into the local region by Lake Shelbyville visitors living outside the region was an important component of total spending, accounting for 4.7 percent of local employment and 2.2 percent of local income.

Table 6 shows the impacts of durable goods purchases, bought within the last year and used at Lake Shelbyville under the previously described 25 percent durable good spending allocation. The employment effects of durable goods purchases under the *SIGNIFICANCE* scenario resulted in 38 jobs in the local region, 477 in Illinois and 824 nationally. Most major durable items like boats and recreational vehicles are manufactured outside the local region and in many cases outside Illinois. Consequently there is a significant increase in employment effects in the Illinois and National regions. Under the *IMPACT* scenario, 9 jobs are produced in the Shelby-Moultrie Counties and only 6 jobs in Illinois resulting from durable goods purchased in Illinois by out-of-state visitors to Shelbyville.

Table 6. Shelbyville Impact Analysis -- TOTAL IMPACTS OF PRESENT USE -- Trip Spending and Durable Goods Purchases

	Local Significance	Local Impact	Illinois Significance	Illinois Impact	National Significance
TRIP SPENDING					
Employment (Number of Jobs)					
Campers	65	62	77	4	124
Day users	714	286	1037	0	1673
Hotel use	81	78	84	4	160
All	860	427	1199	8	1956
Total Income (Millions of 1982 Dollars)					
Campers	0.96	0.90	1.76	0.09	3.77
Day users	10.81	3.64	23.61	0.00	50.92
Hotel use	1.07	0.99	1.76	0.09	4.47
All	12.85	5.53	27.12	0.18	59.16
DURABLE GOODS PURCHASES					
Employment* (Number of Jobs)					
Campers	1	0	77	4	164
Day users	34	6	365	0	588
Hotel use	3	3	35	2	72
All	38	9	477	6	824
Total Income* (Millions of 1982 Dollars)					
Campers	0.01	0.01	1.63	0.08	5.03
Day users	0.56	0.10	8.55	0.00	18.66
Hotel use	0.04	0.04	0.81	0.05	2.26
All	0.61	0.15	10.99	0.13	25.95
NUMBER OF TRIPS (000's)					
Campers	19.14	18.20	19.14	0.98	19.14
Day users	1058.58	188.43	1058.58	0.00	1058.58
Hotel use	12.37	11.76	12.37	0.63	12.37
All	1090.08	218.39	1090.08	1.61	1090.08

* This is a 25 percent allocation of the total effects of durable good spending based on the assumption that 25 percent of the use of durable goods purchased occurred at Lake Shelbyville.

EVALUATION OF A MANAGEMENT ALTERNATIVE

The preceding discussion presented the economic effects of recreation use under existing conditions in 1989. However, input-output analysis is an effective tool to evaluate the economic implications of management and policy decisions that affect recreation behavior. To illustrate this type of application we will assume that a 200-unit campground is being considered for construction to meet a demonstrated demand for camping facilities. Assuming such an expansion would generate occupancy rates like those at present campgrounds, it is estimated that the proposed facility would generate an additional 3,334 trips by camping groups to Lake Shelbyville. If it is further assumed that these trips would be distributed from different origins like present campgrounds and these campers would spend at rates similar to the two camping groups surveyed (local and non-local campers), a new final demand vector can be created to estimate the economic effects of the five scenarios.

For instance from Table 1 we see that about 95 percent of all campers at Lake Shelbyville came from outside the local region (17,222 non-local Illinois plus 976 outside Illinois campers divided by 19,136 total campers). When the 95 percent is applied to the estimated 3,334 camping trips in the new campground this results in about 3170 camping trips. From Table 3 we find that nonlocal campers spent $136.10 per trip in the local region. When the $136.10 per trip spending rate is applied to the 3170 trips this results in approximately 430,000 dollars in trip spending under the local *IMPACT* scenario in Table 7. The economic effects of the 200-unit campground are shown in Table 7.

Under the *SIGNIFICANCE* scenario, 11 new local jobs are created, 13 in Illinois, and 22 nationally from trip spending. Because campers come from outside the local region, the local *IMPACT* is also 11 jobs. Less than one job is created as a result of out-of-state camper spending.

Applying the 25% share of durable good spending, the new campground would have only a small local employment effect, but about 13 jobs would be created in Illinois and 28 nationally under the *SIGNIFICANCE* scenario.

This application demonstrates that it is possible to link economic effects to a specific management action (i.e. development of a 200-unit campground). This capability will allow managers to work with non-federal interests to identify partnership opportunities based on the economic effects to the local area through increased business activity. Nonlocal interests will be able to make investments in public recreation in a more business like way by being able to compute the potential economic return on specific investment alternatives.

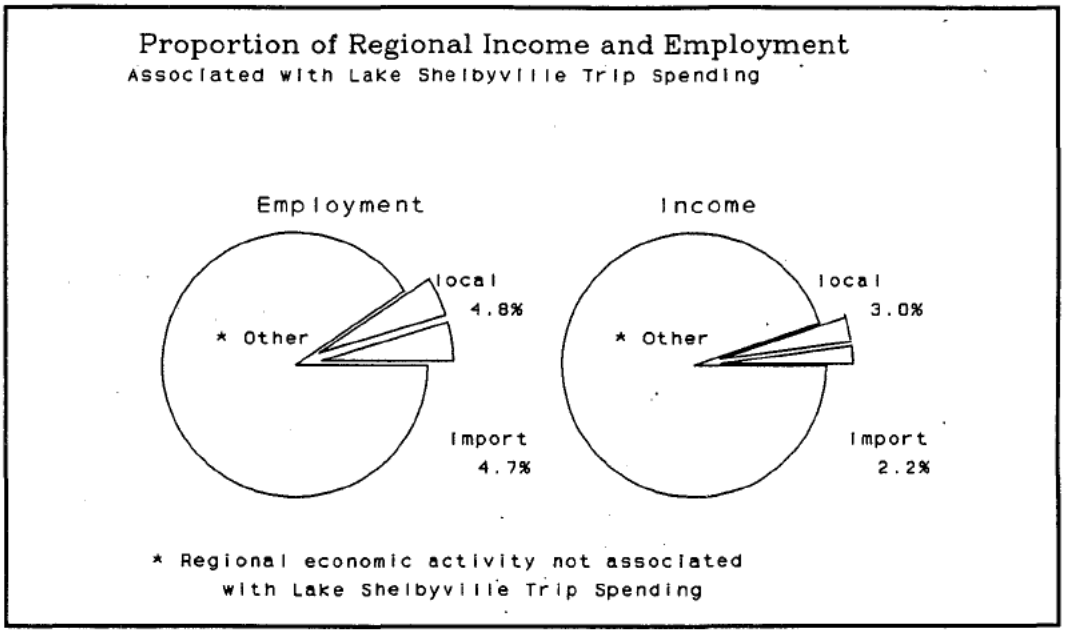

Figure 7. Proportion of Regional Income and Employment from Trip Spending.

Table 7. Economic Effects of a 200-Unit Campground

	Local Significance	Local Impact	Illinois Significance	Illinois Impact	National Significance
Trip Spending ($MM, 1982)	0.46	0.43	0.56	0.03	0.56
Income ($MM, 1982)	0.17	0.16	0.31	0.02	0.66
Employment (Jobs)	11.37	10.87	13.40	0.68	21.57
Durable Goods Spending	0.02	0.01	2.56	0.13	2.56
Income ($MM, 1982)	0.00	0.00	1.14	0.06	3.50
Employment (Jobs)	0.30	0.19	53.68	2.69	114.46
NUMBER OF TRIPS (000's)					
Campers	3.33	3.17	3.33	0.17	3.33

NATIONAL ECONOMIC EFFECTS OF THE CORPS' RECREATION PROGRAM

The economic effects of the national Corps recreation program can be inferred by applying spending patterns for Lake Shelbyville campers and day users to nationwide estimates of the number of campers and day users that use Corps projects. In 1988 over 2 billion visitor hours of recreation use was reported at over 470 Corps projects. This translates into over 95 million user groups using Corps projects for recreation. Table 8 presents the national effects of 1988 recreation use at Corps projects. Assuming all Corps campers and day users have the same spending patterns as Lake Shelbyville visitors, over 11 billion dollars was spent on nondurable goods and services associated with recreation at Corps projects. Trip spending generated over 8.1 billion dollars of income and over 265,000 jobs.

Table 8. National Effects of Corps Recreation Trip Spending

User Group	Trips (000) (1988 NRMS)*	Trip Spending ($MM 1982)	Income ($MM 1982)	Employment (Jobs)
Day Users	71,444	4,128	3,436	112,881
Campers	23,558	7,392	4,678	152,400
Total	95,002	11,520	8,114	265,281

* Natural Resource Management System

Travel and tourism industries are a major economic force in the United States touching many sectors of the economy. In 1988, travel and tourism related industries accounted for 302 billion dollars in receipts resulting in 5.42 million jobs (1989 U.S. Travel Data Center). The Corps recreation program accounts for a significant portion of the economic activity associated with travel and tourism in the United States. Trip spending by visitors to Corps projects accounted for approximately 3.6 percent of all tourism spending and resulted in about 4.8 percent of all tourism employment.

These results do not mean that if recreation use were to no longer exist at Corps projects the associated jobs and income would be lost. A very small portion of trip spending is "new" money to the United States (only spending from foreign visitors). Most is money that would be spent in the United States regardless of whether recreation opportunities existed at Corps projects. Therefore, changes in economic conditions would be in the form of shifts in jobs and income between economic sectors

or geographic locations as a direct result of shifts in recreation use patterns which stem from the change in the supply of recreation resources.

CONCLUSIONS

I-O analysis is an important tool to evaluate the economic implications of management and policy decisions. As non-federal groups become more actively involved in the Corps recreation program, the Corps needs to place greater importance on and improve the capability to identify and evaluate the regional effects of policy decisions and resource allocations. The Lake Shelbyville application demonstrates a credible approach for measuring the economic effects of the current recreation program and predicting the potential effects of a hypothetical recreation development.

The precise application of I-O analysis to recreation management issues at Corps projects requires that recreation use be continuously and accurately monitored at all Corps projects. In addition, nationally representative visitor spending profiles are required for all major Corps project user groups. These profiles will reduce the need to perform visitor spending surveys for each future I-O application thus improving the efficiency and reducing the cost of applying the I-O process.

The analysis demonstrated that visitor spending associated with recreation at Lake Shelbyville, was an important component in the total local economy. Visitor spending accounted for over nine percent of local employment and over five percent of local income. The ability to measure the economic effects of recreation use at Corps projects is an important tool in increasing non-federal investment in the Corps recreation program. Regional economic development, however, should be viewed as a positive byproduct of Corps project constructed and managed to support national economic development through the provision of public benefits.

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At the direction of the Assistant Secretary of the Army (Civil Works), the U.S. Army Corps of Engineers conducted a review of its outdoor recreation program. The objective was to develop a plan for maintaining or enhancing recreation while reducing Federal expenditures. Volume I: Main Report summarizes the study purpose and scope, provides an historical review of the Corps involvement in outdoor recreation providers, describes the study process, reports on the evaluation of options considered for addressing the study objective, and describes a recommended plan. Volume II: Appendices contains supporting material developed during the study process.

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REPORT
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WATER RESOURCES DEVELOPMENT ACT OF 1990

JUNE 14, (legislative day, JUNE 11), 1990.—Ordered to be printed

Mr. BURDICK, from the Committee on Environment and Public Works, submitted the following

REPORT

[To accompany S. 2740]

The Committee on Environment and Public Works, reports an original bill (S. 2740) to provide for the conservation and development of water and related resources, to authorize the United States Army Corps of Engineers civil works program to construct various projects for improvements to the Nation's infrastructure, and for other purposes and recommends that the bill do pass.

OUTLINE OF THE BILL

Title I authorizes for construction 22 Army Corps of Engineers water resources development projects in accordance with the cost sharing and related reforms of the 1986 Water Resources Development Act (P.L. 99-662).

Title II contains provisions relating to specific existing water project authorities of the Corps of Engineers.

Title III contains general and technical provisions relating to the management and execution of the civil works program by the Corps of Engineers.

Title IV authorizes research and grant programs for the control of zebra mussels.

WATER RESOURCES DEVELOPMENT ACT OF 1990

CONTENTS

39-010

TITLE I: PROJECT AUTHORIZATIONS

TITLE II: PROJECT MODIFICATIONS

TITLE III: GENERAL PROVISIONS

General Statement

In reporting the Water Resources Development Act of 1990, the Committee has chosen to adhere to the policies established in 1986 and continued in 1988 regarding the authorization of projects within the civil works program of the Army Corps of Engineers. This bill includes the authorization of 22 projects for construction.

The Water Resources Development Act of 1986 (P.L. 99-662), signed into law on November 17, 1986, marked the end of a 16-year deadlock between the Congress and the Executive Branch regarding authorization of the civil works program. In addition to authorizing numerous projects, this Act resolved longstanding disputes relating to cost-sharing, user fees, and environmental requirements.

Disputes over these and other matters had prevented enactment of major civil works legislation since 1970. Between 1947 and 1970, civil works authorization bills were enacted every two to three years. This regular schedule had many advantages. It helped to avoid long delays between the planning and the execution of projects, assured that engineering work and economic analysis were applicable to current conditions, minimized the backlog of projects that have been considered but not authorized by Congress, and allowed the Public Works Committees of the Congress to review proposed projects on regular schedule.

Nevertheless, this system broke down in the 1970's. There was no legislation enacted between 1970 and 1986 to authorize civil works projects for construction. The Water Resources Development Act of 1976 (P.L. 94-587) made some changes to Corps policies, but authorized no projects.

In the 97th and 98th Congress, this Committee reported legislation to authorize water resources projects and provide for cost-sharing for these projects. The House Committee on Public Works and Transportation reported bills as well. But no bill became law. In the 99th Congress, a House-Senate Conference Committee produced a Conference Report (H. Rept. 99-1013) which was passed by the House and the Senate and signed into law on November 17, 1986

(P.L. 99-662). The Water Resources Development Act of 1986 was the largest and most comprehensive authorization of the Corps civil works program since the Senate Public Works Committee was created in 1947.

Some of the major reforms included in the Water Resources Development Act of 1986 are listed below:

—Cost-sharing formulas were established for deep draft harbor dredging (section 101), flood control (section 103), shoreline protection (section 103), streambank erosion control (section 603), and other projects. Local Cooperation Agreements were required for all such projects. Projects for enhancement of fish and wildlife resources were allowed to be carried out at 100 percent Federal expense (sections 906 and 1135.)

—The Harbor Maintenance Trust Fund, funded by a new Harbor Maintenenace Tax, was established to pay forty percent of the Federal cost of maintaining authorized deep draft navigation channels (sections 210, 1402 and 1403).

—Projects authorized prior to 1986 that were incomplete would be deauthorized without Congressional action if no funds were expended on the project for a period of 10 years; projects authorized in 1986 or thereafter would be deauthorized if not funded for a period of 5 years (section 1001).

These policy changes apply to all projects contained in the Water Resources Development Act of 1988 (P.L. 100-676), signed into law on November 17, 1988, and all projects contained in the Water Resources Development Act of 1990 as reported by this Committee.

A substantial number of reforms to the civil works program achieved in 1986 consisted of changes to the process followed by the Congress in authorizing civil works projects. These reforms have helped in the resumption of a regular authorization schedule for the civil works program.

The Committee wishes to make the following statement of policy regarding the authorization of projects under the Civil Works Program of the Army Corps of Engineers.

Statement of Committee Policy

Since 1986 it has been the policy of the Committee to authorize for construction projects that conform with cost-sharing and other policies established in the Water Resources Development Act of 1986. In addition, it has been the policy of the Committee to require all projects to have undergone full engineering, environmental and economic review by the Chief of Engineers.

A Corps of Engineers water resources project is initiated when the Senate Committee on Environment and Public Works or the House Committee on Public Works and Transportation approves a Committee Resolution requesting that the study of a project be undertaken. Once such a resolution is approved by either Committee, the Corps is authorized to proceed with a reconnaissance study of the proposed project at 100 percent Federal cost.

When this is complete, the Corps approaches potential local sponsors of a project, such as a port authority, county, city or State, regarding the undertaking of a feasibility study for the project. In accordance with section 105 of the Water Resources Development Act

of 1986, feasibility studies are funded at 50 percent Federal cost and 50 percent local cost. If a local sponsor agrees to provide this cost share, the Corps proceeds with the study.

When the feasibility study is completed, the Corps' District Engineer reviews the results and forwards a recommendation on the project to the appropriate Corps Division Headquarters for review. The District Engineer's Report describes the proposed project in detail, and includes various engineering options, estimates of the costs and benefits of each option, and a preliminary estimate of the environmental impact of each option.

If the District Engineer's Report is approved by the Division Commander, it is forwarded to the Board of Engineers for Rivers and Harbors. If approved by the Board, it is forwarded to the Chief of Engineers for final planning review. If approved by the Chief of Engineers the report is forwarded to the Assistant Secretary of the Army for Civil Works in the form of a Chief of Engineers Report. Projects may receive a favorable Chief of Engineers Report only if they have a positive benefit-to-cost ratio and a favorable statement of environmental impact.

The Committee feels that projects that have reached this stage have undergone sufficient technical, environmental, and economic review, and that congressional review for authorization is appropriate. The Committee considers it premature to authorize projects that have not completed this process.

Some of the projects sent to the Assistant Secretary of the Army by the Chief of Engineers are forwarded to the Congress with a recommendation that construction be authorized. Such a recommendation only occurs after the project has been reviewed by the Office of Management and Budget. While the Committee recognizes the prerogative of the Administration to make recommendations regarding the authorization of Corps projects, the Committee does not feel bound by these recommendations. The decision to authorize a project rests with the two Houses of Congress.

In the opinion of the Committee, adherence to this policy allows for long term stability in the authorization of Corps projects. The Committee wishes to make clear that policy issues regarding the type of project that may be authorized are independent of matters regarding technical review. The Committee reserves the right to recommend projects for authorization that do not fall within the traditional role of the Corps or which are for purposes not recognized as valid by the Executive Branch.

The Committee believes that the review of projects by the Chief of Engineers is technical in nature and does not involve political or policy judgement. The Committee does not have the resources to perform the necessary economic, engineering, and environmental review of each project, and has therefore chosen to use the findings of the Corps for the evaluation of projects. At present, it is the view of the Committee that the Corps is performing these functions well. It is emphasized that the practice of using Chief of Engineers' reports to measure the validity of projects does not represent a preclearance of projects with the Administration. If the nonpolitical nature of the Chief of Engineers' review process were to change in the future, the Committee would likewise reserve the right to re-

evaluate the practice of using Chief of Engineers' reports for the purpose of project authorization.

The Committee has always been opposed to the contingent authorization of water resources projects. Such an authorization is usually conditioned on an expected favorable report on a project by the Chief of Engineers followed by approval of the Secretary of the Army. Exceptions to this previously unwritten Committee policy will not be supported.

New Cost Sharing and User Fees

The Committee has reviewed carefully the Administration's proposed new cost sharing and user fee proposals. The reported legislation includes the Administration's proposal to cost share planning assistance to States. Such a policy is consistent with the current study and technical assistance cost sharing requirements of the Corps of Engineers.

The Administration's proposal to recover half the cost of providing flood plain management services, however, has been modified. The Corps has been performing this service to public and private entities across the country for a generation. Indeed, the Corps can be said to be the sole repository of such information for the Nation.

The Administration proposed 50 percent cost sharing for all recipients of flood plain management services. The Committee does not believe that there is a programmatic reason to require public entities to pay for this information. However, private interests which seek such information clearly do so with the expectation of a direct benefit and should pay the full cost of being provided with such information. The Committee also believes that the resources of the Corps of Engineers should not be expected to cover flood plain management services to other Federal agencies. Therefore this legislation provides for 100 percent cost sharing for these services on the part of private entities and Federal agencies, and the continuation of no-cost service to non-Federal public entities.

The Administration's proposal to authorize the Corps to utilize the Harbor Maintenance Trust Fund for up to 100 percent of the operation and maintenance costs of commercial channels and harbors has been included in the Committee approved bill with a modification. The Committee believes that it is very important to define what may be financed from the Harbor Maintenance Trust Fund. Therefore, a definition of eligible operation and maintenance costs has been made part of this legislation.

It is noted that the Administration's proposal to increase the level of the fees which flow into the Harbor Maintenance Trust Fund does not fall within the jurisdiction of the Environment and Public Works Committee.

With respect to the Administration's proposal to authorize the Corps of Engineers to recover the costs of certain recreational services, the Committee was not presented with adequate information on which to evaluate this proposal. Only if the Congress knows specifically what type of cost recovery mechanisms would be implemented, where they would be implemented, and what specific services would be assessed, can a cost recovery proposal be evaluated.

Corps Management

A number of provisions in the Committee approved legislation address specific concerns which have arisen over particular management practices of the Secretary and the Corps. The Committee believes that the process of project evaluation which is constantly being reformulated must be an open process, a process which permits exchange between the Corps and local interests. Partnership requires that this be the case.

The Committee believes that the Engineer Regulation concerning "single entity" or "single owner" as presently implemented is inappropriate. Public facilities have no single owner. If privately owned facilities in a project area are believed by the Secretary to benefit excessively, then the project sponsor who is adversely affected by this determination is entitled to have this condition established as fact.

The Committee also provided that the Secretary shall reformulate procedures to determine the ability of a non-Federal interest to pay the required cash contribution of flood control projects pursuant to section 103(m) of the 1986 Water Resources Development Act. The Committee is well aware of the complexities of this process, and of the inherent difficulties in establishing these procedures. Nevertheless, the Committee is convinced by the testimony received that the existing procedures which determine ability to pay are inadequate. The Committee urges the Secretary to consider consulting with the academic community in developing new ability to pay standards.

Port Stewardship

The Committee is concerned with the growing disaffection within the port community caused by certain management policies of the Secretary and the Corps of Engineers. The Committee believes that the Corps has no more important mission than the oversight of commercial navigation harbors and channels. The fabric of the Nation's transportation system and the growing importance of intermodal transport require that our harbors be efficiently improved and adequately maintained. Port authorities throughout the country are the largest and most permanent set of "partners" with which the Corps of Engineers interacts. The importance of this alliance cannot be overstated.

It is the view of the Committee that relationships between the port community and both the Secretary and the Corps are deteriorating. These relationships must be reevaluated and redirected.

First and foremost, a new attitude of cooperation must be fostered. The present situation in Oakland, California is a case in point. A much-needed harbor deepening has been authorized for the port of Oakland, but implementation has been delayed due to disputes over the disposal of dredged material. Resolution of this issue will not be easy. The Committee believes that the Chief of Engineers and the Secretary must take a more active role in providing solutions to this problem. The Chief and the Secretary should make every possible effort to propose innovative solutions to the problem of dredged material disposal.

The Committee further believes that Corps district offices should reexamine their relationship with the port community in each region of the country and develop specific action plans to meet the needs of this vital segment of our transportation system. The Chief of Engineers and the Secretary need to focus more closely on this part of the civil works program.

Three other port-related issues which have been raised in recent testimony should also be reviewed by the Secretary and the Chief of Engineers. These issues are other symptoms of the more fundamental disaffection which has been discussed above.

Since 1899, section 10 permits for the relocation of utility crossings of navigable waters have been required by the Corps. The 1986 Water Resources Development Act required that the cost of relocating utility transmission lines less than 45 feet in depth remain the financial responsibility of the utility owner. However, the Corps has not consistently enforced these permits, at times leaving ports with no legal basis to accomplish the relocation work.

While the legal issues surrounding the Corps' use of its regulatory authority in these cases is complex, the Committee believes that the Secretary and the Chief of Engineers should establish a working group to establish clear guidelines with regard to permit enforcement practices. Furthermore, the Chief of Engineers should establish, in his office, a point of contact for the entire port community to ensure the uniformity of Corps policy and to provide guidance and advice to ports faced with complex utility relocation issues.

Secondly, in the past, the Corps has insisted on terms in local cooperation agreements that provide for the transfer of sponsor escrow account funds, at a minimum, on an annual basis—long before they are necessary to pay a construction contractor. The Secretary has stated that such action was taken in order to ensure compliance with the Antideficiency Act. Interest on the funds received by the government from the sponsor, but not paid to the contractor for months (for years) has been and continues to be lost to the project sponsor.

While in more recent agreements the Corps has provided for more flexible withdrawal arrangements, this practice is patently unfair and belies the partnership character of the local cooperation agreement. The Committee believes the Secretary should establish a national uniform procedure for withdrawals in order to eliminate interest losses to local sponsors. The Committee has not proposed legislation in this area at this time because the Secretary has clearly demonstrated his awareness of the problem and his desire to resolve it administratively.

Finally, the Committee is aware of the current debate over the interpretation of section 207 of the 1986 Water Resources Development Act. That provision allows for the construction of harbor improvements in "useable" increments.

The Committee understands that this term is being interpreted by the Corps as being synonymous with the word "economic". It is not. The Committee believes that congressional intent in 1986 was clear. Corps harbor projects are planned with much larger projects in mind than local sponsors could possibly cost share at one time. Concerns were raised that the Corps lacked the authority to pro-

ceed to construction with less than the fully authorized harbor improvement project, and section 207 was included in the legislation to allow for the rational development of harbor projects in "useable" increments—i.e., pieces that made programmatic sense.

St. Georges Bridge, Delaware

The Committee would like to make note of the situation surrounding the St. Georges Bridge in Delaware. The existing bridge provides an important crossing for the federally-owned Chesapeake and Delaware Canal. The issue has been raised as to whether the Corps of Engineers has the authority to replace the existing bridge with a wider crossing to accommodate projected traffic loads along Route 13. After extensive review of the history of the canal and its crossings, the Committee believes that the Corps possesses authority to construct a new bridge at St. Georges.

The Committee has found that the history of the crossings for the Chesapeake and Delaware Canal presents a unique situation. The original charter for the canal, dating from 1801, allowed a company to construct a canal from the Delaware Bay to the Chesapeake Bay. However, because the canal severed the State of Delaware in two, the State required the canal operator to provide and maintain "good and sufficient" crossing over the canal at the operator's expense. The crossing requirement ensured that the State's economy, particularly that of southern Delaware and the Delmarva peninsula, would not be impeded by the canal and that Delaware citizens would not incur inequitable costs associated with the canal.

In 1919, the Federal Government took full ownership and operation of the canal through condemnation proceedings. The record of Congressional action leading to that condemnation, and the subsequent legislation, make clear that the United States recognized that it was not only taking over the physical property of the canal, but also the contractual obligations governing it.

The fact that the Federal Government has fully funded the replacement of this bridge in the past from the operation and maintenance account of the Corps of Engineers civil work program substantiates this fact.

Questions about the bridge that this Committee reviewed revolved around the authority of the Corps of Engineers to construct a new bridge. The Committee believes that the terms of the 1801 charter, as assumed by the Federal Government in 1919, provide the necessary authority.

The Federal Government has upheld its responsibility according to the terms of the original charter during the seventy-one years it has owned the canal. The Committee believes the Federal Government should continue to do so, and reaffirms the authority of the United States, through the Army Corps of Engineers, to build a replacement bridge St. Georges.

Section-by-Section

Title I

Title I authorizes for construction 22 new Army Corps of Engineers water resources development projects. All of these projects

are subject to the cost ceiling, automatic deauthorization, cost sharing, and other policies of the 1986 Water Resources Development Act.

SECTION 101

This section authorizes for construction 19 new Army Corps of Engineers water resources development project. Each project has completed Corps of Enginers planning and review, and all have a favorable Chief of Engineers report. Descriptions of the projects are as follows:

Bayou La Batre, Alabama

Location—South Mobile County, Alabama, thirty miles southwest of Mobile.

Purpose—Commercial navigation.

Problem—Insufficient channel depth resulting in operational and production inefficiencies for commercial fishing, ship building, and other marine-related industries.

Recommended Plan—Deepening and extending existing channels. The total length of the improved channel is about 23 miles.

Environmental Impact Statement—Final statement filed with the EPA in November, 1988.

Project Costs—Total $16,230,000. First Federal $4,490,000; first non-Federal $11,740,000.

Benefit/Cost Ratio—2.7 to 1 at a discount rate of 8⅞ percent.

Clifton, Arizona

Location—Southeastern Arizona, adjacent to the San Francisco River.

Purpose—Flood Control.

Problem—Recurring severe flood damages to residential and commercial properties.

Recommended Plan—Structural and non-structural measures, including a 2500 foot levee, minor structural modifications of a railroad bridge, floodproofing of commercial buildings, relocation of 108 households, and redevelopment of floodplain areas for recreational use.

Environmental Impact Statement—Final statement filed with the Environmental Protection Agency on July 1, 1988.

Project Costs—Total $12,510,000. First Federal $9,150,000; first non-Federal $3,360,000.

Benefit/Cost Ratio—1.2 to 1 at a discount rate of 8⅞ percent.

Nogales, Arizona

Location—Nogales Wash and its tributaries in Nogales, Arizona.

Purpose—Flood Control.

Problem—Recurring flood damages to residential and commercial properties in Nogales and neighboring communities.

Recommended Plan—Structural and non-structural measures, including lateral collector channels, channel improvements, a watershed flood warning system, recreation facilities, and mitigation measures.

Environmental Impact Statement—An environmental assessment and finding of no significant impact is included in the project report.

Project Costs—Total $7,260,000. First Federal $5,440,000; first non-Federal $1,820,000.

Benefit/Cost Ratio—2.0 to 1 at a discount rate of 8⅞ percent.

Coyote and Berryessa Creeks, California

Location—Santa Clara County, California in the communities of San Jose, Alviso, and Milpitas.

Purpose—Flood control.

Problem—Recurring flood damages to residential, commercial, and industrial properties.

Recommended Plan—A combination of offset levees, canals, channel improvements, floodwalls, and fish and wildlife damage mitigation measures.

Environmental Impact Statement—Final statement filed with the Environmental Protection Agency in July, 1988.

Project Costs—Total $56,300,000. First Federal $39,000,000; first non-Federal $17,300,000.

Benefit/Cost Ratio—1.04 to 1 (Coyote Creek), 1.3 to 1 (Berryessa Creek) at a discount rate of 8⅞ percent.

Miami Harbor Channel, Florida

Location—Nothern part of Biscayne Bay, on the southeast coast of Florida.

Purpose—Commercial navigation

Problem—Current channel and turning basin dimensions constrain efficient vessel movement, increasing transportation costs and creating safety problems.

Recommended Plan—Deepen the outer channel to 44 feet, deepen the interior channels to 42 feet, and deepen and widen the turning basin.

Environmental Impact Statement—Final statement filed with the Environmental Protection Agency in August, 1989.

Project Costs—Total $65,700,000. First Federal $41,920,000; first non-Federal $23,780,000.

Benefit/Cost Ratio—1.5 to 1 at a discount rate of 8⅞ percent.

Martin County, Florida

Location—22 miles of ocean shorefront of Martin County, 225 miles south of Jacksonville.

Purpose—Erosion control.

Problem—Significant dune erosion and shoreline recession due to storms, reducing capacity to meet long term recreational needs.

Recommended Plan—Restoration of about 4 miles of the primary dune system. A level berm will provide storm protection to the dune system and recreation space.

Environmental Impact Statement—Final statement filed with the Environmental Protection Agency in September, 1988.

Project Costs—Total $9,400,000. First Federal $3,850,000; first non-Federal $5,550,000.

Benefit/Cost Ratio—1.5 to 1 at a discount rate of 8⅞ percent.

Fort Wayne, Indiana

Location—Fort Wayne, Indiana, where the St. Joseph and St. Marys Rivers join to form the headwaters of the Maumee River.

Purpose—Flood control.

Problem—Recurring flooding in the Fort Wayne area resulting in severe residential and commercial damage.

Recommended Plan—Upgrading 35,000 feet of levee, floodwall, and steel sheet pile crib along the tributaries; addition of a new pumping station, bridge and road alternations, plus recreational facilities.

Environmental Impact Statement—Final statement was filed with the EPA in September, 1988.

Project Costs—Total $16,300,000. First Federal $12,100,000; first non-Federal $4,200,000.

Benefit/Cost Ratio—2.7 to 1 at a discount rate of 8⅞ percent.

Aloha-Rigolette Area, Louisiana

Location—Northcentral Louisiana near Alexandria and Pineville, Louisiana.

Purpose—Flood control.

Problem—Flooding in the basin resulting from increased runoff due to cleared forest land and decreasing bayou carrying capacity.

Recommended Plan—Construction of a floodgate structure, clearing of streams in the floodplain, and mitigation measures.

Environmental Impact Statement—Final statement was filed with the EPA in September, 1989.

Project Costs—Total $8,283,000. First Federal $6,212,000; first non-Federal $2,071,000.

Benefit/Cost Ratio—1.2 to 1 at a discount rate of 8⅞ percent.

Boston Harbor, Massachusetts

Location—The Port of Boston, Massachusetts.

Purpose—Commercial navigation.

Problem—Insufficient channel depth in three major tributaries resulting in tidal delays, limitations on vessel size and loading, and safety concerns.

Recommended Plan—Deepening the Reserved, Mystic River, and Chelsea River channels, dredging berthing areas, and widening the confluence areas.

Environmental Impact Statement—An environmental assessment and finding of no significant impact is included in the project report.

Project Costs—Total $27,215,000. First Federal $16,854,000; first non-Federal $10,361,000

Benefit/Cost Ratio—1.5 to 1 at a discount rate of 8⅞ percent.

Ecorse Creek, Michigan

Location—The Ecorse Creek Drainage Basin in southeastern Michigan, south of Detroit.

Purpose—Flood control.

Problem—Recurring flood damage due to the severely limited hydraulic capacity of the North Branch Ecorse Creek and Sexton-Kilfoil Drain.

Recommended Plan—Construction of a stormwater retention basin.

Environmental Impact Statement—Final statement filed with the EPA in November, 1988.

Project Costs—Total $7,280,000. First Federal $4,560,000; first non-Federal $2,720,000.

Benefit/Cost Ratio—1.3 to 1 at a discount rate of 8⅞ percent.

Great Lakes Connecting Channels and Harbors

Location—The waterways between the Great Lakes which provide deep-draft commercial navigation and the deep-draft harbors upstream of the Welland Canal

Purpose—Commercial Navigation

Problem—Need to maximize efficient use of the system by improved service to class 10 and other vessels, reducing the number of annual delays.

Recommended Plan—Deepening areas along the St. Marys River and in Duluth Harbor. Dredged materials are to be deposited to form a habitat island for endangered species.

Environmental Impact Statement—Final statement was filed with the EPA in September, 1988

Project Costs—Total $7,489,100. First Federal $5,037,500; first non-Federal $2,451,600.

Benefit/Cost Ratio—23 to 1 at a discount rate of 8⅞ percent.

Coldwater Creek, Missouri

Location—Located in the northern part of highly urbanized St. Louis County, Missouri.

Purpose—Flood control.

Problem—Recurring flooding and streambank erosion in the metropolitan area.

Recommended Plan—Widening 10 miles of the main channel of Coldwater Creek, enlarging the opening through a railroad embankment, construction of two levees, a flood forecasting and warning system, and recreation facilities.

Environmental Impact Statement—Final statement was filed with the EPA in April, 1988.

Project Costs—Total $22,380,000. First Federal $15,500,000; first non-Federal $6,880,000.

Benefit/Cost Ratio—1.6 to 1 at a discount rate of 8⅞ percent.

River Des Peres, Missouri

Location—111 square miles in west central St. Louis County and St. Louis City, Missouri.

Purpose—Flood control.

Problem—Recurring flood problems and streambank erosion in the metropolitan area.

Recommended Plan—Channel improvements along approximately 5 miles of River Des Peres, addition of a flood forecasting and warning system, floodproofing, and recreation facilities.

Environmental Impact Statement—An environmental assessment and finding of no significant impact is included in the project report.

Project Costs—Total $20,550,000. First Federal $15,270,000; first non-Federal $5,280,000.

Benefit/Cost Ratio—1.4 to 1 at a discount rate of 8⅞ percent.

Passaic river, New Jersey and New York

Location—A 935 square mile watershed in northeastern New Jersey and southeastern New York.

Purpose—Flood control.

Problem—Recurrent tidal and fluvial flood problems in the metropolitan area.

Recommended Plan—A combination of channel improvements, levees, floodwalls, diversion tunnels, storage areas, and fish and wildlife mitigation measures.

Environmental Impact Statement—Final statement filed with the EPA in May, 1982.

Project Costs—Total $1,200,000,000. First Federal $890,000,000; first non-Federal $310,000,000.

Benefit/Cost Ratio—1.1 to 1 at a discount rate of 8⅞ percent.

Rio de la Plata, Puerto Rico

Location—North central Puerto Rico along the Rio de la Plata.

Purpose—Flood control.

Problem—Frequent flooding in the area, affecting 12,000 families and 300 commercial establishments.

Recommended Plan—A combination of levees, channel improvements, and interior drainage measures.

Environmental Impact Statement—Final statement was filed with the EPA in September, 1988.

Project Costs—Total $56,990,000. First Federal $34,780,000; first non-Federal $22,210,000.

Benefit/Cost Ratio—1.7 to 1 at a discount rate of 8⅞ percent.

Myrtle Beach, South Carolina

Location—Myrtle Beach and vicinity.

Purpose—Storm damage reduction.

Problem—Recurring damage to structures in the study area due to winter storms.

Recommended Plan—Placement of a protective beach in three separable areas to provide protection from a 5-year storm surge.

Environmental Impact Statement—An environmental assessment and finding of no significant impact is included in the project report.

Project Costs—Total $59,730,000. First Federal $38,820,000; first non-Federal $20,910,000.

Benefit/Cost Ratio—3.4 to 1 at a discount rate of 8⅞ percent.

Buffalo Bayou, Texas

Location—The Buffalo Bayou and tributaries in the Houston metropolitan area.

Purpose—Flood control.

Problem—Frequent flooding of urban and suburban properties due to overbank stream flooding in the 1034 square mile drainage basin.

Recommended Plan—Flood damage reduction plans including stream enlargements, selective stream clearing, and flood detention basins in six tributary drainage basins, plus recreational facilities and fish and wildlife mitigation measures.

Environmental Impact Statement—Final statement was filed with the EPA in September, 1988.

Project Costs—Total $544,604,000. First Federal $309,313,000; first non-Federal $235,291,000.

Benefit/Cost Ratio—3.7 to 1 at a discount rate of 8⅞ percent.

Ray Roberts Lake, Texas

Location—Greenbelt corridor between Ray Roberts Dam and Lewisville Lake in the Trinity River Basin in the Dallas-Ft. Worth metropolitan area.

Purpose—Recreational facilities.

Problem—Need for alternative recreational facilities in the form of stream oriented open-space recreation areas in the urban area.

Recommended Plan—Acquisition and management of 1600 acres along the 14 river mile stretch of the Elm Fork of the Trinity River between Ray Roberts Dam and Lewisville Lake. The acquisition is in lieu of traditional recreation facilities at Lewisville Lake provided in the project authorization.

Environmental Impact Statement—An environmental assessment and finding of no significant impact is included in the project report.

Project Costs—Total $4,620,000. First Federal $1,730,000; first non-Federal $2,890,000.

Benefit/Cost Ratio—3.1 to 1 at a discount rate of 8⅞ percent.

Upper Jordan River, Utah

Location—The Jordan River Basin in northcentral Utah.

Purpose—Flood control.

Problem—Recurrent flooding along the Jordan River due to snowmelt and rainstorms.

Recommended Plan—Diversion measures including a diversion structure and conduit plus enlarged detention basins.

Environmental Impact Statement—Final statement was filed with the EPA in July, 1988.

Project Costs—Total $7,900,000. First Federal $5,200,000; first non-Federal $2,700,000.

Benefit/Cost Ratio—1.4 to 1 at a discount rate of 8⅞ percent.

SECTION 102

(a) With respect to inland navigation, the Committee has chosen to authorize two lock and dam replacements on a contingent basis: the McAlpine Lock and Dam on the Ohio River in Indiana and Kentucky, and Lock and Dam Numbers 2 and 3 on the Monogahela River in Pennsylvania. These projects are part of the inland navigation system and therefore have no local sponsor. They are integral parts of a system that the Federal Government bears the principal responsibility for maintaining. The existing facilities have deteriorated to the point where the danger of catastrophic failure is present.

The Committee is concerned that the Secretary is not managing the inland navigation system as a system. While the Committee recognzies that the point-specific authorization of lock and dam projects may not be the best way to manage this system, it is clear that the two projects authorized are critical to future navigation on the Ohio and Monongahela Rivers. Furthermore, the Committee understand that Corps review of these projects likely will be completed before the Committee considers water resources legislation in 1992, and that postponement of authorization could lead to delays in construction.

The following projects are authorized contingent on a favorable review by the Chief of Engineers and approval by the Secretary of the Army.

McAlpine Lock and Dam, Indiana and Kentucky

Location—The Ohio River near Louisville, Kentucky

Purpose—Inland Commercial Navigation

Problem—Critical features of the structure are in poor physical condition; are under capacity; and cause serious delays in transiting the Ohio River.

Recommended Plan—A new 1,200 foot lock will be built on the site of the present facility; a new bridge spanning the upstream end of the new lock and a fixed weir across the end of the lock with a roadway on top will replace the existing swing bridge.

Environmental Impact Statement—The draft final statement was filed with the EPA on November 9, 1989.

Project Costs—Total $219,400,000. Half of these costs are to be financed from the Inland Waterway Trust Fund.

Benefit/Cost Ratio—1.6 to 1 at a discount rate of 8⅞ percent.

Locks and Dams 2 and 3, Monongahela River, Pennsylvania

Location—Monongahela River, near the city of Pittsburgh.

Purpose—Inland Commercial Navigation

Problem—These facilities were constructed in 1906 and 1907. Severe deterioration and structural instability have been identified at both facilities.

Recommended Plan—Replacement of the existing lock chambers with 84 foot or 110 foot wide locks and rehabilitation of the existing dams.

Environmental Impact Statement—The Environmental Impact Statement will be completed as part of the Chief of Engineers' report.

Project Costs—Total $450,000,000. Half of these costs are to be financed from the Inland Waterway Trust Fund.

Benefit/Cost Ratio—1.3 to 1 at a discount rate of 8⅞ percent.

Subsection (b) of section 102 provides that half the costs of the above projects shall come from the Inland Waterways Trust Fund, and the remaining half from the General Treasury.

Kissimmee River, Florida

Section 102(c) authorizes one project for construction on a contingent basis that will require a local sponsor: the Kissimmee River Restoration Project in Florida. This project will remedy environmental damage caused by flood control work performed by the

Corps many years ago. The Corps of Engineers bears primary responsibility for the damage that made this project necessary.

The Kissimmee River project is authorized conditional on its being favorably reviewed by the Chief of Engineers and approved by the Secretary of the Army. A description of the project follows.

The Kissimmee, the main river feeding Lake Okeechobee and thus essentially the headwaters of the whole South Florida Everglades, once snaked back and forth across a one to two mile floodplain and along a 103 mile course before emptying into Lake Okeechobee. To provide flood protection for a growing central Florida community, the Army Corps of Engineers was authorized to "channelize" the river by cutting a straight 56 mile canal to the lake. Over 45,000 acres of wetlands were drained, and the resulting increase in agriculture and development in the river basin has contributed to severe nutrient loading of the lake.

"Dechannelizing" the river and returning it largely to its original flow path would restore a functioning river-floodplain ecosystem, fully restore two thirds of the original wetlands, and significantly improve most of the remaining wetlands. In addition, it would greatly improve the capacity of the system to filter nutrients and contaminants flowing into the lake.

In 1985 the Corps completed an environmental restoration feasibility study of the river. The recommendations of this report were never processed because environmental enhancement projects which lacked a formal benefit to cost calculation were not supported by the Secretary of the Army for funding at that time.

In recognition of the need for the Corps to engage in environmental restoration of existing projects, Congress added Section 1135 to the Water Resources Development Act of 1986 which authorized $25 million for such projects over two years, with the Kissimmee as a primary focus. Under the Water Resources Development Act of 1988, Congress extended the Section 1135 environmental demonstration program for an additional three years.

Under Section 1135, $6.3 million has been appropriated for the Kissimmee to date, but this section limits the Corps' role to those environmental activities consistent with the project's original design, i.e., navigation and flood protection.

Section 102(c) is a response to the time, scope and funding limitations of Section 1135. It modifies the original authorization of the project that channelized the river by authorizing a comprehensive environmental restoration of the Kissimmee River. The restoration shall include, but not be limited to, filling of the existing canal, removal of spillways and locks, and increasing the storage in the upper Kissimmee basin. Additionally, the environmental restoration must minimize, to the fullest extent possible, its effects on the original project's flood control and navigation purposes.

The restoration is authorized at an estimated total first cost of $270 million contingent on the issuance of a favorable Chief of Engineers report and approval of this report by the Secretary. The Chief's report shall be based on the Level II backfilling plan proposed by the local sponsor, the South Florida Water Management District, in its report entitled "Kissimmee River Restoration, Alternative Plan Evaluation and Preliminary Design report."

Subsection (d) makes clear that the Secretary may use funds appropriated under Section 1135 as well as funds appropriated pursuant to this section to implement the restoration project.

With this project the Committee intends to help chart a new course for the Army Corps of Engineers, one in which the Corps utilizes its extensive expertise for the restoration and protection of the environment.

Non-Federal interests shall bear at least 25 percent but not more than 50 percent of the total project first cost. Total project first cost includes all land, easements, rights-of-way, relocations, and dredged material disposal areas of which the costs are the responsibility of the non-Federal interests up to the 50 percent maximum.

TITLE II: PROJECT RELATED PROVISIONS

SECTION 201

This section authorizes the Corps to construct a flood control project to protect Belen, New Mexico. The City of Belen is situated in a bowl-like configuration between the Rio Grande River on the east and mesas to the west. Flood waters of the mesas have covered much of the City of Belen on several occasions, damaging property and threatening lives.

The project would widen and deepen the Highline Canal, which is owned by the Middle Rio Grande Conservancy District. With an enlarged capacity, the canal would capture the runoff from the west, subsequently transferring the runoff water about six miles downriver to be released into the Rio Grande.

Because of the topography and the lengthy diversion required, this project is relatively expensive. The Corps has been unable to design a project that can be justified on strict national economic development terms.

Therefore, this section authorizes the project pursuant to Section 903(c) of the 1986 Water Resources Development Act. Under that provision, projects that are deemed uneconomic may still be approved by the Congress if non-Federal interests agree to pay all the costs of the project over and above a sum needed to equal the benefits of the project.

Under the language approved by the Committee, the non-Federal sponsors will be required to contribute the standard 25 percent non-Federal share on that portion of the project that equals the benefits of the project, as well as to contribute all the additional remaining costs.

Specifically, this section requires the non-Federal interests to contribute $7,446,000 toward the full cost of the project which is $19,575,000.

SECTION 202

This section deauthorizes the Cross Florida Barge Canal and transfers to the State of Florida, without consideration, all Federal lands acquired for the canal, and facilities completed for the project, for the purposes of combining them with State-acquired lands and creating a "greenway corridor". The deauthorization and land transfer are conditioned upon the State through a resolution

adopted by the Governor and State Cabinet, agreeing to several terms. The primary terms include the following.

First, the State must agree to create, preserve and maintain a greenway corridor along the original canal route (from the Gulf of Mexico to the Atlantic Ocean) to be used by the public only for compatible recreation and conservation activities as defined in a management plan to be developed by the State. The management plan must describe the actual boundaries for the corridor which must be at least 300 yards wide except for those areas where a) as of the date of enactment, the State owned no land or the land it did own was less than 300 yards wide, or b) a road or bridge crosses the corridor. It is the Committee's intention that the State management plan describe in a comprehensive fashion how the State will create, manage and improve the greenway.

Second, the State must agree to designate the eastern portion of the corridor (from the southwest boundary of the Oklawaha River Basin to the Atlantic Ocean) a State park, conservation area and/or recreation area.

Third, the State must agree to preserve, enhance, interpret and manage the western portion of the corridor (from the Gulf of Mexico to the southwest boundary of the Oklawaha River) for the public interest in perpetuity, subject to the designation and sale of non-environmentally sensitive parcels of property as surplus lands pursuant to the State management plan. It is the Committee's intention that the public interest be defined as the conservation of environmental, recreational and cultural values of the greenway.

Fourth, the State must agree to pay six counties—Citrus, Clay, Duval, Levy, Marion and Putnam—at least $32 million as reimbursement for taxes they collected earlier to help build the canal. Cash payments may be derived only from assets of the State Canal Authority, the Cross Florida Navigation District or from the sale of former canal lands designated surplus by the State. In lieu of cash, the counties may choose to accept former canal lands designated surplus by the State.

Fifth, the State must agree that it may use any funds remaining after the sale of such surplus lands to acquire additional land for the corridor as prescribed in its management plan. Any and all such funds not used for land acquisition must be used only for improving and managing the greenway.

While the Secretary must transfer all Federal lands to the State immediately upon the passage of the State's resolution, he must retain title to the locks and other constructed portions of the canal lying between the Atlantic Ocean and the Eureka Lock and Dam, inclusive, and the Gulf of Mexico and the Inglis Lock and Dam, for 24 months after the date of enactment. During that time, he must carry out all programmed maintenance on these portions of the canal project.

SECTION 203

Section 203 authorizes and directs the Secretary of the Army to develop two important projects on the lower Truckee River in Nevada. Both projects are environmental enhancement measures which will provide significant benefits to two protected fish, the en-

dangered cui-ui, which is found only in the Truckee River/Pyramid Lake ecosystem, and the threatened Lahontan cutthroat trout, and to the Pyramid Lake Paiute Tribe of Indians who have depended on the fish for their sustenance and livelihood from time immemorial. The trout and the cui-ui, and the ecosystem on which they depend, have been devastated as a result of Federal reclamation and flood control projects dating back to the turn of the century. The two new projects are needed to ovecome the adverse impacts caused by the previous projects and to achieve recovery of the two listed species.

Both projects will be undertaken pursuant to sections 906(e) and 1135 of the Water Resources Development Act of 1986. As implemented, the plan will modify the structures and operations of previous Corps projects to improve the quality of the environment in the public interest in accordance with the criteria for projects authorized under section 1135. Since they will provide significant benefits to both an endangered and a threatened species, the projects' cost will be borne entirely by the Federal government pursuant to section 906(e). It is also worth noting that the projects will fulfill the Federal Government's trust responsibility to the Pyramid Lake Paiute Tribe of Indians by providing significant benefits to the fishery on which the Tribe relies. Section 905(c) of the 1986 Water Resources Development Act is intended to promote such tribal projects.

SECTION 204

The State of Kentucky and the Army Corps of Engineers entered into an agreement under which the Corps would transfer four locks and dams on the Kentucky River to the State for future operation provided the Corps performed certain maintenance work prior to the transfer of the property. This section provides that the transfer shall not take place until such time as the agreed upon maintenance work is completed by the Corps of Engineers.

SECTION 205

This section establishes a management conference for the restoration, conservation, and management of Onondaga Lake, New York.

SECTION 206

This section authorizes funding for the design and construction of an interceptor sewer line system to remedy major water supply and quality problems in Cranston, Rhode Island. The plan is unique in that it addresses multiple sources of pollution under one interconnected treatment system. The project revolves around the city's state-of-the-art wastewater treatment facility. Although the facility currently treats an average wastewater flow of 12 million gallons per day (MGD), it was designed to handle over 20 MGD by the year 2000.

The project will utilize this excess capacity by connecting the State's Central Landfill, which lacks sufficient leachate and wastewater collection, and a planned waste-to-energy recycling facility to be located there, with the City's wastewater treatment

plant. Connecting the Central Landfill is especially important to Rhode Island, as the site threatens both groundwater and the Scituate Reservoir which supplies over half of the State's drinking water. In the process of connecting the Central Lanfill, the City is considering a tie-in to the Capuano Landfill in Cranston for the purpose of collecting and treating the leachate generated by this source.

The Committee believes that this project represents a unique opportunity for the Corps to utilize its engineering and design expertise. The innovative nature of the technical design and the emphasis on a multi-source approach to pollution abatement and prevention afford the Army Corps of Engineers and the Environmental Protection Agency an opportunity to develop a waste treatment model for communities across the country.

SECTION 207

This section authorized the Secretary to reimburse the Roanoke, Virginia hospital for floodproofing which was performed at a time when the Corps indicated that such work would not be included as part of a larger flood control project for the city.

SECTION 208

This section restores the authorization of anchorage areas at Norfolk Harbor which have been deauthorized.

SECTION 209

This section directs the Secretary of State, acting through the Commissioner of the International Boundary and Water Commission, to construct an extension of the Rio Grande American Canal within the United States.

SECTION 210

This section updates section 4(t) of the 1988 Water Resources Development Act regarding the transfer of title to the city of Aberdeen, Washington of the Wynoochee Dam and Lake facilities.

Prior to title transfer, the Corps shall make an inventory of the project's real and personal property to determine which items will be transferred and so notify the City of Aberdeen.

The authority granted to the Secretary is intended to ensure that continued operation and maintenance of the project is consistent with the project purposes. Once title to the project is transferred to the City of Aberdeen, the Secretary will exercise oversight over the City's operation and maintenance performance only as such performance affects the project's authorized purposes.

In order for the city of Aberdeen to carry out the project's fish and wildlife mitigation activities after title transfer, the Secretary and the city should confer prior to transfer as to the nature of such activities, any past or future commitments made by the Secretary, and the financial costs related to such activities after transfer.

SECTION 211

This section authorizes the acquisition of an additional twelve thousand acres of land for mitigation purposes of the Red River

Waterway near the Bayou Bodcau Wildlife Management Area, Louisiana.

SECTION 212

The Alenaio Stream project, Hawaii, was authorized for construction in the 1986 Water Resources Development Act. Detailed design of the project has indicated the need for several changes which necessitate an increase in the cost ceiling for the project. This section provides this increase.

SECTION 213

This section requires the Chief of Engineers and the Secretary of the Army to report on how their operation of the Dworshak Dam in Idaho affects recreation and navigation use of the Dworshak Reservoir. Subsection (b) instructs the Corps not to manage the Dam in a way that "jeopardizes" these uses so that they are, for the most part, unavailable. An exception to this would be provided if the water control plan for the entire Columbia River system necessitates, for regional power demands or other needs, a draw-down of Dworshak Reservoir reserves. This exception is available only if the Corps promulgate its altenative operational plan as required by section 308 of this Act.

It is expected that the water control plan for the Columbia system will identify the region's hydropower as well as any incidental downstream industrial water needs, including the needs of pulp and paper mills. In carrying out this provision, the Corps should prioritize downstream uses which would require a draw-down of Dworshak reserves, and incorporate the comparatively more beneficial uses in the regional water control plan.

SECTION 214

This section directs the Corps to move forward expeditiously in developing and implementing a project to remove sediments and restore the upsteam conservation pool of West Fork of Mill Creek Lake, Ohio, pursuant to Section 1135 of the Water Resources Development Act of 1986. The lake was identified and submitted as a Section 1135 environmental restoration demonstration project in 1987. Congress provided $500,000 for preliminary engineering and design work in fiscal 1989, but allocation of the funds was not approved by the Corps. A directive ordering allocation of the funds subsequently was included in the fiscal year 1989 supplemental appropriations legislation. As of this date, the preliminary engineering and design documents have not been finalized. The Committee is concerned about continued delays with respect to this project, and accordingly, is directing the Corps to expedite it.

SECTION 215

This section extends the authorized period of the Upper Mississippi River Plan authorized in section 1103 of the 1986 Water Resources Development Act by five years. These important environmental enhancement provisions have not been funded as quickly as was originally anticipated. This extension will allow more time to implement these important measures.

SECTION 216

This section authorizes the Secretary to conduct a study and prepare a drought contingency plan for the Red River Valley in Minnesota and North Dakota.

SECTION 217

This section increases the cost ceiling on the project for flood protection located on the South Fork of the Zumbro River in Minnesota. Design changes have increased the total cost of the project to $112 million.

SECTION 218

This section increases the cost ceiling on the project for flood protection at St. Paul, Minnesota. Design changes have increased the total cost of the project to $18,021,000.

SECTION 219

This secton increases the cost ceiling on the project for flood control in Marshall, Minnesota. Design changes have increased the total cost of the project to $9,632,000.

SECTION 220

This section authorizes the Secretary to conduct a study of the impact of water fluctuations at Lake Winnibigoshish, Minnesota, and to cooperate with the U.S. Forest Service in performing bank stabilization measures around the lake.

SECTION 221

This section authorizes the Secretary to conduct 1) a study of lake currents and siltation and 2) a study of the impact of lake levels on fish habitat at each of the six headwater reservoirs of the Mississippi River in Minnesota.

SECTION 222

This section authorizes the relocation of the Southeast Light. The Southeast Lighthouse is located on Mohegan Bluffs on Block Island, Rhode Island and is in imminent danger of falling into the sea. Constructed in 1873, the Light was illuminated as part of the Federal Government's effort to ensure safe navigation in Block Island Sound. The Southeast Light is a truly remarkable structure and unique among all lighthouses. This massive red brick structure, of Victorian Gothic Revival style, consists of a double cottage attached to an octagonal light tower. The Light's Fresnel lens, imported from France, is large enough for six people to stand inside. To this day, the Light is considered one of the primary beacons along the East Coast. The Southeast Light has served its mission well and has long been a symbol of New England's maritime history.

In July of 1990, the United States Coast Guard will retire the Light and replace it with a steel tower aid to navigation. According to geology experts, the bluffs upon which the Light sits has been eroding for over one hundred years. The weakness of the clay sedi-

ment cliff in conjunction with rainfall and wave and tidal action constantly wear back the bluff, often at rates approaching seven feet per year. At present, the Lighthouse is approximately sixty feet from the near vertical cliff. The situation is particularly alarming in view of the fact that over forty feet of land would be required to facilitate a relocation of the structure.

Since 1983, a group of Rhode Islanders has been working to save this magnificent landmark. In 1987, the group formed the Southeast Lighthouse Foundation. The primary goal of the private organization is to raise the necessary funds to cost share fifty percent of the total expense of moving the Light from the edge of the cliff. Upon completion of the move, the Foundation envisions the establishment of permanent maritime and natural history exhibits on display and open to the general public at the Light. The State of Rhode Island and private contributors already have expressed their interest in participating in a cost-sharing agreement.

The Committee believes that a cooperative effort among Federal, State and local interests is warranted in order to preserve this historic landmark. According to recent engineering studies, the total cost of moving the Light is approximately $1,940,000, of which the lesser of one half, or $970,000, is to be funded by the Army Corps of Engineers. The appropriation would not become available unless the Foundation were successful in attracting matching funds to effect the relocation.

The U.S. Army Corps of Engineers is particularly well suited to participate as a partner in this project. As the nation's engineer, the Corps possesses the necessary technical and engineering expertise to undertake the relocation. The Corps is to coordinate the relocation effort with the United States Coast Guard and other interested Federal, State and local interests.

TITLE III: GENERAL PROVISIONS

SECTION 301

This section requires that all future internal policy regulations of the Corps of Engineers—know as Engineer Regulations and Project Operation Plans—be subject to public comment and review before becoming effective. This section also requires that once a cost sharing agreement is signed with a sponsor for a feasibility study, any subsequent changes in policy which would alter the eligibility of the project under study shall not apply to such project.

SECTION 302

This section refers to the implementation of Engineers Regulation 1165–2–123, dated August 31, 1989, and which concerns "single owner" or "single entity" designations related to water project development. This section precludes publicly owned or used facilities from being designated as "single owner" or "single entity" beneficiaries and requires the Secretary to provide to the project sponsor an economic assessment of the precise National Economic Development benefits associated with the project which accrue to such "single owner" or "single entity" when such facility is in private ownership.

SECTION 303

This section amends Section 105(b) of the 1986 Water Resources Development Act to clarify original Congressional intent. In the 1986 Act a number of projects were authorized only for preconstruction planning, engineering, and design, when they had not undergone the feasibility study phase of planning. These activities are undertaken with construction funds and are not part of the normal feasibility study process. At the time, it was the intent of Congress to have the sponsors of such projects contribute half of the cost of such work, similar to the cost sharing which was imposed on the sponsors of feasibilty studies. It was not the intent to require a 50 percent cost share for all such "preconstruction planning, engineering and design" on all projects which follow the normal authorization and planning process. The sponsors of these projects are to contribute half the cost of the feasibility study and whatever the appropriate cost share is for the construction of the project as outlined in the 1986 Water Resources Development Act.

SECTION 304

This section provides that the recommended level of protection for a Corps flood control or storm damage prevention project is to be at least the 100 year level of protection, provided that such protection can be provided economically.

SECTION 305

This section amends section 101 of the 1986 Water Resources Development Act to reduce the local cost sharing required for a navigation project to the extent that the benefits of such project accrue to the armed sevices.

SECTION 306

This section amends Section 33 of the 1988 Water Resources Development Act to permit the acquisition of real property and associated improvements and authorizes monetary compensation to affected landowners whose property has been eroded on the Missouri River due to the operation of the reservoirs on the river by the Army Corps of Engineers.

SECTION 307

Section 103(m) of the 1986 Water Resources Development Act is referred to as the "ability to pay" provision. The implementation of this policy has been criticized on three separate fronts. Constituents from rural areas have found that the existing regulation is a catch-22 which precludes any local cost share reduction for flood control projects which have high economic value and are worth implementing, but provides reductions if the benefit to cost ratio of a project is below unity, indicating an uneconomic investment. Others from poor areas in wealthy States have questioned the requirement that States be required to participate in the local cost sharing of projects although these projects would qualify for a cost share reduction if they were located in a less wealthy State. Poor urban communities have voiced objections to a policy which biases

the calculation of need toward rural areas and excludes urban areas because they are urban rather than because they are wealthy.

The Committee believes that the Secretary needs to reformulate the ability to pay regulation and its method of implementation. The Committee believes that the ability to pay provision was intended to apply to the new requirement for a cash payment as part of the cost sharing requirements for a flood control project, and was never intended to apply to the long standing requirement for the contribution of lands, easements, rights-of-way and relocations by a non-Federal sponsor of flood control projects.

The Committee understands that the Secretary has made a good faith effort to implement this policy, but that a revision is still warranted. The Committee urges the Secretary to consider a number of variables in assessing a community's ability to pay, including income statistics, the taxable base of the community and the size of the project to be constructed. Additionally, the total cost that a jurisdiction is required to bear from traditional lands, easements, rights-of-way, etc. also needs to be considered in determining a community's ability to contribute additional cash toward a project. There should be no arbitrary limit placed on the number of jurisdictions eligible for consideration under this policy, as has been defined by the Secretary. Similarly the policy should not be biased toward either rural or urban areas, and any implementation rule which de facto excludes one type of community or the other is biased.

This section voids the existing regulation and gives the Secretary one year to write a new regulation which focuses on local financial capacity and not State financial capacity; and which focuses on the requirement for a cash contribution. The existing cap of 50 percent on non-Federal contributions to flood control projects is in no way altered by this section.

SECTION 308

This provision requires that when the Corps alters its project operations to the detriment of authorized beneficiaries of a project, it must justify such action and have a determination made by the Secretary that such operational change is in accord with original congressional intent and that authorizing authority for the operating change is not needed.

SECTION 309

This Section authorizes the Secretary to undertake Research and Development activities relating to MAGLEV.

SECTION 310

The Secretary has expressed the need to coordinate with the International Boundary and Water Commission in the State Department on flood protection issues which overlap the Nation's border with Mexico. This section therefore authorizes the Secretary to cooperate in the construction and maintenance of flood gauges in Mexico.

SECTION 311

Current authority of the Corps to provide technical assistance to non-Federal public entities exists only when the work involves some other form of Federal assistance and where the head of the Federal agency providing such assistance does not object to the Corps providing its services. This provision would allow the Corps to provide reimbursable work for a State or political subdivision of a State at the request of the non-Federal public entity.

SECTION 312

This section clarifies Section 1001(b) of the Water Resources Development Act of 1986 which provides for the deauthorization of projects authorized prior to 1986. The purpose of the original provision was to periodically deauthorize projects unless a substantive commitment to construction of the project was made within a reasonable amount of time. Award of a contract for construction of a project reflects such a commitment. However, because it takes more time to obtain and obligate funding, the period during which definitive action must be taken has been increased to four years. This section does not affect subsection (a) of section 1001 of the Water Resources Development Act of 1986, or Section 52 of the 1988 Water Resources Development Act relating to the deauthorization of projects authorized in and subsequent to the 1986 Water Resources Development Act.

SECTION 313

This section authorizes the Corps to provide technical assistance on a reimbursable basis to the private sector when such services cannot be obtained from other elements of the private sector.

SECTION 314

This section authorizes the Secretary to report to the Congress within six months of the date of enactment on a specific cost recovery plan for use of recreation sites and facilities at Corps projects. This plan is to include a list of all recreation areas in which user charges would be imposed, a description of the types of recreation activity to be charged, and a delineation of the specific type and size of user charges.

SECTION 315

This section phases in cost sharing for the planning assistance to States program authorized originally under Section 22 of the Water Resources Development Act of 1974. This provision will phase in cost sharing for such assistance from 10 percent in Fiscal 1991 to 50 percent in fiscal year 1993.

SECTION 316

This section authorizes the Corps to cost share the provision of Flood Plain Management Services to private interests and other Federal agencies. The level of cost recovery authorized is one hundred percent.

SECTION 317

Section 210 of the 1986 Water Resources Development Act authorized the Corps of Engineers to use funds in the Harbor Maintenance Trust Fund for up to 40 percent of the cost of eligible operation and maintenance costs of the nation's harbors. This section authorizes the Corps to use funds in the Harbor Maintenance Trust Fund for up to one hundred percent of such eligible operation and maintenance costs, and defines eligible operation and maintenance costs as: "all necessary dredged material management and disposal costs including studies, monitoring, structures required for disposal and any alternative method of disposal."

SECTION 318

This section authorizes the Corps to plan and coordinate responses for any type of natural disaster. At the present time the Corps can plan for the implementation of relief measures only for flood related disasters.

SECTION 319

Section 204 of the 1986 Water Resources Development Act provided for construction of authorized Federal navigation projects by non-Federal interests. The intention was to expedite the construction of navigation projects. This section applies the provisions of section 204 to small navigation projects constructed under section 107 of the River and Harbor Act of 1960.

SECTION 320

This section amends the existing authority of the Corps to collect debris in New York Harbor. This section authorizes the collection of all types of debris in the Harbor area whether such debris is in the channel or outside the formal channel boundary.

SECTION 321

This section directs the U.S. Geological Survey to conduct a study of the water quality of the Mississippi River in consultation with the Corps of Engineers, the Fish and Wildlife Service, and the Environmental Protection Agency.

SECTION 322

Section 1135 of the Water Resources Development Act of 1986, Public Law 99-662, authorized the Secretary of the Army to carry out a demonstration program in the two-year period beginning on the date of enactment of the 1986 Act for the purpose of making such modifications in the structures and operations of water resources projects constructed by the Secretary before the date of enactment of the Act which would improve the quality of the environment in the public interest. Section 41 of the Water Resources Development Act of 1988, Public Law 100-676, extended the demonstration program period to five years.

The Committee believes that it is imperative for the Army Corps of Engineers to incorporate environmental enhancement advances in all water resources projects and thus authorizes Section 1135 as

a permanent Corps program. This will allow the Army Corps of Engineers to take advantage of environmental opportunities, such as the construction of fish ladders or the diversion of water for the creation of wetlands, at any completed water resources project and afford potential cost sharing partners sufficient time to obtain the necessary financing to support non-Federal participation.

SECTION 323

This section amends the 1941 Flood Control Act to permit the use of emergency funds for conducting emergency dredging operations only in the event if a Presidentially declared emergency or disaster under the Robert T. Stafford Disaster Relief and Emergency Assistance Act.

TITLE IV: ZEBRA MUSSELS

The zebra mussel, *Dreissena polymorpha* (Pallas 1771), is native to temperate freshwater habitats of the Black, Caspian, and Azov Seas in Southern Asia.

The zebra mussel is believed to have arrived in North America in the ballast water of a ship from Europe in the summer of 1986, and escaped as larvae in discharged ballast water into Lake St. Clair or the St. Clair River.

Zebra mussels are now well established in Lake St. Clair and in Lake Erie, have been found in the Niagara River and in Lake Ontario at Port Weller (the mouth of the Welland Canal), and have been reported downstream in the St. Lawrence River. There is also a report of isolated mussels having been discovered on a navigation buoy in Green Bay, Wisconsin in the spring of 1989.

The zebra mussel is expected to spread through waterways across much of the United States. This movement will occur in three ways—transport of larvae downstream or downwind by water currents, transport by human activity such as adult mussels attached to vessel hulls or in engine housings, and transport by waterfowl or other wildlife.

This title directs the Corps to develop and design a program of research and technology development for the control of zebra mussels around public infrastructure facilities (water intakes, etc.), and provides $2.5 million a year for five years.

This title also provides $25 million over the next five years for this purpose for assistance to facilities, identified by the State, which, without additional assistance cannot control mussel infestation around public facilities. Such assistance would be provided only with a 50 percent cost share from non-Federal interests.

HEARINGS

The Subcommittee on Water Resources, Transportation, and Infrastructure held two days of hearings on the Water Resources Development Act of 1990 and other related water resources issues. These hearings were held in Washington, D.C. on March 1 and April 19, 1990.

ROLLCALL VOTES

Section 7(b) of rule XXVI of the Standing Rules of the Senate and the rules of the Committee on Environment and Public Works require that any rollcall votes taken during consideration of legislation be noted in the report on that legislation. No rollcall votes were taken on this legislation.

COST OF LEGISLATION

Section 403 of the Congressional Budget and Impoundment Control Act requires that a statement of the cost of the reported bill, prepared by the Congressional Budget Office, be included in the report. A copy of that statement follows:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, June 12, 1990.

Hon. QUENTION N. BURDICK,
Chairman, Committee on Environment and Public Works, U.S. Senate, Washington, DC

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the attached cost estimate for the Water Resources Development Act of 1990.

If you wish further details on this estimate, we will be pleased to provide them.

Sincerely,

ROBERT D. REISCHAUER, *Director.*

CONGRESSIONAL BUDGET OFFICE—COST ESTIMATE

1. Bill number: Not yet assigned.
2. Bill title: The Water Resources Development Act of 1990.
3. Bill status: As ordered reported by the Senate Committee on Environment and Public Works on May 22, 1990.
4. Bill purpose: The Water Resources Development Act of 1990 (WRDA) would authorize the Secretary of the Army, acting through the Corps of Engineers (Corps), to construct 24 projects for flood control, port development, storm damage reduction, and miscellaneous other purposes. The Corps estimates that these projects have a total federal cost of approximately $1.7 billion in 1990 dollars.

Two additional projects for navigation would also be authorized, contingent upon the issuance of final engineering reports by the Corps. The federal costs of these projects is estimated to total $0.1 billion in 1990 dollars.

The bill also contains provisions that modify 11 existing Corps projects, authorize new programs and studies to be carried out by the Corps and other federal agencies, and make changes in certain Corps operating and financial procedures.

5. Estimated cost to the Federal Government: The estimated budget impact of the projects and activities authorized or mandated in this bill, assuming the necessary appropriations, is shown in the following table for fiscal years 1991 through 1995:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated authorization level	106	130	174	155	201
Estimated outlays	61	115	155	156	180

In addition, it is estimated that the Corps would spend approximately $2.6 billion after 1995 to complete construction of these projects.

There are a number of provisions in Title III for which no cost estimate could be made. These include provisions which would: require public review of Corps project eligibility criteria; increase levels of flood protection; adjust nonfederal cost-sharing requirements for projects with military benefits; and add reporting requirements for certain Corps project modifications.

The costs of this bill fall primarily in budget function 300.

Basis of estimate: The Water Resources Development Act of 1986 (Public Law 99-662) set an obligation ceiling for Corps construction activities of $1.8 billion for 1991. Information from the Corps indicates that for that year, obligations for currently authorized projects are likely to meet these targets, leaving no money in that year for funding the new projects authorized in this bill. It is possible that, assuming appropriations were provided for newly authorized projects in 1991, spending for these new projects would displace spending on some already authorized projects. In either case, total spending for Corps construction activities will remain constrained by the obligation ceiling. Consequently, we have assumed that enactment of this bill would result in no additional spending in 1991 for activities covered by the obligation ceiling.

Titles I and II—Project Authorizations

The WRDA authorizes the construction of a total of 26 projects: 13 flood control, 4 port development, 2 storm damage reduction, 2 inland navigation, and 5 miscellaneous projects. In most cases, the WRDA specifies estimated total costs for each project in fiscal year 1990 dollars. Where costs are not specified, CBO has obtained estimates from the Corps to reflect prices in 1990 dollars.

This estimate assumes that the bill will be enacted by October 1990 and that the full amounts authorized will be appropriated to keep all projects on a normal planning, design, and construction schedule beginning in fiscal year 1992. Some of the projects authorized in this bill are still in the study or design phase and will not be ready to begin construction for a number of years. Annual spending needs to keep all projects on track were provided to us by the Corps. These annual outlay estimates were then adjusted for inflation and authorization levels sufficient to cover them were calculated.

For the purposes of this estimate, we assumed that all projects authorized will be constructed. Although many projects in this bill would be subject to sunset provisions, we assumed that all projects authorized and subject to these provisions would receive at least some funding within the stipulated periods.

The budget impact of the project authorizations in Titles I and II is shown in the following table:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated authorization level		38	95	87	136
Estimated outlays		24	73	85	113

In addition, it is estimated that outlays of approximately $2.6 billion would be incurred by the federal government after 1995 to complete construction of these projects.

Title II—Project-Related Provisions

Modifications: In addition to the five new projects authorized in Title II (the costs of which are included in the preceding section), Title II would modify 11 existing projects. Based on information from the Corps, CBO estimates that these modifications would increase federal costs by $17 million in 1991 and by about $69 million over the 1991–1995 period.

Onandaga Lake Restoration Program: Section 205 would establish a management conference for Onandaga Lake in New York. The conference would be authorized to develop a restoration plan for the lake, and to make grants for research, studies, and plan implementation. The section authorizes the appropriation of such sums as may be necessary for the Corps and the Environmental Protection Agency (EPA) to carry out the program. We estimate that enactment of this section would result in additional costs to the federal government totaling about $7 million in 1991 and $17 million annually thereafter.

All American Canal: Section 209 would direct the International Boundary Waters Commission to construct an extension of the All American Canal in Texas. The section authorizes the appropriation of $42 million for construction and such sums as may be necessary for operation and maintenance of the canal and for a study on the impact of the extension. Based on information from the Commission, we estimate that construction costs would be incurred over a three-year period and that operation and maintenance costs would total about $200,000 annually.

Reports and Studies: Title II would authorize the Corps to study: the regulation of the Dworshak Dam in Idaho; drought contingency planning in Minnesota and North Dakota; and six headwater lakes of the Mississippi River in Minnesota. Based on information from the Corps, we estimate that these studies would cost $300,000 in 1991 and $3 million over the 1991–1995 period.

The toal estimated costs of the provisions in Title II (excluding project authorizations) are shown in the following table:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated authorization level	73	57	33	21	18
Estimated outlays	41	60	41	27	21

Title III—General Provisions

Corps Miscellaneous Provisions: Title III contains a number of provisions that would: change certain Corps procedures and activities; allow the Corps to charge user fees for certain activities; extend the Corps' authority to carry out certain emergency and environmental restoration activities; and require the preparation of a study on recreation user fees. We estimate that these changes would increase federal costs by $12 million in 1991 and by $78 million over the 1991–1995 period. Offsetting these costs would be additional annual receipts from user fees totaling $500,000 in 1991 and increasing to $2.5 million by 1993.

Additional costs, which cannot be estimated at this time, would also be incurred as a result of provisons which require public review of project eligibility criteria, increase levels of federal flood protection, adjust nonfederal cost-sharing rates for projects with military benefits, and add reporting requirements for certain project modifications.

MAGLEV: Section 309 would direct the Corps to conduct research and development on magnetic levitation technology. The Corps would also be authorized to design, construct, test, and evaluate various prototypes, including a full-scale prototype system. Such sums as may be necessary would be authorized for these purposes.

Based on information provided by the Corps, CBO estimates that the total cost of a prototype magnetic levitation system would be about $1 billion over eight years. Further, CBO assumed that the federal government would pay 50 percent of these costs, with the remainder to be paid by private industry or state or local governments. Over the next five years we would expect federal costs to total about $80 million. Construction of such a system would probably begin in fiscal year 1996, at which time total costs would increase to $200 million to $300 million per year for two-to-three years. Federal costs in those years would increase commensurately.

Mississippi River Study: Section 321 would direct the U.S. Geological Survey to conduct a study of the water quality of the Mississippi River and would authorize the appropriation of $2 million for this purpose. We estimate that these amounts would be spent over a two-year period, beginning in 1991.

The costs of Title II are shown in the following table:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated authorization level	25	28	39	39	39
Estimated outlays	17	25	33	37	39

Title IV—Zebra Mussel Control Act of 1990

Title IV would authorize the Corps, in consultation with the Fish and Wildlife Service and EPA, to develop a program for the control of zebra mussels in and around infrastructure facilities. A total of $7.5 million would be authorized annually for fiscal years 1991 through 1995: $2.5 million for research and development, and $5 million for state grants.

The budget impact of Title IV is shown in the following table:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Authorization level	8	8	8	8	8
Estimated outlays	3	7	8	8	8

6. Estimated cost to State and local governments: The estimated total state and local share of the projects authorized in this bill is shown in the following table:

[By fiscal year, in millions of dollars]

	1991	1992	1993	1994	1995
Estimated outlays		12	31	38	38

In addition, it is estimated that nonfederal units of government would spend approximately $800 million after 1995 for their share of project costs.

7. Estimate comparison: None.

8. Previous CBO estimate: On May 1, 1990, CBO prepared a cost estimate for S. 221, as ordered reported by the Senate Committee on Environment and Public Works on April 24, 1990. Section 2 of that bill is identical to Section 309 of the WRDA, which authorizes funding for magnetic levitation projects. The cost estimates for these sections are the same.

9. Estimate prepared by: Theresa Gullo and Marjorie Miller (MAGLEV) (226–2860).

10. Estimate approved by: C.G. Nuckols for James L. Blum, Assistant Director for Budget Analysis.

Evaluation of Regulatory Impact

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee has evaluated the regulatory impact of this legislation. No provisions explicitly require that new regulations be promulgated that would directly regulate individuals, consumers or businesses or that would impact the privacy of individuals.

Section 307 requires the Corps to revise "ability to pay" provisions governing the extent to which non-Federal project sponsors may be relieved of paying a portion of the normal non-Federal cost. This will likely require the development of new regulations used by the Corps in making its determinations.

CHANGES IN EXISTING LAW

In the opinion of the Committee, it is necessary to dispense with the requirement of section 12 of rule XXVI of the Standing Rules of the Senate in order to expedite the business of the Senate.

○

HQ AR002812-HQ AR002823

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

25 JAN 1990

CECW-ON

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Overview of Performance Indicators (PIs) for Natural Resources

1. The purpose of this memorandum is to provide a general overview of performance indicators (PIs) relating to the Natural Resources Management program. We have had many questions concerning how PIs were selected, what their purpose is, how and when they are reported, what data source is used, and, most importantly, how you at the division, district, and project level can use PIs to make management decisions.

2. We will be discussing performance indicators at the February 1990 Natural Resources Management Conference in Nashville, Tennessee. Handouts of existing PI summaries, based on 1987 and 1988 data, as well as the WES study on Economic Impacts, will be available at the conference for your review and discussion. PIs are being developed for most program areas in the Corps and are not expected to go away. I feel very strongly, therefore, that we must make them right so they will work for us and not against us. It is imperative that we devote the necessary attention to insure input data to the PIs is accurate.

3. The PIs selected for the NRM program were initially developed and recommended by a committee of field NRM employees and presented to CECW-O for consideration. An executive committee of senior grade field employees then reviewed the PIs for all Operations, Construction and Readiness functional areas, excluding regulatory and readiness. That review resulted in some modifications to and deletions from the initial list of proposed PIs for submission to CECW-O for final approval. After refinement by this office, the PIs were adopted for a ~~three year test period, which ends with FY90~~. As you can tell, considerable effort was expended in attempting to develop meaningful PIs. The original NRM field committee may assist in evaluating progress during the test period and will reconvene to participate in the post-test review.

CECW-ON
SUBJECT: Overview of Performance Indicators (PIs) for Natural Resources

4. The NRM Performance Indicators selected for the initial three year test period are:

a) Completed Operational Management Plans (OMPs)
b) Percent Project Boundary Marked
c) Number of Encroachments - Existing and Resolved
d) Revenues Collected
e) Recreation Statistics, including
   (1) Visitor hours
   (2) Recreation Revenues
   (3) O & M Costs
   (4) FTEs
   (5) Volunteer FTEs
f) Economic Impact per O&M Dollar Expended
g) Visitor Hours per Natural Resource Management Cost

Attached is a summary explanation of each indicator, including a short definition, rationale, and reporting method.

5. Two primary objectives in developing our NRM PIs were to use existing data reporting systems rather than create any new reporting requirements and to institute annual PI reporting for consistency with existing databases and to reduce redundancy. We were successful in meeting these objectives. The majority of our PI input data is reported through the Natural Resources Management System (NRMS), with some modifications as necessary. The revenue information is obtained from ENG Form 3041-R, Report of Real Estate Receipts submitted to HQUSACE Resource Management Directorate, Finance and Accounting Division. The budget information is obtained from the year end COEMIS history file maintained by the budget support elements in CECW-O. All reports are annual, on a fiscal year basis.

6. The primary purposes of the PIs are to celebrate our successes and to measure our performance against that of our peers. They can also provide excellent guidelines for improvement. We can analyze segments of our program to detect areas of excellence and to identify those areas where improvements in efficiency and effectiveness are possible. The indicators can also be used for marketing our facilities and for assisting us in meeting our objective of reducing resource outlays. While the economic impact indicator certainly provides an opportunity to justify our program, we must guard against the perception that is its purpose. If input data is correct and consistency can be achieved in cost codes, the indicators will become effective management tools.

25 JAN 1990

CECW-ON
SUBJECT: Overview of Performance Indicators (PIs) for Natural Resources

7. Of particular interest is the economic impact performance indicator. The study supporting this PI should provide critical information regarding the economic effect of our program. Although the indicator currently describes the effect of consumables only, we expect to expand the study to consider durable goods, as well as the effect on local job opportunities related to our program.

8. We must work together to make the PIs a positive management tool which accurately describes and supports our program. We, in the chain of command, must give the input data sufficient emphasis to insure that it is correct. Additionally, my staff will be reviewing our cost codes for ways to improve and facilitate consistent charging. Please contact me if you have questions, suggestions or problems, or bring them to our conference in Nashville.

Darrell E. Lewis

1 Encl

DARRELL E. LEWIS
Chief, Natural Resources Management Branch
Operations, Construction and Readiness Division

DISTRIBUTION:
(see page 4)

INDICATOR: Completed Operational Management Plans (OMPs)

DEFINITION: This indicator represents the percent of projects within the division having completed and approved Operational Management Plans.

RATIONALE: The Operational Management Plan is a valuable tool in the administration of the natural resources management program. It is the resource manager's plan for the management of the project and contains the details of a [illegible]e and five year work plan. The percent of division projects hav[illegible] completed OMPs is a measure of planning effort and is an indicator of an effective management program.

REPORTING: This data will be obtained annually from the Natural Resources Management System (NRMS). No additional reporting requirement results from the computation of this performance indicator.

INDICATOR: Project Boundary Percent Marked

DEFINITION: This computed indicator is the total miles of marked boundary divided by the total project boundary in the division, shown as a percent.

RATIONALE: Surveying and monumenting of project boundary is an essential management tool in preventing encroachments and other unauthorized use of project lands. The management and protection of Government lands is facilitated by the surveying, marking and maintenance of project boundary. This indicator measures one aspect of efficiency of project management by measuring the relative status of the project manager's primary tool for resolving boundary concerns.

REPORTING: This data will be obtained annually from the Natural Resources Management System (NRMS). No additional reporting requirement results from the computation of this performance indicator.

PERFORMANCE INDICATOR: Number of Encroachments

DEFINITION: This indicator represents the sum of the actual number of existing encroachments and the sum of the actual number of resolved encroachments at all projects in the division during the previous calendar year.

RATIONALE: The number of encroachments is a measure of the difficulty or complexity of project management. This number is affected by the project's land acquisition policy, the degree of adjacent development, the varying definitions of "encroachment" by different real estate offices, and the efficiency of district elements in discovering, reporting and resolving incidents. The number of encroachments resolved is a measure of the effectiveness of the resolution process and the district's efficiency in achieving timely resolution. This indicator, therefore, measures the magnitude, effectiveness and efficiency of the encroachment management program.

REPORTING: This information will be obtained annually from the Natural Resources Management System (NRMS). No additional reporting requirement results from the institution of this performance indicator.

PERFORMANCE INDICATOR: Recreation Statistics

DEFINITION: This indicator is comprised of division totals for the following data from the previous fiscal year:

1. Visitor hours
2. Recreation revenues, including camping fee, specialized facility reservation fee, and special event fee revenues
3. O & M costs, Recreation and Natural Resources
4. FTEs in natural resources positions at project offices
5. Volunteer FTEs doing natural resources work

RATIONALE: This data is indicative of the magnitude of use realized by projects and of the staff and funding available to administer the natural resources program. This information is affected by the character of the projects in the division, their size and the number and type of facilities available. This data considered in concert is a measure of the ability of the division to accommodate project use with the natural resources staff and operations and maintenance funds available.

REPORTING: The information for this performance indicator is obtained annually from the Natural Resources Management System (NRMS). No additional reporting requirement results from the institution of this indicator.

ERFORMANCE INDICATOR: Economic Impact per O&M Dollar Expended

DEFINITION: This indicator is estimated visitor spending per dollar of O&M cost. The indicator is computed by applying a visitor spending factor to visitation, figured two different ways, and dividing the result by recreation and natural resource management related O&M costs. Indicators were computed at the division level using this procedure.

RATIONALE: Visitor spending estimates used in this indicator provide a general indication of economic activity associated with recreational use of Corps of Engineer projects. Dividing visitor spending estimates by O&M costs spent in achieving the economic activity provides a measure of program output. The accuracy of this indicator is dependent on the accuracy of visitation estimates and the variability of visitor spending patterns between user groups and regions.

REPORTING: Visitation used to compute this indicator is figured two ways: 1) the sum of the area visitations for all areas in the Natural Resources Management System (NRMS) and 2) the sum of the area visitations for all Corps managed areas in the NRMS. Dispersed visitation use is not included. The O&M dollar factor is also figured two ways, respectively: 1) the sum of the 06, 11, 16, and 29 accounts for the previous fiscal year and 2) the sum of the 06, 16 and 29 accounts for the previous fiscal year. These are obtained from the history datafile of O&M expenditures, as maintained in CECW-O and derived from the districts' end of the year COEMIS reports. This datafile exhibits some anomalies in certain accounts due to summations, which may require that data for future computations be obtained directly from COEMIS. The visitor spending factor was derived from surveys of visitors to Corps of Engineers projects in the Southeastern U.S. done by Waterways Experiment Station (WES), in conjunction with the Natural Resources Research Program work unit on economic impacts. The factor considers visitor spending on only consumable, not durable goods. WES performs the performance indicator computation annually. No additional reporting requirement results from the computation of this performance indicator.

PERFORMANCE INDICATOR: Revenues

DEFINITION: This is a summary of project revenues summed by division. Revenues included are:

1. Agriculture and grazing lease receipts
2. Commercial concession receipts
3. Housing receipts
4. Private use permit receipts
5. Private recreation receipts
6. Recreation use fee receipts
7. Quasi-public use fee receipts
8. Right-of-way receipts
9. Storage receipts
10. Pay telephone receipts
11. Timber receipts
12. Land or building sales
13. Sand, gravel, etc. sales receipts
14. Crop receipts
15. Hydropower receipts
16. Other receipts

RATIONALE: This information varies widely between divisions, due to the variances in number and size of projects within the division, and the character of the natural resource management program administered at each. The indicator, as a measure of the absolute magnitude of division revenue, is of limited utility for interdivision comparison purposes. It does, however, provide a vehicle for comparing revenue types between divisions.

REPORTING: This information is obtained from HQUSACE Resource Management Directorate, Finance and Accounting Division, as summarized from information submitted by Divisions annually on ENG Form 3041-R, Report of Real Estate Receipts. No additional reporting requirement results from the computation of this performance indicator.

NDICATOR: Visitor Hours per Natural Resource Management Cost

DEFINITION: This indicator is the ratio of visitor hours divided by costs of natural resource management.

RATIONALE: This indicator is derived by dividing the total project visitation by the total expenditure for natural resource management at the project. The values for visitation and costs are summed for the division and the ratio calculated. The resulting indicator is a measure of the visitor hours of use realized per dollar expended.

REPORTING: Visitation used to compute this indicator is derived from the total project visitation reported in the NRMS. Costs of natural resource management are also derived from the NRMS. No additional reporting requirement results from the computation of this performance indicator.

ECONOMIC IMPACTS
FY-89

DISTRICT	VISITOR HOURS	VISITOR EXPENDITURES	RECREATION O&M EXPENDITURES	ECONOMIC IMPACT
Jacksonville	46,750,200	$125,083,855	$903,700	$138.41
Mobile	199,650,353	$535,516,933	$19,284,000	$27.77
Savannah	85,349,331	$201,585,406	$7,486,600	$26.93
Wilmington	53,330,925	$150,462,158	$3,292,800	$45.69
SAD Total	385,080,809	$1,012,648,352	$30,967,100	$32.70

HQ AR002824-HQ AR002962

Water Resources People and Issues

Interview With

Professor Arthur Maass

US Army Corps of Engineers

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Water Resources
People and Issues

INTERVIEW WITH PROFESSOR ARTHUR MAASS

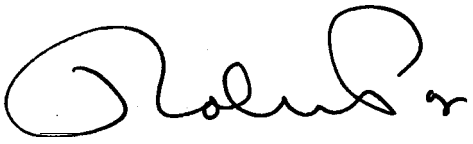
by
Martin Reuss

Office of History
United States Army Corps of Engineers
Fort Belvoir, Virginia
1989

Foreword

The history of water resources in the United States is long and complicated. The issues are complex and will no doubt remain that way, for problems dealing with water quality and quantity are not always easily resolvable. They involve overlapping jurisdictional, technological, and political questions. For more than forty years, Professor Maass has attempted to rationalize water management in such a way as to provide needed benefits in a cost effective manner. He has heavily influenced the Corps and other water agencies, both federal and nonfederal.

This interview and the accompanying articles provide an overview of Professor Maass's thoughts and insights into the evolution of his ideas. As we look toward the 21st century, it is important to keep in mind the steps that we have taken in the last half of this century to resolve our water problems. Professor Maass has been in the forefront of these efforts.



ROBERT W. PAGE
Assistant Secretary of the Army
(Civil Works)

The Interviewer

Dr. Martin Reuss is the senior civil works historian in the Office of History, Headquarters, U.S. Army Corps of Engineers, where he specializes in the history of flood control, navigation, and hydraulic engineering. He is the author of Shaping Environmental Awareness: The United States Army Corps of Engineers Environmental Advisory Board, 1970-1980 and has contributed articles to a number of journals, including Technology and Culture, The Public Historian, Louisiana History, Military Review, and Environment.

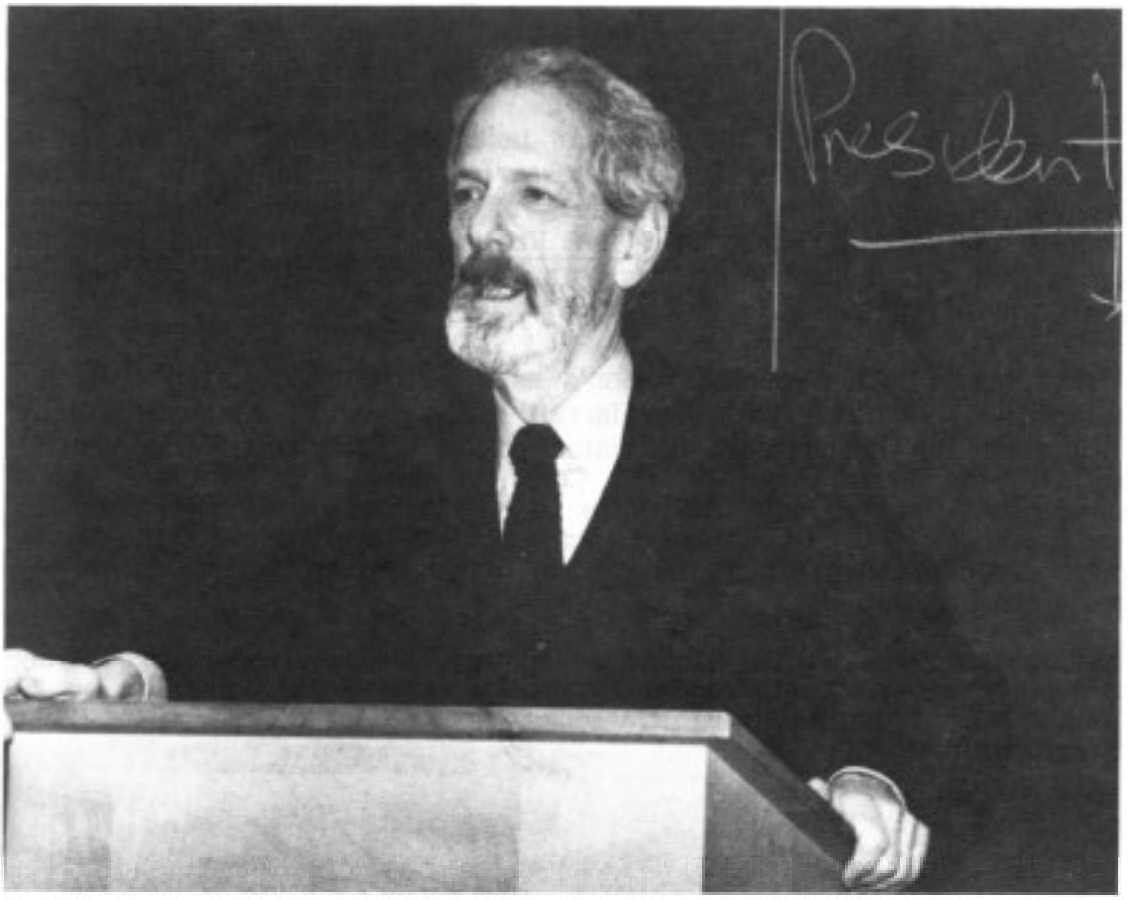
Preface

At a time when serious questions are being raised about the manner in which the nation utilizes its water resources, it is important to gain the insights of past leaders in the field of water resources development. This is the second volume of Water Resources People and Issues, a series that will include interviews with individuals both inside and outside the Corps of Engineers.

Arthur Maass is one of the nations most distinguished water resources authorities. Working with his Harvard colleagues, he has substantially influenced the development of water policy in the post-World War II period. An early critic of the Corps of Engineers, Professor Maass subsequently worked with the Corps to help improve planning procedures and methodologies. I recommend this interview to all those in the Corps, both civilian and military, who wish to understand better our water resources program.

Dr. Martin Reuss of the Office of History, Headquarters, U.S. Army Corps of Engineers, interviewed Dr. Maass at Harvard University on 20 May 1983. The following transcript is an edited version of that interview.

H. J. HATCH
Lieutenant General, U.S. Army
Commanding



Professor Maass

Biographical Sketch

Arthur Maass was born 24 July 1917 at Baltimore, Maryland, the son of Arthur Leopold Maass and Selma (Rosenheim) Maass. He remained in Baltimore through his undergraduate years, receiving his A.B. degree from Johns Hopkins University in 1939.

Upon graduation, Maass went to Washington as an intern for the National Institute of Public Affairs and served as an administrative assistant at the Bureau of the Budget, assigned to the Division of Administrative Management. He served in that capacity until mid-1940, when he received a fellowship to Harvard's Graduate School of Public Administration. The following year, he received his M.P.A. degree from that university.

After completing his work at Harvard, Maass returned to the government as a research technician for the National Resources Planning Board, a position he held until he entered the Navy in 1942. At the conclusion of his military service, in 1946, he spent a short time as a Navy Department budget analyst, then resumed his studies at Harvard.

Maass received his Ph.D. in political science in 1949. The previous year he had been appointed to the faculty of the Department of Government at Harvard University. In 1954, he was awarded full tenure. From 1954 to 1959, Dr. Maass was secretary of the Graduate School of Public Administration, and from 1955 to 1965, he served as director of the Harvard Water Program. During this time, he coauthored Design of Water Resource Systems: New Techniques for Relating Economic Objectives, Engineering Analysis, and Governmental Planning. This book promoted the use of computer simulations, mathematical modeling, and multiobjective economic analysis and planning to resolve complicated questions dealing with the design of water resource systems. In 1963, Professor Maass became chairman of the Department of Government, a post he held until 1967. Dr. Maass has received many honors during his distinguished career, including a Guggenheim Fellowship in 1955, the Clemens Herschel Prize of the Boston Society of Civil Engineers in 1958, a Fulbright Faculty Research Fellowship in Spain in 1960-1961, a Social Sciences Research Council Fellowship in 1961, and his appointment, in 1967, as Frank G. Thomson Professor of Government. He retired in 1984.

Perhaps Dr. Maass's greatest impact came with the 1951 publication of his book, Muddy Waters, aimed at the prevailing practices of the Army Corps of Engineers. His critique of Corps methods led to a reevaluation by the Corps of its policies and to the inclusion of Dr. Maass and other social scientists in the public works planning process.

Dr. Maass has been quite active beyond his Harvard duties. As early in his career as 1948 he was appointed to the First Hoover Commission as a

water resource analyst for the Natural Resources Task Force. He was director of the survey unit on conservation and development for Connecticut% Little Hoover Commission in 1949-1950 and served in an identical capacity, in 1950-1951, for Massachusetts* version of the same organization.

Throughout his academic career, Dr. Maass has been called upon to share his expertise in water resources development and administration. He has been a consultant for the Office of the Director of the Budget (1949), the Office of the Secretary of the Interior (1950-1952), the President's Materials Policy Commission (1951-1952), the Tennessee Valley Authority (1952), the Chief of Engineers, U.S. Army Corps Engineers (on a periodic basis, 1961 to present), the Bureau of Reclamation (1971), and the Ministry of Water Conservancy of the Peoples' Republic of China (1980 to present).

In addition to Muddy Waters and Design of Water Resource Systems, Dr. Maass has published other books and studies, among them Area and Power: A Theory of Local Government (1959), and the Desert Shall Rejoice: Conflict, Growth, and Justice in Arid Environments (with Raymond L. Anderson, 1978, (1986), and Congress and the Common Good (1983). Dr. Maass is also a regular contributor of scholarly articles on the subjects of water resources, public investments, and executive-legislative relations in the United States.

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INTERVIEW WITH PROFESSOR ARTHUR MAASS

Q: Professor Maass, by way of going back and just recapitulating some of the things that you have been involved with in your life--with water resources development--maybe we can start things off by talking about how you got involved in water resources, how you came to write Muddy Waters, and a little bit about your earlier career.

A: All right. I graduated from the college at Johns Hopkins University in 1939. I had been a student of V.O. Key and at his suggestion went to Washington for a year as a National Institute of Public Affairs intern. I was assigned to the Division of Administrative Management of the Bureau of the Budget, which only that year had been transferred from the Treasury Department to the newly created Executive Office of the President.

The Reorganization Act of 1939 gave President Roosevelt authority to propose reorganization plans to Congress, and the President asked his Cabinet officers to propose such plans to him. These would be reviewed by the Bureau of the Budget. I was put to work on the proposals of Secretary of Interior Ickes that the U.S. Forest Service be transferred to the Interior Department from the Department of Agriculture and that the civil functions of the Corps of Engineers be transferred to his department from the Department of the Army. That was my introduction to the activities and operations of the Army Corps of Engineers.

After the one-year internship in the Bureau of the Budget, I accepted a Harvard fellowship at the Graduate School of Public Administration, where I continued my interest in water resources while earning an M.P.A. degree. After one year at Harvard I returned to Washington to work for the National Resources Planning Board, which had been transferred to the Executive Office of the President at the same time as the Budget Bureau, and there I was able to further my interest in water resources programs. But that didn't last long, for soon after war was declared I joined the Navy, in which I served for a little over four years. Concluding naval service in 1946, I resumed studies at Harvard as a graduate student and took up again my interest in water resources, but more largely from an academic perspective.

My first book was called Muddy Waters: The Army Engineers and the Nation's Rivers. It was an administrative study of the civil functions of the Army Corps of Engineers. Although it was published by Harvard University Press in 1951, it was completed essentially as a Ph.D. thesis two years earlier. And some of its findings were published earlier, in an article in Harper's magazine of August 1949, "The Lobby That Can't Be Licked: Congress and the Army Engineers." This was written jointly with Robert De Roos, who was then a Neiman Fellow at Harvard, and its style is considerably more "popular" than I have used subsequently.

Also, before the book was published, but based on its analysis and findings, I was appointed to the research staff of the Natural Resources

Task Force of the first Hoover Commission, which was chaired by ex-Governor Miller of Wyoming. There I helped to write the sections of the task force report which deal with water resources, including a lengthy case study of conflict between the Corps, the Bureau of Reclamation, President Roosevelt, and the Congress over the Central Valley of California. The task force report was published in January of 1949, almost two years before the book.

The principal criticisms of the Corps of Engineers contained in Muddy Waters, to a certain extent in the task force report of the first Hoover Commission, and in a brassier form in the Harper's article, were really two. First, that the Army Corps of Engineers was not a responsible administrative agency because its leaders did not consider themselves to be directly under the supervision of the President of the United States. They called themselves "engineer consultants to the Congress of the United States," and their principal accountability, as they saw it, was to the congressional committees that had responsibility for authorizing studies and the construction of water resources projects. I criticized this unusual pattern of executive-legislative relations, involving, as it did, relations between an executive agency and a congressional committee that were so intimate that the President and the Executive Office of the President were virtually excluded from decision making and had little authority over the Corps.

My second principal criticism of the Corps was that it was overly conservative in the professional standards that were used to plan and design water resource systems. The Corps was oriented very much toward single-purpose projects, either for flood control or for navigation, and had failed to endorse enthusiastically the concept of multipurpose development exemplified in the exciting work of the TVA [Tennessee Valley Authority].

Based on this analysis and other considerations, the Hoover Commission task force recommended that the civil functions of the Army Corps of Engineers be transferred to the Department of the Interior and consolidated with those of the Bureau of Reclamation. There is a lengthy justification in the report for this recommendation, which I need not repeat here.

The Chief of Engineers at that time was General Pick. He took strong, very strong, exception to what I had said, as well as to other criticisms of the Corps that had begun to surface at the same time. His objections were stated most emphatically in testimony before a Special Subcommittee to Study Civil Works of the House Committee on Public Works, chaired by Congressman Robert Jones of Alabama. This sub-committee was established in response to the Hoover report and recent criticism of the Corps, and it provided the Corps an opportunity to respond. For this purpose the Corps prepared for the committee a lengthy report (subsequently published as Volume 3 of Part 1 of the 1951 Annual Report of the Chief of Engineers) which, most notably in Appendix B, responded to the criticisms of my book.

In the committee% hearings in April 1952, General Pick made some rather strong accusations against me for publishing this book. I won't repeat

them here, for they are available in the published hearings of the subcommittee. But I thought when I heard them (I was in the hearing room at the time), and have continued to believe, that the charges were entirely unjustified. In a letter to Congressman Jones, I subsequently made two points concerning General Pick's testimony.

First, the general said that he was positive that influential people who were interested in changing federal policy or attempting to usurp power themselves had been instrumental in getting books like mine written. I found the charge that I had been influenced to write a book for the purpose of supporting the objectives of an outside power-seeking group, rather than for the purpose, as I saw it, of discovering truth through impartial analysis of available data, to be a most serious charge. Furthermore, I believed that my profession had high professional standards and ethics, not unlike the general's view of his own profession.

It is true, of course, that my conclusions were approved and even publicized by outside groups, some of whom had objectives with which I agreed. But this would have been equally true, if, after a careful examination of the evidence, I had come to the opposite conclusion, that the Corps had over the years and in all cases developed the nation's water resources in accord with the most desirable standards.

Q. Did anybody ever accuse you of being a Communist as a result of your book, or of having "pinko" tendencies? Do you recall anything about that?

A: The general stated in his testimony that I was a member of a small and effective group who had been able to gain access to the archives of this great government of ours, to select and use to their advantage the information which can be found in the writings and sayings of governmental leaders that is not generally available to all of the people of the United States. Of course, this was absurd; my access was to public documents available to anyone. So there was an element of conspiracy theory in that comment, but I don't recall that General Pick ever accused me of being a Communist.

To repeat, the reason that the Jones subcommittee held these hearings was that the conclusions I had published in Muddy Waters and similar conclusions in other reports and articles had come to be repeated many times, and both the Corps and the committee felt that it was important to give the agency an opportunity to defend itself against these criticisms.

Soon thereafter, President Truman undertook to draft reforms in the resources area, based on the Hoover Commission reports. While teaching at Harvard, I was called in as a consultant to the Office of the Secretary of Interior to work on proposals for reorganization in the water resources field. I worked then with Joel Wolfson, Al Wolf, Maynard Hufschmidt, and ultimately Oscar Chapman, who was then Secretary of the Interior.

We developed a plan that would transfer the civil functions of the Army

Corps of Engineers to the Interior Department, to be merged with those in the Bureau of Reclamation. This plan was sent to the White House, and, to my secondhand knowledge (I have no firsthand knowledge of this), they had been approved tentatively by President Truman, when there occurred a great flood on the Mississippi and Missouri rivers.

In response to that natural disaster, President Truman flew over the flooded area with General Pick. As a result of this flight and subsequent meetings and activities, the President backed away from the proposed reorganization plan. It was never presented in Congress. It was aborted.

After General Pick retired, the Corps of Engineers rapidly changed its attitude concerning its responsibilities to the President and to Congress. The Corps decided that it was in fact a part of the executive branch of government. It began to cooperate with the Executive Office of the President and to report to the President directly and to the Congress only through the President rather than, as previously, reporting directly to the Congress.

When the Corps of Engineers changed its attitude, so did the congressional committees. They no longer expected the Corps to be the engineer consultants to and contractors for the Congress of the United States, which had been the justification for direct relations, but to report to Congress through the President. With these important developments, the case for reorganization became much, much less pressing in my view than it had been before. I lost interest in reorganization--although I did come to be marginally involved in two subsequent efforts, in 1966 and 1970--and began to believe that there were alternative and more effective ways to solve the problems that remained, as I saw it, in the government's programs for water resources.

My interest then changed from these organizational questions to the question of how to design multipurpose, multiobjective water resource systems. That change was signaled by the formation of what came to be known as the Harvard Water Program. This was a multidisciplinary research and training program, with faculty representing hydrology and engineering, principally Professor Gordon Fair, the elder statesman of the group; Professor Harold A. Thomas, Jr.; and their student, Professor Myron B. Fiering. Representing economics there were Professor Robert Dorfman and Professor Stephen A. Marglin, then a young student. Dr. Maynard Hufschmidt, who was then working in the program staff of the Interior Department and had previously worked in the National Resources Planning Board and the Budget Bureau on water resource problems, came to Harvard to be research director of this program. I was the faculty chairman.

In planning this multidisciplinary study of water resources, we explicitly eschewed any concern for government organization and reorganization which had consumed so much intellectual effort in previous years. We were going to study how to design complex water resource systems in the light of new techniques of analysis that were only coming to be applied to economic production functions and that involved simulation with high-speed computers, linear programming, and optimizing mathematical models.

The first results of this study were published in 1962 in a large book called Design of Water Resource Systems: New Techniques for Relating Economic Objectives, Engineering Analysis and Governmental Planning. This book, I think I can say (since I was only one of several authors), had a tremendous impact in the fields of public investment economics, engineering design, and hydrology. As I see it, there were three principal contributions from this first stage of the Harvard Water Program.

First was the use of simulation by computer to design water resource systems. We were, so far as I know, the first group to use simulation on high-speed digital computers to examine the economic as well as the physical consequences of alternative designs of such systems. Prior to this time there had been one or two simulation studies conducted entirely in physical terms, where the purpose was to find, for example, the best alternative design in terms of the number of kilowatt-hours that could be produced from a series of dams in a river basin.

Ours was much more complex than this, for our simulations included benefit, cost, and economic loss functions for multiple purposes of development (for example, electric power, irrigation, flood control) and multiple objectives of development (for example, national income, income redistribution). This contribution was reported initially in Design of Water Resource Systems and was further elaborated in a subsequent volume authored by Maynard Hufschmidt and Mike Fiering, Simulation Techniques for Design of Water Resource Systems.

A second major contribution was the development of synthetic or operational hydrology as a means for designing water resource systems. The point was this: Having developed methods to design systems with the aid of high-speed digital computers, we could use more hydrologic data than frequently were to be found in the historical record. The method then used by hydrologists in the Corps and elsewhere to construct a record longer than the historical record was simply to repeat the historical record or otherwise to manipulate it marginally.

Our hydrologists were convinced that the likelihood that an historical record will repeat itself is very low. One can take the basic data which constitute the historical record, mix them up in ways known to those who, like Thomas and Fiering, are familiar with the most sophisticated statistical techniques, and produce a synthetic record of streamflow that is more likely to represent the future than any repetition of the historical record. Having done this, you have a self-generator of hydrologic data that will produce as many years or hundreds of years of data as may be needed to compare alternative designs. This contribution, too, was reported in Design of Water Resource Systems, and it was developed further in a subsequent book by Fiering, Streamflow Syntheses.

The third contribution-which may be the. most important--was the development of multiobjective economic analysis and planning, which, it should be noted, is not the same as multipurpose planning. Multiobjective planning focuses on such objectives as economic growth, regional income distribution, and environmental quality, whereas multipurpose planning

relates to such purposes as flood control, navigation, and irrigation. Until then the design of water resource systems had been in terms of a single objective, namely maximizing economic growth. Other objectives, if they were taken into account at all, were never included in the basic analysis. They were discussed, usually nonquantitatively, in additional paragraphs in committee reports, that is, paragraphs added to those containing the principal analysis which was in terms of the single objective of economic growth.

We were convinced that this was wrong and that we now had available the techniques that would enable us to construct multiobjective planning functions and to design complex systems in terms of such functions. We did not pretend to prescribe the relative value that should be placed on each objective in a multiobjective function. But we believed that such values could be elicited in a political decision process involving the executive and Congress. What we did demonstrate was that you could design a complex water resource system in terms of a complex objective function.

This contribution was also presented initially in Design of Water Resource Systems. It was subsequently elaborated in a book by Professor Marglin, Public Investment Criteria; in two articles that I wrote, one in the Quarterly Journal of Economics and one in Public Policy; and in a monograph by Dr. David Major entitled Multiple-Objective Water Resource Planning.

It is interesting to note that the Corps of Engineers cooperated with the Harvard Water Program from the beginning and, indeed, became the leader among federal agencies in trying to develop and apply the new techniques.

Thus, the criticism of my first book, Muddy Waters, that the Corps had been backward in professional standards, that it was not as interested in multipurpose planning, which was then the new technique, as were other agencies--this criticism had by now come to be outdated. The Corps' enthusiastic cooperation in the development of new methods of planning proved this to me.

And there is other evidence of this. At about that time, I believe, the Corps organized its own research institute to carry on some of these studies, the Institute for Water Resources. One of the institute's senior officers was Colonel Charles Eshelman, who had been associated with the Harvard Water Program.

Also, I should have mentioned that in the years 1956-1958 the Corps assigned several of its senior civilian employees to the Harvard Water Program, as did certain other agencies, to help us in working out these techniques. Ed Landenberger was one, and there were a number of others.

With respect to the specific design techniques developed by the Harvard Water Program, the chief hydrologist of the Corps, Leo Beard, was not initially prepared to accept synthetic hydrology. He said we couldn't prove that a streamflow record like the synthetic one had occurred or

ever would occur. Indeed, it hadn't, for we mixed up the historical record and produced from it a synthetic one. Most of the hydrological community initially shared Beard's concerns about this new technique.

But soon, with some proselytizing by Thomas and Fiering, the technique came to be accepted. The Corps adopted it as quickly as any agency, I believe.

Next, with regard to multiobjective planning, the Corps climbed on board very quickly in the sense of making a major effort to see if this technique could be used in project planning. At that time the Corps was developing a special report on water resources in Appalachia, and for it they used mulitobjective planning.

Furthermore, the Corps was the lead agency in a large interagency framework study of water resource development in the entire North Atlantic region from Richmond to Maine. It was called the North Atlantic Framework Study. In that study there was a herculean effort--largely successful, in my view--to apply multiobjective planning. As a member of the advisory committee for the framework study, I helped to push the concept, and one of the best of the next generation of young scholars to come out of the Harvard Water Program, Dr. David Major, went to work on the study, directing the staff effort to apply multiobjective analysis. Major subsequently worked for the Corps in the Institute for Water Resources.

Furthermore, Steven Dola, who had been at Harvard during the years when we first developed these techniques, took a job in the Office of the Chief of Engineers, and subsequently in the Office of the Assistant Secretary of the Army for Civil Works, principally to apply these methods to Corps planning.

Finally, in the late 1960s and early 1970s the Water Resources Council developed a set of proposed standards and criteria that were to be used by all agencies in the design of water resource systems. These were fashioned around the technique of multiobjective planning, and the Corps of Engineers was, I would say, the lead agency in helping to define the new standards and criteria.

By this point, to repeat, my principal criticisms of the Corps in Muddy Waters had been well responded to. The Corps had become a leader in developing professional standards, and the Corps had also become as cooperative as any federal agency with the Executive Office of the President in clearing its projects and helping to develop a presidential program for water resources.

At this point, as I saw it, the main obstruction to the adoption of forward-looking, state-of-the-art techniques for the development of water resources was not the Corps of Engineers but the Office of Management and Budget. They strongly resisted multiobjective planning and frustrated the efforts of the special task force established by the Water Resources Council to rewrite the standards and criteria. OMB feared that if multi-objective planning were used it might result in greater demands for federal funds for water resource development, and that this was to be

avoided at all costs, even if multiobjective planning was more responsible than planning for the single objective of increasing gross national product. I supported this conclusion in an article on public investment planning which appeared in the journal Public Policy in 1970.

I realize now that I have failed to mention an important consideration relating to cooperation between the Corps and the Harvard Water Program. After the program concluded its first phase in **1962,** the **Corps** of Engineers entered into a contract with the Harvard Water Program to study application of the new planning techniques that were presented in Design of Water Resource Systems--the application of these to the water resource planning process of the Corps of Engineers. Maynard Hufschmidt led the study, and I like to think that, to a certain extent, the resulting report influenced the Corps' planning process.

Now let me change the focus a bit to say a few words about my consulting for the Corps subsequent to my participation in the Harvard Water Program. First, the Office of the Chief of Engineers established in 1965 or thereabouts a civil works study board under the direction, as I recall, of Alfred B. Fitt, who was a special assistant to the Secretary of the Army for civil functions. I consulted that study board on its recommendations, and my contribution can be found in the board's report.

In 1968 I consulted with the Office of the Chief of Engineers on a study of alternative institutional arrangements for managing river basin operations. I worked fairly closely with Colonel Robert Werner, who was in the Office of the Chief of Engineers. The recommendations that I made, which can be found in the reports of this study, concerned principally organization for river basin development.

In this same line of consultations with the Office of the Chief of Engineers, I was appointed a consultant to a task force on civil works planning, established in **1970** or **1971** and chaired by Brigadier General Robert Mathe. Here again, I think that anyone who is interested can see what contribution I made to this study by reading the task force report.

In April of 1970, Atlantic Monthly featured an article by Elizabeth Drew, entitled "Dam Outrage: The Story of the Army Engineers? I was outraged by this piece and undertook, after consultation with the editor of the Atlantic, to write a response. For this purpose, and in response to my request, the Office of the Chief of Engineers sent me considerable data. With those data in hand, I wrote the reply. The Atlantic, for their own reasons, refused to print it, whereupon Representative Ed Edmundson of Oklahoma entered it in the Congressional Record for December 22, 1970. I felt that Mrs. Drew was going back to criticisms of the Corps that might have been applicable in 1945 but were scarcely relevant in 1970. My reasons are spelled out in detail in that issue of the Congressional Record.

Let me conclude this imperfect summary of my relation to the **Corps** of Engineers in recent years by referring to the book published in 1971 by Arthur Morgan entitled Dams and Other Disasters. In that book Morgan accuses me of changing my views about the Corps of Engineers because the Corps had employed me as a consultant and contributed to the

Harvard Water Program. Obviously, I believed that this was entirely unfair. Morgan also attacked Dr. Gilbert White in this book in ways that seemed to me to be equally unjustified.

Morgan had previously written me, as early as 1965, for my views about the Corps, and I had responded to him at great length, telling him why my views had changed since publication of Muddy Waters and precisely on which points they had changed and on which they had not. Several years later Morgan sent a research assistant to interview me on the same subject. I tried to talk to this young man rationally but apparently without success. My impression is that Morgan's mind was fairly well closed; he was not prepared to entertain data or views in conflict with those he had learned many years before.

At that time, I received a letter from Lieutenant General Clarke, Chief of Engineers, expressing his concern about Morgan's unkind comments about White and me. I recall responding to General Clarke something to this effect: that Morgan had always had two sides, one creative, the other destructive. As Francis Biddle, who was chief counsel of the congressional committee that investigated FDR's firing of Morgan from the TVA, had said of him, "Morgan has the strength and the smaller weaknesses of the American zealot."

Like Gilbert White, I had tried in correspondence and by talking to one of his research assistants to encourage Morgan to look afresh at the Corps today, but he appeared only to have resented these efforts and searched instead for conspiratorial explanations for them, such as the suggestion that I had been bought off by the Corps consulting fees. The Congressional Joint Investigating Committee of 1939, to which I have referred, was "forced to conclude that there were differences of opinion on the TVA board which became exaggerated out of all proportions because of the Chairman's [Morgan's] propensity for attributing moral delinquencies to anyone who opposes him." The old boy hadn't changed.

As for reasons for changing my view of the Corps, I have indicated these earlier in this interview. I also summarized them in a lengthy footnote (number 7) to the 1970 article on public investment planning in Public Policy. Anyone who would like further explanation of why my views changed can see that article.

Q: Professor Maass, I've got some specific questions about your particular work, and then some more general questions about water resource development, and I'd like to have your comments on them.

First of all, turning to your own work, in particular Muddy Waters, I'd like to go back for a moment and capture the mind set in which you wrote that book. A few things occur to me. You asked, evidently, Harold Ickes to write the foreword to the book. The foreword is, to say the least, rather strident in condemning the Corps of Engineers. Your book, of course, is scholarly. Did you ever regret having Ickes write that foreword?

A: I guess the answer is no, but I probably would not do it today. Because of Ickes' foreword the book got public attention, but this

probably is not a good justification. Ickes's foreword was typical of his mind set and style. He was a very colorful man, and he frequently overstated his case. I thought everyone would take it as such and would not expect a foreword by Ickes to be as dull and as balanced as a scholarly study might be.

Q' Did you ever figure out whether you were quoted more or Ickes was being quoted more from the foreword in various reviews?

A' Yes, that depended on the medium. The daily press gave greater notice to Ickes, but the scholarly journals paid little attention to his views.

It is interesting, though, that when Ickes first wrote his introduction he included several long paragraphs on his objections to the Chicago Drainage Canal, which I had not mentioned in my book and which had little relation to the book. This had been a concern of Ickes when he lived in Chicago. The problem for me was how to get those paragraphs out of the foreword. It wasn' t easy for me--indeed, for anyone--to make such a suggestion to Harold Ickes So I had to work through people whom I knew a little better; namely Mike Strauss, the Commissioner of Reclamation, and Joel Wolfson, the Assistant Secretary of Interior. They agreed to suggest to Ickes that he cut the material on the Chicago Drainage Canal. He raised a terrible fuss but agreed finally to strike the paragraphs and allow me to "publish his dog with its amputated tail. He was a colorful character.

Q' You made in your book several major criticisms of the Corps: lack of responsiveness to the executive branch, conservatism in professional standards, and also the refusal to endorse multipurpose river development. Now I would like to talk about the last two, mainly. This conservative approach in professional standards--when you wrote the book, did you ask whether there was a good reason for the Corps to be conservative in its professional standards, considering its flood control responsibilities and the consequences if a dam collapsed?

A' One could argue that I wasn't sufficiently sympathetic to the conservative orientation of engineers, which results in part from the fact that they can be held to account for their errors. A social scientist will commit errors of interpretation in an article and then simply admit to them in a subsequent article. If, on the other hand, an engineer makes a mistake and his structure collapses, It's much more difficult for him to explain it away. And I probably was not as sympathetic to that source of conservatism as I should have been.

But I don't believe that in fact I criticized the Corps very much for its conservatism in design of structures, such as would be observed in overbuilding. There was a little criticism of this, but not much. My criticism that the Corps was overly conservative related to the fact that they failed to take into account planning purposes other than protection against floods and improvement of channels for navigation. They were unsympathetic to multipurpose planning as it had been developed by the TVA and was being used by the Bureau of Reclamation.

Q: This conservative engineering approach, of course, is part and parcel of this perhaps lack of sympathy with the multipurpose approach. You can look into transactions of the American Society for Civil Engineering in the 1930s and 1940s and come across engineering articles by people throughout the Corps who claim that you cannot, dfor instance, run a viable flood control program and also have a multipurpose project because the flood control reservoir has to be empty, your reservoir for navigation has to be full, and so forth.

A: Yes.

Q: Again, in light of those kinds of engineering concerns, do you feel that perhaps there was some justification for the Corps being conservative in refusing to accept with open hands the multipurpose concept?

A: Certainly they were justified in demanding that the advocates of multipurpose development come up with proof that storage space could in fact be used for more than one purpose. But I also think that the Corps was insufficiently receptive to suggestions about how that could be done.

You will recall that the Water Resources Committee of the National Resources Planning Board (the secretary of that committee was Gilbert White, and the chairman was Abel Wolman, a very fine civil engineer) concluded in several reports that much more could be done on joint use of reservoir space and conjunctive use of physical facilities than the Corps was willing to admit.

I must say that, at the time, I was much impressed by those reports in this regard, and I think that if the Engineers in the Corps today were to read again those reports of the late 1930s and 1940s, they might be surprised that their predecessors had opposed them so vigorously.

Q: Do you think some of the Corps' reluctance to embrace multipurpose river development had something to do with this upstream-downstream controversy that was taking place at the time, in other words, the tug of war between the Soil Conservation Service and the Corps?

A: Certainly that was part of the story. Those who proposed that we could solve the flood problem by upstream measures principally or exclusively exaggerated tremendously the possibilities of their program, and the Corps was right in pointing out the deficiencies of their analysis and claims. But then, as a reaction, the Corps became a little too vociferous in their opposition to upstream watershed programs.

In 1954 I wrote a lengthy article entitled "Protecting Nature? Reservoir" (published in Public Policy), in which I analyzed the upstream-downstream question.

The controversy between dams and watersheds originated, you will recall, with the Flood Control Act of 1936, which provided that investigations and improvements of rivers for flood control were to be under the Corps, while those for retarding water flow on upstream watersheds should be

under the Department of Agriculture. Between 1936 and 1954 the Corps and USDA [U.S. Department of Agriculture] were unable to agree on how to allocate the benefits of these two programs, that is, on the relative contribution to the prevention of flood damages that should properly be attributed to dams and to watershed programs. Some who called themselves conservationists at the time exacerbated the disagreements, making it more difficult for the agencies. For example, there was Elmer Peterson's book, Big Dam Foolishness, with a fiery introduction by Paul Sears.

The SCS's [Soil Conservation Service] involvement in the planning and installation of upstream structure and farm conservation practices for flood control was greatly accelerated nonetheless in 1954 with passage of the Small Watershed Act.

Q: In making a recommendation that the Corps' civil works function be transferred to the Department of the Interior, was the recommendation made mainly because you thought it to be just good government policy to put water resources development in one agency, or was it made because you felt that the Department of the Interior simply was more competent in dealing with water resources?

A: I think it was a little bit of both. One should keep in mind that reorganization transferring bureaus around from one department to another, was a trendy idea at that time. The broad justification for such reorganization had been developed by the Brownlow committee in 1937, and the Reorganization Act, which authorized the President to propose plans to transfer and consolidate bureaus, was passed in 1939.

Certain agencies were exempted from the President's authority, among them the Corps of Engineers. But that didn't mean that the President could not submit a legislative proposal to transfer the Corps of Engineers to the Interior Department and combine it with the Bureau of Reclamation. Secretary Ickes recommended such a reorganization to the President, and it was studied by the Budget Bureau. But before Roosevelt took any action, World War II intervened. It was not until after the war that attention was again focused on possible reorganization of the government for water resources development. This, then, was the environment for deliberations of the first Hoover Commission.

At the time, my convictions were based on two factors: one, that the Corps of Engineers was operating independently of the President and of the executive branch.

A: second and closely related factor was the backwardness of the Corps, at least as some of us saw it, in some of its professional standards, most importantly its failure to endorse the TVA concept of basin-wide planning and multiple-purpose planning. As I document in Muddy Waters, the Corps had fought pretty strenuously right down the line the National Resources Planning Board's recommendations for a new approach to river basin planning.

If one agreed--as I did--with the Planning Board in promoting integrated, multiple-purpose development of water resources, involving more than

simply flood control and navigation, which were the principal purposes of the Corps' planning at that time, then one way to force such broader water resource planning was to place the Corps under the President's authority.

Q Of course, the Corps did get involved in basin-wide planning with the Pick-Sloan plan in the Missouri River, and by the late 1940s you have basin-wide studies of the Columbia being done.

A The Corps was directed from outside to cooperate in those studies. I don't know that they necessarily wanted to do them. I think President Roosevelt ordered the Corps under General Pick and the bureau under Sloan to get together and come up with a single Pick-Sloan plan. There had previously been a Pick plan and a Sloan plan if I recall correctly.

Q True.

A The same was true in the Columbia basin. The Corps didn't go into cooperative planning very willingly. A lot of effort was lost in the frictions that were present among federal agencies.

Q You mentioned before that in the mid-1950s the Corps started to change from an agency that thought of itself as mainly responsible to Congress to an agency that thought of itself as a responsible executive agency.

The question is, do you feel that this was done consciously by the Corps, or was this done basically to the Corps by other agencies, in particular by the Bureau of the Budget, which at that time in the Eisenhower administration was looking for cost cuts wherever it could. The Corps was basically in a very defensive posture, versus the Bureau of the Budget.

A The latter certainly was one point, but I honestly think that there was a conscious effort by the Corps. I don't know about this for sure, but I have always had the feeling that some members of the Corps were just a little embarrassed by General Pick's last years in office, when he took so strong a position against proposals for change, and it was my impression that the next Chief of Engineers after Pick-1 can't remember his name.

Q After Pick, it was Sturgis.

A Sturgis, yes. I had the impression from talking to General Sturgis that he consciously wanted to get the Corps on a different track.

At the same time, the noteworthy changes between 1948 and 1968 in the attitude and policy of the Corps of Engineers was due to several factors apart from the personalities of the Corps' leaders. The Corps decided in the middle 1950s to cooperate with, rather than to oppose, constructive critics in the academic community. That was when they became a principal cooperator in the Harvard Water Program here.

Also, there was increasingly effective control by the Bureau of the

Budget over the legislative programs of all executive agencies, which is the factor that you mentioned. And the Corps began to feel a need for broader support in the executive, due, in addition to the factors above, to the relative decrease in significance of water resource development in the sum of federal programs and to the degrading of the Corps' representation at the Cabinet level.

With the merger of the Department of the Army into the Department of Defense, the Corps' nominal civilian and political representative, the Secretary of the Army, lost Cabinet status, and the Secretary of Defense had little time for, or interest in, the Army's civil functions. At the same time, the Secretary of the Interior had become more than ever the President's spokesman on water resources.

These, then, were the factors that accounted for the changes between 1948 and 1968 in the Corps view. I have discussed them in that 1970 article in Public Policy, especially in a lengthy footnote.

Since then, of course, we have had the rise of the environmental movement and all things related to it.

Q In the late 1950s and early 1960s you do have the articulation of something called floodplain management. I use that phrase because you can argue that floodplain management goes back before that time, but certainly the term becomes commonplace in the 1950s and early 1960s with Gilbert White.

The question is to what extent do you believe the Corps embraced floodplain management at the beginning? I mean, do you have any feeling about how receptive the Corps was to Gilbert White's ideas, the ideas that came out of the University of Chicago?

A Certainly they weren't receptive initially. If I recall correctly, Gilbert White's first book, Human Adjustment to Floods, which was his Ph.D. thesis in geography at the University of Chicago, was published in the early 1940s. Is that correct?

Q As a thesis, it was the early 1940s. I think it came out as a paperback in the mid-1950s.

A Perhaps so, but Chicago in those days published its Ph.D. theses, and White's came out in the 1940s. At that time, certainly, the Corps was not very receptive to his ideas concerning floodplain management. But Gilbert White is, as you know, a persistent man. He kept at it, and finally the Corps adopted the concept. I don't remember what year that was; it was when they supported a provision in the civil works bill authorizing floodplain studies.

Q In 1960, there was a floodplain management services thing--

A Yes. And once they accepted the concept, I had the impression that the Corps rather quickly began to make analyses of projects in the light of alternative adjustments to flood hazards. To be sure, they continued in many cases to favor flood control structures more so than

some of their critics. One of the first of the surveys in which the Corps actually rejected structures, recommending instead zoning and other flood management devices, was the Charles River study, which came along a bit later. But, on the whole, I have little criticism of the Corps once they became involved in floodplain studies.

Q. You were talking about the synthetic hydrology and the simulation that is now being used in place of modeling and so forth. A few questions. I don't pretend to be an engineer, and I don't know if I understand completely how simulations work; I'm sure I don't, actually. But the bottom line, the kinds of data you're looking for--isn't that still basically a very subjective type of operation, to decide which categories of data are the important categories?

A. Yes, indeed, it is. The principal advantage of simulation is that once you've written the simulation program, you can very quickly--well, let me start over. Simulating river systems for the purpose of design (I'm not talking about. operations) is not new. Corps planners have always simulated, but with desk calculators.

They would select two or three possible designs and then simulate with desk calculators the consequences of each of these in terms of river flows and of benefits and costs, by assuming that the design structures are in place and then running through them the monthly or daily streamflows that are taken from the historical record. Now with computer simulation one can, with the same amount of effort, test more than 100 alternative designs and find the best one of these. If you are able, with the same effort, to examine 100 alternatives rather than 2 or 3, and to recommend the best one, the chances are very high that the net benefits of the former will be much, much greater than those of the latter.

In either case one needs the intelligence of the engineer and the designer as to what data are relevant and what data are mostly irrelevant. And you don't want to design a computer program with a capacity that exceeds the firm and relevant basic data that you have in hand.

Q. Would it be fair to say that these kinds of simulations allow you to do more social engineering? What I mean by that, more or less, is using public works projects to redistribute the income.

A. Yes, you can vary your objective function much more easily; I believe that's what you are suggesting. Furthermore, with computer simulation you can test several alternative objective functions. You could have as a single objective to optimize national income, that is, to optimize the difference between benefits and costs, all measured in terms of national accounts. Or you could optimize national income subject to the constraint that you redistribute so much of this income to particular groups or to particular regions.

The point is that it's easy to specify a complex objective function in computer simulations, whereas this is much more difficult if the simulations are being done with desk calculators. And it is also easier to

compare the results of using alternative objective functions. But conceptually, there's no difference.

Q' But then, of course, if you do get involved in these kinds of variables, you immediately get involved with political questions.

A' There's no question about that. My point would be that we don't design and build dams for engineering reasons. We design them to meet national needs, and the national needs are the objective function.

Until our work in the Harvard Water Program, the objective function of water resource development projects was almost always to maximize the increase in gross national product. Yet, as I have pointed out in several articles, this most frequently is not the reason why government becomes involved in such activities. The government is likely to have different objectives: for example, to redistribute income among individuals or groups, to redistribute income from one region of the country to another, or to promote environmental quality.

Thus, to design programs that maximize the single objective of increasing gross national product is not at all responsive to national needs. This procedure may have been more acceptable when we didn't know how to do otherwise; but now that we have the capacity, with the use of simulation and other techniques, to construct complex objective functions and then to test which among many alternative designs will maximize such functions, there is little justification for continuing to design for national income only.

Q' Are you familiar with how the Corps develops BC [benefit-cost] ratios now?

A' I am not familiar with developments in the last four or five years. I do know, however, that the Corps' efforts to respond to requirements of multiple-objective design have been thwarted time and again by the OMB, which has discouraged and tried to prevent the Corps from using these techniques. But maybe you could be more specific about your question.

Q' I was just going to lead into the obvious question: Do you believe that the Corps in the way that it develops its BC ratios today reflects this kind of multiobjective?

A' Yes. I think it does better on this than any other federal agency. and the Corps would do much better than it does if it were not under the what seems to me to be unreasonable pressure from the OMB not to include in their planning any objectives other than increasing gross national product. OMB has said that in reviewing the Corps' projects and deciding whether or not to approve them in the name of the President, they will not allow the calculation of benefits and costs from multiple objectives, only those from increasing national income. At least they said that some years ago, and I don't think the situation has changed.

So the response of OMB to the Corps' efforts on multiple-objective

planning has been a great discouragement for the agency. What the Corps did, at least in the 1970s, was to prepare their multiple-objective analyses none the less, but to prepare also a single-purpose national income analysis, knowing that the OMB would use the latter one when it decided whether to approve the project or not. And this created great difficulties.

Q: That's true. There has been no water resources act since 1976. This kind of multiobjective simulation--does it have anything in common with risk analysis?

A: It certainly does. And we examined in the Harvard Water Program the problems of multiple-objective planning under different assumptions of risks and uncertainty. This turns out to be quite complicated and difficult, but It's important that uncertainty be considered in this context.

The problems of uncertainty and risk analysis relate also to the question of the discount or interest rate that is used for planning government projects. Some attention was given to this question, also, in the reports of the Harvard Water Program, especially the work of Stephen Marglin. In addition to what he has to say in Design of Water Resource Systems, Marglin subsequently wrote two articles in the Quarterly Journal of Economics on how to derive and use a social rate of time discount. as he called it, in designing water resources and other public projects. rather than the market discount rate, which he showed to be less relevant.

Q: Thank you very much for your time, Professor Maass.

Appendix A

"CONGRESS AND WATER RESOURCES"

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CONGRESS AND WATER RESOURCES*

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Should Twitch Cove, Maryland, be improved at Federal expense for the protection of the few crabbers who live near this Eastern Shore community? This past May, Congress decided yes; they confirmed a recommendation of the Chief of Engineers, U. S. Army. The United States Engineer Department, as the Corps of Engineers is called in the exercise of civil functions, recommended in favor of Twitch Cove after evaluating alternative plans of improvement and selecting that one which appeared to balance best the factors of "economic feasibility"- --i.e., the ratio of benefits to costs, "engineering feasibility," and the "desires of local interests."

This last item is of interest for the moment. For any major improvement, even for Twitch Cove, there will be many groups of "local interests," and their

*** Documentation for parts of this paper is to be found in the author's *Water Resources Devvelopment* (unpublished manuscript, 1949, Harvard University). This work will be published by the Harvard University Press in the near future. Sources are consequently cited in notes only where important documentation is not to be found in the manuscript.**

"desires" will differ, may even conflict. Thus, the Engineers seek to adjust these interests and to come up with a recommendation that will maximize the total desires of the community.

Congress for a great number of years has followed a procedure of legislative self-restraint with respect to water resources developments. It will not authorize any improvement which has not received a favorable report from the Chief of Engineers. And since the Engineers attempt to maximize local desires, it may be said that Congress has transferred important responsibility for the adjustment of group interests from its own body to the U. S. Engineer Department, an executive agency.

The Engineers have recognized the nature of the responsibility which Congress has delegated to them. They have conducted their organization. and operations in a manner designed to allow a rather full articulation of local group interests. The project planning procedure, from the time Congress authorizes the Corps to undertake an examination of a given area, involves twenty distinct stages at which group interests are able to present their views to the Corps. At three of these twenty, public hearings are regularly provided for; at two additional stages, Engineer Department instructions require consultation with local interests; and at the remaining fifteen, the extent of consultation varies with particular circumstances;' but the necessity of a constant awareness of the current attitudes of local interests is emphasized in all Engineer Department publications.

Recently, the Chief of Engineers said:

The authorization of a river and harbor or flood control project follows a definitely prescribed, democratic course of action. It is based upon the activation of the desires of local interests, who are most vitally interested. Local interests, as individuals or groups through the actions of their representatives in Congress, make request for an item to be included in a rivers and harbors or flood control bill (i.e., authorization to conduct an examination) .... The District Engineer, mindful of the need for developing all public opinion, holds an open public hearing at which not only those interests that are active in obtaining the authorization of the proposed work but also all other views are obtained and encouraged. Having thus developed the desires of the local citizens, the District Engineer makes a study ....

I. PRESENT ARRANGEMENTS AND TEE LEGISLATIVE PROCESS**

Several important consequences for the legislative process flow from this project planning procedure. These include the participation by members of

**** Arrangements relating to Congress, the Corps of Engineers, and the President are discussed. No effort is made to deal in any detail with the relations of Congress and the Bureau of Reclamation because of space limitations and the fact that Corps arrangements constitute the more controlling factors in legislation for water resources. This has become more the case in the last few years. Where the Bureau and the Corps have been in competition since 1936, the Secretary of Interior has sought support of the President's office to offset support which the Corps has gotten from Congress. But even with the President's support, the Secretary has not had great success in getting his programs adopted. As a result, the Bureau of Reclamation and its supporters in Congress, the Western irrigation bloc, have begun to use the same legislative techniques which have meant**

Congress in the "executive" planning process; legislation by committee resolution; service by the Corps of Engineers as consultants to, and contractors for, the Congress, certain congressional committees, and individual members of Congress; by-passing of the President and friction among executive agencies; and the interlocking of pressure groups, the Corps, and members of Congress.

Though Congress as a group has largelydisassociated itself from the process of project planning by transferring responsibility for adjustment of group interests to the Engineer Department, individual members of Congress have not been so abstentious. Representatives and Senators, knowing they cannot obtain congressional authorization for the projects they are sponsoring without a favorable report from the Engineers, have attempted to pressure them into approving these projects by appealing to District Engineers and to the Board of Engineers for Rivers and Harbors in Washington in public hearings.

The following quotations from members of Congress indicate the importance which the legislators attach to their appearances at Engineer Department hearings :

Rep. Dockweiler (Calif.). I have appeared before the Board of Army Engineers in behalf of a harbor in my district and I made what I thought was a pretty good case for improvement of Santa Monica Harbor .... And I think the conclusion of the Board of Army Engineers was that no work should be done there because there was not enough business there. ...

Of course we must abide by the decision of somebody, and the Army Engineers decided against me in that case.

Rep. Harris (Ark.). Mr. Speaker, the Army Engineers, of the Vicksburg district, who are doing a fine work in that area (tic), held a public meeting at Hot Springs, Ark., Friday, December 12, investigating the construction by the Federal Government of Blakely Mountain Dam and Reservoir, on the Ouachita River. I had accepted their invitation to appear before the engineers at that meeting, but, due to the emergency and declaration of war, I did not have the privilege. My remarks, however, were read for me and I insert them here in the Record.

Colonel Sturgis and gentlemen, on behalf of the people of the Seventh District of Arkansas, I am glad to appear before you in the interest of the construction of the Blakely Mountain Dam and Reservoir for flood control and power development. Needless to say the greater part of the Ouachita River in Arkansas runs through my district, affecting directly 8 of the 11 counties. ...

I wish to express my appreciation and the appreciation of the people throughout this whole area for the fine work the Army engineers are doing in the development of these projects for flood control and power facilities as well. The people are intensely interested and not only asking but pleading for this protection and development. ...

If the Engineers submit an unfavorable or partially favorable report, the proponents of a project seek a reexamination, for the Congress will, as noted, not authorize an improvement without a favorable Corps recommendation. At the same time, the Corps by law may not initiate a survey unless Congress hasspe-

such "success" for the Engineers. Adoption of these techniques has been limited, however, by the fact that support of the reclamation program of the Bureau is restricted in Congress to the Western bloc; whereas support of the navigation and flood control programs of the Corps is found in representatives from all areas.

cifically authorized it, usually in an omnibus rivers and harbors or flood control bill. However, to make it easier for members of Congress to require the Engineers to reexamine unfavorable reports in the hope that "changed conditions" may justify a favorable recommendation, the Congress has devised a truly unique procedure amounting to legislation by committee resolution.

After a report of the Chief of Engineers is one year old, any Representative or Senator may present a resolution to the appropriate congressional committee[1] which, if adopted by the committee, requires the "Board of Engineers for rivers and harbors ... to review the report with a view to determining whether any modification should be made at this time in the recommendation heretofore made." The committee resolution has the effect of law, and, it should be noted, is not subject to presidential veto.

Review resolutions have been quite common. As the Congressmen proposing the reviews enjoy no opposition to their requests in most cases,and as the Engineer Department has not been called upon often to report on the desirability of conducting reviews, the committees have been disposed to grant the requests, on occasion disregarding even the one-year waiting period. It is physically impossible for any one member of a committee to be informed on the history of all navigation and flood control projects. The Representative from Arkansas, for example, in all probability never heard of Mill Creek, Virginia, to say nothing of having any judgment as to whether or not the Engineers should be asked to review the report on this Creek; he will vote, Yes. Of 83 investigations completed by the Corps in fiscal year 1946, 20 were authorized by regular legislation and 63 were reexaminations submitted in response to committee resolutions.

The new House Committee on Public Works in 1947 resolved to cut down on this indiscriminate use of legislation by committee resolution. It adopted a rule extending the waiting period to three years and requiring the Chief of Engineers to report on the estimated costs of conducting the proposed reviews. The Senate Committee failed to follow suit.

It is difficult to evaluate the review resolution as a technique for pressuring the Corps to give its approval to the projects which the members of Congress desire. Available data, however, are rather impressive in showing the importance of the resolution in getting water projects approved, expanded in scope, or modified in terms of reducing the local contributions required.

The Congress, in its long history of legislating internal improvements, has developed close relations with the Corps. (The Corps was the engineering department of the Government which planned and executed the national internal improvement programs of the 1820's Congress considers the Corps to be ***directly*** responsible to it. By resolution Congress directs the Board of Engineers for Rivers and Harbors, an advisory board to the Chief of Engineers, to conduct reviews of surveys. It does not direct the chief executive officer,

1. In the House, Committees on Rivers and Harbors or on Flood Control prior to 80th Congress; now Committee on Public Works. In the Senate, Committee on Commerce prior to 80th Congress; now Committee on Public Works.

the President; nor does it even provide the President with an opportunity for veto.

The Corps concurs heartily in this relationship. The Engineers call themselves "the engineer consultants to, and contractors for, the Congress of the United States." The theoretical consequences of such a direct legislative-agency relationship are familiar to students of government and administration; they need not be repeated here.[2]

As might be expected, Congress as a whole is not equipped to exercise direct responsibility over the conduct of Engineer Corps civil functions. It is rather certain congressional committees--those with competence over navigation and flood control matters--that attempt to hold the Corps accountable. It is to them that the Engineers are directly responsible. Witness the review resolution procedure in which Congress in effect allows a committee to legislate for it.

Traditionally members of Congress from the Mississippi delta area, where flood protection, drainage, and river navigation problems assume great importance, seek positions on the committees which handle Corps legislation. Through regular re-election they attain positions of seniority. Will M. Whittington of Mississippi, chairman of the House Committee on Public Works, was for years prior to the establishment of this committee chairman of the Committee on Flood Control. Judge Whittington, a hard hitting committee chairman, has always had Corps legislation closely under his control. More than anyone in the executive or legislative establishments, he is in close contact with, and almost in a position of supervision over, the Chief of Engineers and the USED. Until his recent death, John Overton of Louisiana was number one man in the Senate on navigation and flood control legislation.

Direct relations between these committees of Congress and the Corps have developed into a close identity of interests between the two. The Committees on Public Works feel a proprietary interest in the Corps of Engineers and in the direct relations which prevail. In terms of policies for the development of resources, the important consequences of this will be stated later.

In some respects the Engineer Department is more nearly responsible to individual members of Congress directly than to Congress as a whole or to certain congressional committees. It is the member of Congress who initiates the legislative proposal for survey; he is first contacted by the District Engineer to determine the scope of the desired improvement and interested parties; he is first to be informed of any change in the status of the investigation. The nature of the authorization process--the enactment of omnibus rivers and harbors and flood control bills---is such as further to encourage direct responsibility to individual Congressmen. When hearings are held by congressional committees on favorably reported projects to be included in omnibus bills, the testimony of the member of Congress from the district in which the project is located is usually corroborated and supplemented by the Army Engineer present at the

2. A recent restatement of the major issues by Laurence I. Radway and this author can be found in "Gauging Administrative Responsibility," *Public Administration Review*, Vol. 9, pp. 182-193 (1949).

hearing. All of these techniques have led to a sense of direct responsibility on the part of the Engineer Department to the individual member of Congress.

Direct relations between Congress and the Corps mean, of course, that the Engineers by-pass the President. This is obviously bad, for the only place where related executive functions can be coordinated effectively is in the President's office. Prior to the 1930's there was no major problem as most river improvements were for single purposes and did not impinge directly on the activities of other agencies. In the early '30's, however, the Corps began planning multiple purpose projects throughout the country involving flood control, power, irrigation, drainage, and other uses, and coordination in order to produce the best multiple purpose plan for the development of major drainage basins seemed essential. The history of resources legislation and of the development of planning procedures between 1934 and this date constitutes very largely the history of efforts by Presidents Roosevelt and Truman to break down direct agency responsibility to the Congress and to substitute for it a pattern of responsibility to the Chief Executive. Only in these terms can recent developments in the resources field be interpreted.

The agency with which the Corps has had greatest friction due to lack of coordination is the Bureau of Reclamation in the Department of the Interior. In this inter-agency feud, which has been really intense since 1939, the Corps, for reasons already indicated, has enjoyed the strong support of the Congress. The Secretary of the Interior and the Bureau of Reclamation, on the other hand, have received less consistent congressional support and have sought to balance the advantage of the Corps of Engineers in this respect by obtaining the support of the President and his Executive Office. The general pattern may be expressed as follows : Corps of Engineers+Congress v. Secretary of the Interior + Executive Office of the President.

The fact that Congress as a body has transferred to the Engineers responsibility for adjusting group interests in proposing water developments, but that individual members of Congress continue to take an active part in the planning and adjusting process is revealed in an interesting manner by the national water pressure groups-particularly the National Rivers and Harbors Congress. This comprehensive lobby counts in its membership the "local interests" (state and local officials, local industrial and trade organizations, contractors), the U. S. Congress (Representatives and Senators are honorary members), and the Corps of Engineers (officers of the Corps engaged in rivers and harbors work are all ex-officio members). The members of Congress, though they are in a real sense the lobbied, take a very active part in the Rivers Congress. Today, for example, the President is Senator John McClellan of Arkansas, a member of the Public Works Committee and of the sub-committee of theCommittee on Appropriations which handles Engineer Corps funds, and chairman of the Committee on Expenditures in the Executive Departments-to which the Hoover Commission recommendations proposing reorganization of the Corps of Engineers have been referred. McClellan, as a member of the Hoover Commission, dissented from those recommendations which would divest the Army

of rivers and harbors functions. The national vice presidents of the pressure group are Senator Wherry of Nebraska, Republican floor leader and a member of the Appropriations sub-committee on Engineer Corps funds; Representative Whittington of Mississippi, identified earlier; and Representative Case of South Dakota, a member of the Committee or Appropriations and, at the time of his selection as vice president, of the subcommittee which considered appropriations for the Corps.

In the past the ex-officio members, officers of the Corps, also have taken part in the proceedings of the lobby, though today they are somewhat more circumspect. The Rivers Congress remains, however, the most active pressure group in support of the USED.

Perhaps the most interesting and important aspect of the Rivers and Harbors Congress is the work of the Projects Committee. When the National Congress was formed in 1901, its slogan was "a policy, not a project." The purpose was not to urge any specific waterway improvements but to interest the public and the Federal Congress in the development of waterways in general. In 1935, however, the Rivers and Harbors Congress reversed its policy, agreed to promote certain waterway improvements actively, and for that purpose organized a Projects Committee. The Committee meets once a year for several days preceding the annual convention to act upon all applications for endorsement. It holds hearings on each project, classifies it in one of several orders of priority, and presents its recommendations to the full Rivers and Harbors Congress for adoption.

Senators and Congressmen who are sponsoring waterway improvements in their districts appear before the Committee in order to obtain from that organization of which they are honorary members favorable recommendations for their projects. The following excerpts, in the April, 1940, issue of the ***National Rivers and Harbors News,*** are from a report of the annual meeting of the Projects Committee:

> **Congressman Joe Hendricks of Florida presented testimony on. the Cape Canaveral Harbor, which he stated will serve the $5,000,000 citrus fruit belt, which is now without proper harbor facilities.**
>
> **Congressman John Jennings, Jr. of Tennessee, urged approval of the project for the construction of dams in the vicinity of Oakdale and Harriman, Tennessee.**
>
> **Representative Edith Nourse Rogers, of Massachusetts, asked approval of the Merrimac River project. The project will help protect the city of Lowell, Massachusetts from disastrous floods, as well as the rest of that area, she said.**

It is difficult to place a value on the general effectiveness of the Rivers and Harbors Congress because of the fact that it serves as a clearing house for uniting and coordinating the activities of local and sectional interests. The Congress itself puts forth bold claims as to its influence:

> **The influence of the National Rivers and Harbors Congress has been perhaps a more controlling force on legislation approved than that of any other organization .... Thus far there has been no adverse criticism of any of the recommendations made by the Congress in its resolutions and reports, and virtually every bill passed by the federal Congress for the improvement of harbors and waterways has been composed almost in toto of proj-**

e&s previously investigated and recommended by the National Rivers and Harbors Congress.

The [Rivers and Harbors] Congress is the country's oldest and largest water organization and occupies *semi-official status* by reason of its close liaison with the governmental agencies, legislative and executive, responsible for public works. ...

Though the group may be correct in making these claims, we shall be content to accredit it with being certainly one of the most effective lobbies in Washington today.

II. THE NEGLECT OF WATER RESOURCE PLANNING

To this point we have considered consequences for the legislative process of the manner in which interests are adjusted in the planning of water projects More fundamental, however, are the effects of these consequences in terms of best development of the nation's natural resources. The planning process has produced two important results: an absence of national plans and policies for water resources and an absence of executive branch arrangements that might develop such plans and policies.

Water planning to date has been characterized by continued emphasis on the localized aspects of individual water projects. This emphasis begins with the requirement that all surveys be authorized by Congress. The members of Congress who propose survey items for inclusion in omnibus navigation and flood control bills usually do so in response to requests of local interests in their districts. These interests often have not the ability to visualize the relationship of the improvements they desire to multiple purpose basin-wide development.

This local emphasis is accentuated by the Corps of Engineers. It seeks to limit the scope of investigations to what was intended by the Congressmen responsible for the particular authorizations. Further, the survey procedure of the Engineer Department is so oriented that each individual water development project is considered almost exclusively in the light of benefits to be derived by the area immediately adjacent to the improvement. This is most often what the local interests desire. Thus, for example, if the benefits from dredging a harbor channel to permit entrance of deeper draft vessels into an east coast Florida port are measured in terms of additional traffic and business for the localized port area, the project will be easier to justify economically than if the benefits were measured in terms of the general effects of the new project on all east coast ports in the vicinity; some of these ports might lose traffic to the newly developed one.

Finally, the procedure for authorizing improvements, the omnibus rivers and harbors and flood control bills, emphasizes individual projects-the pork barrel. Representatives and Senators appear before the appropriate congressional committees, seeking committee approval for projects in their districts which have received favorable Engineer Corps reports. At hearings on the omnibus rivers and harbor bill of 1949, 54 Representatives and Senators from 24 states testified or submitted statements to Representative Whittington's committee; on the flood control bill of the same year, 62 Congressmen from 25 states appeared.

It is not meant to say that there has been no basin-wide planning on the part of Congress and the Corps. In recent years there has been some improvement in this respect, especially for western river basins. But here the broader view on the part of the Corps is inspired primarily by competition with the Bureau of Reclamation, which has traditionally used the multiple purpose basin-wide approach. Concerning waterways legislation, President Truman said to Congress in May, 1950;

> **Finally, I urge the Congress to develop more satisfactory procedures for considering and authorizing basin-wide development programs. We are a long way still, both in the executive and legislative branches, from the kind of comprehensive planning and action that is required if we are to conserve, develop and use our natural resources so that they will be increasingly useful as the years go by. We need to make sure that each legislative authorization, and each administrative action, takes us toward--and not away from this goal.**[3]

Today we have no rational national water policy, even apart from the unrelated consideration of individual projects. President Truman recognized this in January, 1950, when he set up a temporary Water Resources Policy Commission under Morris L. Cooke to develop one.[4] Why is this true? Why are we spending hundreds of millions of dollars each year on water developments without a plan?

That ultimate responsibility rests with Congress, there can be no question. But Congress and congressional committees are not equipped to develop a national water plan out of whole cloth. They are admirably equipped to examine, approve, disapprove, and amend any intelligent programs presented to them which focus on the great issues. It is the Chief Executive who is best able to prepare such broad programs and assume responsibility for placing them before the elective body. For the greatest part of water development, however, the President has been short circuited. The Congress and the Engineers work together, but, as related, this combined labor has produced no plan.

The Corps of Engineers in reporting to Congress makes no special effort to point up the broad policy questions or to recommend or encourage the enactment of laws containing a careful definition of national policy in the water field. As the "Engineer consultants to and contractors for the Congress of the United States," they have, they say, no responsibility for initiating policies and broad programs; that is the function of Congress.

The following statement of Secretary of War Henry Stimson, in 1919, illustrates what we would put today into a broader framework:

> **When I was Secretary of War I found this situation, and I found that the reports of the Chief of Engineers which came to me were not "Is this an improvement which should be made in view of our particular funds this year--our particular budget this year--and in view of all the improvements in the United States taken at the same time?" but simply and solely "Is this an improvement of a waterway which should be made?" And the Chief of Engineers said he was directed by Congress to report in that way, and this was the way**

[3] **Message to Congress in approving H.R. 5472, the rivers and harbors bill. Printed in *New York Times*, May 23, 1950.**

[4] **White House Press Release of January 3, 1950.**

he was going to interpret that, not in comparison with other projects, but simply whether in the millennium it would be a good thing for the country to have that waterway improved. When I said "That does not suit me at all. You come in here with a lot of propositions which you have approved, and you want me to approve, to improve the navigation of such and such a river and such and such a creek and such and such a harbor. I want to know how does that compare with the situation of the whole?" He said, "I have nothing to do with that. I cannot have anything to do with it. Congress will not listen to me on that. They reserve the judgment to do that themselves."

President Roosevelt tried hard to fulfill what he considered his duty-to develop a national water policy and to submit this to Congress for action. He created and supported the National Resources Planning Board and its Water Resources Committee. But in this position the President enjoyed the intense opposition of the Congress and of the Corps of Engineers. The Corps failed to give full and genuine cooperation to the Water Resources Committee in its efforts to develop a policy. It dissented from most policy reports of the Committee, most notably from the important 1941 Report on National Water Policy. The Congress was always unsympathetic to the NRPB; refused, despite frequent personal appeals from the President, to give the Board permanent statutory status; and finally abolished it by denying appropriations in 1943. The single most important reason for congressional opposition to the Board was probably resentment on the part of the so-called rivers and harbors bloc in Congress to any effort by the President to interfere with the direct relations between Congress and the Corps. Furthermore, Congress failed to pay any heed to the policy recommendations of the Water Resources Committee which, though they contained dissents from the Corps, were supported by the President.

Herein lies a lesson for the new Water Resources Policy Commission. The acceptance of its recommendations may turn on the support they can get from the Corps and the congressional Committees on Public Works. The members of the Commission seem well aware of this.

III. CONGRESS AND EXECUTIVE BRANCH ORGANIZATION

The fact that organization for water resources development is so inadequate today is in large part a result of the congressional attitudes we have outlined.

Theodore Roosevelt, Herbert Hoover, Franklin Roosevelt-all have tried to bring rationale into administration of water functions. And all have failed, failed because Congress will brook no interference whatsoever in its direct relations with the Corps. As one writer has said, "The civil functions of the Army Corps of Engineers constitute a veritable Rock of Gibraltar against all executive attempts to introduce any organizational integration of flood control and river development with the land use, irrigation, and electric-power activities of other federal agencies."

In recent years the Bureau of the Budget, as a coordinating agency for the President, has tried to break into the direct channel between the Corps and Congress. It has required that survey reports (in the same manner as proposed legislation) be submitted to the Executive Office of the President, prior to sub-

mission to Congress, so that the Corps can be informed of the relationship of the reports to the program of the President. But when the Executive Office informs the Corps that a project does not conform with the President's program, the Engineers pay no heed. They recommend to Congress, nonetheless, that the project be adopted.

The Budget Bureau is the source of statistics to back up this conclusion.[5] Between January, 1941, and September, 1948, the Corps of Engineers submitted to the Budget Bureau 436 reports favorable to construction of federal improvements. Three hundred and sixty were cleared with no objections to the authorization of the projects, and 76 were (a) held by the Bureau to be wholly or partially not in accord with the President's program (44 reports) or (b) were the subject of specific reservations stated in special comments by the Bureau (32 reports).

With regard to the 44 reports held not in accord with the President's program, the Corps of Engineers transmitted reports on all of these projects to Congress with favorable recommendations. Congress authorized 38. Of the total of 76 projects on which the Bureau made some reservations and comments, Congress authorized 62; seven were either abandoned, or considered by Congress and rejected, while seven projects had not yet been formally considered by Congress. The projects authorized by Congress upon which the Bureau had expressed reservations or full opposition had a total estimated cost in 1947 of $2 billion; those not authorized by Congress, a cost of about $500 million.

Senator Douglas' recent publicized effort to reduce by $840 million the authorizations contained in the 1950 rivers and harbors and flood control bill provides another illustration. Most all of the projects which Douglas attacked had been given low priority or held not in accord by the Bureau of the Budget. Yet the Senate, like the Senate and House Committees on Public Works and the House of Representatives before it, adopted the recommendations of the Chief of Engineers and disregarded those of the President.

Under the present planning pattern, the water experts of all agencies of the Federal government do not cooperate to prepare reports on the best uses of water in any drainage basin. Rather the Corps of Engineers (or the Bureau of Reclamation, as the case may be) undertakes a survey for which it assumes sole responsibility. It may or may not call in experts of other agencies during the conduct of the survey. When the report has been completed and tentative recommendations announced to the local interests, then the report is referred to other agencies for comment; but experience has proved that clearance occurs too late in the planning process for effective coordination.

This pattern of uncoordinated planning was set by Congress in enacting the first two national flood control bills in 1936 and 1938. Although it was known, certainly by 1938, that the President, the National Resources Planning Board, the Budget Bureau, and the Agriculture and Interior Departments all preferred

[5] Commission on Organization of the Executive Branch of the Government, *Task Force Report on Natural Resources* (Washington, 1949), Appendix 5.

provisions for genuinely cooperative planning, Congress preferred to assign the **planning** responsibility directly to the Corps, not to the executive branch as a whole through the person of the President.

The NRPB recommended that the President veto each of these bills for this failure, among other reasons. The President approved them, but in each instance stated his opposition to the uncoordinated planning provided and his determination to alter this within the executive branch. He said in 1938:

I have approved this bill with some reluctance. ...

It is not a step in the right direction in the setup provided for general government planning.

I am in doubt as to the value of some of the projects provided for and it is unwise to place recommendations to the Congress solely in the hands of the Engineer Corps of the Army in some cases and of the Department of Agriculture in other cases.

Coordination of all such public works involves a wider survey and the examination of more national problems than any one bureau or department is qualified for.

In these respects future legislation will be vitally important, in order to give to the Congress and to the country a complete picture which takes all factors into consideration.

For the coming year, however, I shall try to obtain this coordination by asking for complete consultation between all groups and government agencies affected. In this way the whole of the problem can be made more clear. I have, however, approved the bill because it accomplishes a number of good things, with, however, the reservation that its deficiencies should be corrected as early as possible.

The President was unsuccessful in this resolve, due largely to those congressional-Corps relations we have been discussing. The same obstacle prevents the President from consolidating important resources functions. Theodore Roosevelt recommended to Congress in 1908 that responsibility for water development be centralized. Congress, expressing full confidence in the Corps of Engineers, failed to implement his recommendation. Herbert Hoover proposed to Congress in 1932 that the civil functions of the Corps of Engineers be transferred to the Department of Interior. His reorganization plan, submitted under the Economy Act of 1932, was roundly defeated in the House. The members of the House Committees on Flood Control and on Rivers and Harbors, Democrats and Republicans alike, opposed the reorganization. Franklin Roosevelt in 1937 proposed that Congress enact legislation permitting him to effect reorganizations within the executive branch. No agencies of Government were to be excluded. When in 1939 Congress finally- passed the Reorganization Bill authorizing the President to submit plans to Congress which would become law unless vetoed by both Houses of Congress within 60 days, the Corps of Engineers was one of a very few purely executive agencies placed beyond application of the legislation. Harry Truman in 1945 asked that Congress reenact reorganization legislation (it had lapsed some years previously) and that no agencies be exempted from its provisions. Congress did exempt some eight agencies, seven of them independent commissions or boards, and the eighth, the Corps of Engineers.

The Hoover Commission in 1949 proposed that the water resources functions of the Corps of Engineers and the Bureau of Reclamation be consolidated in a Water Development and Use Service and that this Service be organized within

the Department of Interior or, as three commissioners urged, within a new Department of Natural Resources. In proposing this consolidation, the Commission's task force on Natural Resources said:

> Perhaps the most imposing argument against transferring the civil functions of the Corps of Engineers to another agency is found in the intense opposition with which any such proposal is likely to be met. There is no need to emphasize the powerful local and congressional support of the Corps .... The history of past reorganization efforts reveals the difficulties encountered when measures have been proposed involving my change whatsoever in the civil functions of the Army Engineers.

To implement this proposal and many others, President Harry Truman and former President Herbert Hoover urged Congress in 1949 to enact a general reorganization bill. The legislation was to be similar to earlier reorganization bills in that plans submitted by the President would become law unless vetoed by both Houses of Congress within 60 days. It was to differ from earlier legislation in that both Truman and Hoover insisted on a "clean bill," one containing no exemptions, and on a permanent bill, not one that expired within a few years.

The supporters of the Corps of Engineers, both in and out of Congress, objected strenuously to the proposed legislation. Herbert Hoover lashed out at these supporters and their demand for exemption for the Corps. Despite considerable opposition, the House passed the bill with no outright exemptions. The Senate, too, passed a "clean bill," no exemptions. But the Senate bill has a joker, one to which the House had to agree to get any bill at all. This joker provides that any reorganization plan submitted by the President shall become law unless vetoed by a constitutional majority of *one* House. This constitutes a major reverse for administrative reorganization; the bills of 1939 and 1945 had required veto by both Houses.

Why did the Senate insist on this change? Because the congressional supporters of the Corps of Engineers announced that they would forego outright **exemption for the Corps *only if* Congress would agree to a one-House veto.[6] They were sure that any proposed transfer of the Corps could not get through**

[6]The report of the Senate Committee on Expenditures contained the following:

"By far the largest number of witnesses appeared in behalf of the exemption of the civil functions of the Corps of Engineers, including representatives of valley improvement, flood control and development associations, chambers of commerce, and other State and civic organizations: 17 of the 25 witnesses appearing at the hearings, and **14** of the 23 resolutions and communications submitted for the record, were in support of such exemption. In addition, hundreds of telegrams and letters from **44** States and the District of Columbia were received by the committee, expressing opposition to granting any reorganization authority to the President which would permit the transfer of the civil functions of the Corps of Engineers to any other department or agency ....

"An amendment to exempt the civil functions of the Corps of Engineers, offered by the chairman [Senator McClellan], was defeated by a vote of 5 to 4. Several members of the committee indicated, however, that in voting against this exemption they reserved the right to favor such exemption should the Senate not approve the amendment providing for disapproval of reorganization plans by either the House of Representatives or the Senate." ***Senate Report*** 232, 81st Cong., 1st Sess., pp. 12-15, **17** (April 7, **1949**).

Congress under these conditions. And to make sure that future changes in the complexion of Congress might not alter this situation, they provided that the bill expire at the end of Truman's present term of office. The ease with which Congress, under this scheme, can defeat reorganization plans of the President has been demonstrated recently with grim reality.

Continued congressional opposition to Valley Authorities has been in part a consequence of the traditional legislative handling of water business. Congressional supporters of the Army Engineers, particularly members of the congressional committees to which the Engineers report, have been among the most violent opponents of Valley Authority legislation. They argue that the Engineers are doing a fine job and should not be displaced by independent corporate organizations.

It will be remembered that in 1937 President Roosevelt sent to Congress his famous message on regional authorities--the "8 little TVA's," as it came to be known. This much misunderstood proposal called for dividing the nation into eight regional areas for the purpose of developing integrated plans for resources development and management. At least in the early years, regional authorities with responsibilities broader than just planning would be set up or continued in only three areas. These were the TVA, the Columbia Valley Authority, and the Mississippi River Commission.

A careful reading of the hearings on this legislation before House and Senate committees reveals that almost all opponents of the bill, no matter whether their hostility to the legislation was inspired principally by opposition to hydroelectric power, by fear that the favored position of navigation interests in river development might be adversely affected, or by other causes, expressed complete confidence in the Engineer Department and an unwillingness to see any tampering with its duties in regard to rivers and harbors and flood control.

Significantly, the only Valley Authority legislation which has passed the Congress, that creating the TVA, was not handled by the committees which write navigation and flood control legislation, but rather in the Senate, by the Committee on Agriculture and Forestry, and in the House, by the Military Affairs Committee. These committees, particularly the Senate Committee on Agriculture, have been infinitely more sympathetic to Valley Authorities than the committees with which the Engineer Department has cooperated. Thus the fate of Valley Authority legislation, at least in so far as getting a sympathetic committee hearing is concerned, has depended in large part on the committee of reference.

The classic example is the legislation proposed by the President, and introduced by Senator Murray, to create a Missouri Valley Authority (S. 555, 79th cong., 1st Sess. [1945]). Senator Murray wished this bill referred to the Committee on Agriculture which had handled TVA legislation. The opponents of an MVA wished it referred to the Committee on Commerce, which then handled navigation and flood control. The Committee on Irrigation and Reclamation was also interested. Senator Murray lost, and this meant sudden death for the MVA. In an almost unprecedented action, the Senate adopted a resolu-

tion (Sen. Res. 97, 79th Cong. 1st Sess. [1945]) referring the bill to all three committees----*first*, for a period of 60 days to the Committee on Commerce with respect to navigation and flood control; second, for an equal period, to the Committee on Irrigation and Reclamation with respect to their competence; *last*, to the Committee on Agriculture. Within 60 days the Commerce Committee had reported back unfavorably; some five months later the Committee on Irrigation reported unfavorably. There was no necessity for the Agriculture Committee either to hold hearings or to make a report--the bill was dead.

Responsibility for TVA legislation was apparently shifted to the Committees on Public Works in the Congressional Reorganization of 1946. Thus, when President Truman's Columbia Valley Administration proposals were introduced, they were referred to these committees, the very ones which work 'most closely with the Corps. CVA legislation has received a most unsympathetic hearing on both sides of the Capitol. Indeed, with the exception of Senator Sparkman, an Alabama supporter of TVA, it is hard to find conscientious CVA proponents on either committee.

IV. THE PROPER ROLE OF CONGRESS

What function *should* Congress perform in water resources development and how ***should*** this function be organized? To answer these questions we should, perhaps, go back to the fundamental problem of legislative function. Here we shall develop two characteristic theoretical approaches to this problem. One seeks to determine the unique indispensable contribution the modern legislature can make to democracy. This approach defines function in the biological sense; it emphasizes the vital organic contribution of legislatures to modern government, rather than the relationship of the legislature to other branches of government activity. The other approach emphasizes just what the first would reject. It defines the legislative function largely in terms of the relations of legislatures to other organs of government.

Miss Elaine Tanner of Radcliffe College has completed recently an excellent survey of legislative theories.[7] Seeking a functional definition of the unique contributions of the legislature in the modern democratic state, Miss Tanner finds most current formulations inadequate, or rather in need of restatement. She suggests a two-fold function for the 20th century legislature. First, it can bring to modern government certain intangible qualities of the non-specialist, the insights and sensitivities of a non-technical collective mind. As its second contribution, the legislature occupies a critical place in a process that must welcome rational change. Capacity for change and for choice between alternatives is the institutionalized expression of individual freedom--of the "open mind." Capacity for change is the ultimate strength of democracy, the antithesis of totalitarian policy making. And it is the legislature which can "institutionalize the open mind." "It can make the Government see the obvious and do something about it, regardless of political, psychological, or other deterring

[7] **Elaine Tanner, *The Function of the Modern Legislature* (unpublished manuscript 1950, Radcliffe College).**

conditions." By performing this function the legislature not only permits freedom but also government efficiency, for efficiency can be associated with ability to change, to choose alternatives, to see errors and correct them, to avoid bureaucratic narrowness and totalitarian closeness.

A second theoretical approach, developed with greatest insight in this country by Carl Friedrich,[8] emphasizes more directly the relation of the legislature to the bureaucracy. Bureaucracy is viewed as the very core of constitutional government in the sense that no modern government can long survive without an efficient administrative organization. Constitutionalism presupposes a functioning bureaucracy, for constitutionalism consists largely of efforts to subject the bureaucracy to popular influence and control. The legislature plays its distinctive role in the manner in which it holds the bureaucracy responsible and accountable. Parliamentary bodies "appear as integrating agencies through which the policy of the government and the claims of the various interested groups are expounded to the larger public with a view to discovering a suitable balance." Thus, in holding the bureaucracy responsible, legislative assemblies are not limited to legislation, investigation, and appropriation (in all of which, it must be remembered, they do not have exclusive jurisdiction); they participate also in popular education and propaganda.

On the basis of these two approaches, can we derive a proper water resource function for the Congress? From both the Tanner and Friedrich analyses we can conclude that Congress should be concerned with important national water policies. It is when dealing with major issues of policy, not with survey reports on individual projects, that the "unspecialized" and the "open" mind-and thus the Congress representing this mind collectively-can be most effective. If the Congress is to hold the bureaucracy accountable, then it must adopt certain standards or guides, and these standards are just what is involved in legislation setting national water policies rather than legislation concerned with projects only. Further, unless Congress focuses on the major policy issues, it cannot perform its educative function. The people of the United States cannot be interested in whether or not Mill Creek, Virginia, is improved, nor even in whether Arizona or California should be allotted the greater share of the waters of the Colorado River. But they can be aroused on national policy issues such as the prevention of speculation and monopoly in benefits derived from Federal improvements.

Both analyses indicate also the desirability of holding the executive branch of government clearly responsible for presenting to the Congress well-balanced legislative proposals which focus on major issues. In this way the legislature can debate, adopt, reject, or amend them. The "open mind," if it is going to effect change, must have something to change, must have a standard. And an important part of Friedrich's doctrine of bureaucracy and constitutionalism relates to the professional. obligations of the bureaucracy, involving in this

[8] See especially his *Constitutional Government and Democracy* (Boston, 1941). A new and revised edition of this excellent work is now in press.

ease a **clear** responsibility for submitting to the legislature competent policy proposals.

Having agreed that Congress should be concerned with important matters of policy, we must attempt to determine whether Congress should **limit itself** largely to this concern; whether, in other words, it should back out entirely from the area of authorizing individual projects----from the biennial omnibus rivers and harbors and flood control bills. Keeping in mind both the functions for which the legislature is best equipped and the acknowledged necessity for holding the bureaucracy in close check, an ideal solution for authorization would appear to be this. Congress should pass a basic law setting out in some detail the standards to be met by any proposed water project desirable of development. The executive water development agency should then be authorized to undertake any investigation, not having to rely on Congress to authorize each survey, and to approve for construction any project that meets the standards of the. basic law. For any project not falling clearly within the standards, but highly desirable in the eyes of the executive agency, a recommendation for special authorization should be submitted to the Congress. Congress would always have the authority to disapprove by legislation any project approved by the agency under this general authorization.

The basic law should further set forth criteria for establishing priorities among approved projects. The manner in which the agency applies its appropriations against project priorities, established in accordance with standards of the basic law, would, of course, be reviewed yearly by the Appropriations Committees. Finally, Congress should insist that the basic law be reconsidered periodically, and that the executive agency adopt a continuing program for reexamining, on the basis of experience, the operation of the law and recommending to Congress revisions of standards.

This proposal involves a more complete transfer of responsibility for adjustment of group interests than that in current practice. The proposal is made, however, in full view of both the undesirable consequences we have found to result from the existing situation and the conclusion reached earlier that an **important** function of the legislature is to integrate and coordinate the conflicting claims and interests of the government and various interest groups. With respect to the latter, it has never been said that adjustment is exclusively a legislative responsibility. To the contrary, adjustment of group interests occurs throughout the administrative and legislative processes. In this instance, the integration and coordination of group interest which is required in setting the basic statute will be a responsibility of the Congress; that required for developing individual projects, a responsibility of the executive agency.

This proposal for very broad delegation of responsibility for interest group adjustment should not aggravate the already bad consequences we have noted from a more limited delegation. On the contrary, it should bring improvements in the existing situation. The very fact that, within the limits of standards set in the basic act, full, rather than incomplete, responsibility would be transferred should remove much of the pressure on Congress. Thus, for example,

the technique of the review resolution would not be available. The executive agency would no longer look to Congress for the authorization of specific investigations. There would be no hearings on omnibus authorization bills at which interested members of Congress and the representative of the Chief of Engineers form a team in support of projects.

To be sure, individual members still would seek approval for investigations and projects in their districts. But they would be more on their own; they would not be supported in the same way by congressional committees. And the members of the committees themselves would not continue to occupy the same highly preferred positions they have now with respect to the conduct of the water agency.

This proposal is not new. The Reclamation Act provides similar machinery. But this machinery has run into difficulties in the last few years. The standards of the Act are not adequate; and the parallel existence of a vastly different process for authorizing Engineer Department projects has caused untold difficulties for Reclamation. If the Cooke Commission, as promised, comes up with an adequate set of standards, and if the process of approving multiple purpose water resource developments is made uniform (as it should be for all projects, no matter who constructs them), then the proposed method of authorization can be effective.

A number of other revisions in legislative organization and procedure might, of course, be mentioned. But space permits the mention of only one relating to committees. Jurisdiction over major water resources programs is split in both Houses of Congress between two committeesD--those having supervision over the Corps of Engineers and other public works and those concerned with the Bureau of Reclamation and other programs of the Department of the Interior. This is a major source of difficulty and unless remedied may well preclude any significant improvement in the conduct by Congress of its water business.

Finally, a great many of the difficulties in water legislation today are a consequence of, or in an important way related to, the division of water development responsibilities in the executive branch between the Corps of Engineers, the Department of Interior, and other agencies. From the point of view of Congress, therefore, significant improvements in the legislative handling of water resources may well be impossible without executive reorganization.

Appendix B

"PROTECTING NATURE'S RESERVOIR"

Article reprinted from Public Policy 5 (1954): 71-106.

PROTECTING NATURE'S RESERVOIR*

Arthur Maass

IN July of 1953 the 83rd Congress, though hellbent on economy, appropriated $5 million for a new and unbudgeted national program of "watershed protection." Neither President Truman nor President Eisenhower had requested this money in their Budgets; it was provided at the urgent request of certain Members of Congress who were concerned over a rising public pressure for national action on watershed flood control. Clifford Hope of Kansas, chairman of the House Agriculture Committee, presented the item to the Committee on Appropriations. "I am sure," he said, "that the members of this Subcommittee are aware of the tremendous interest in watershed programs which exists throughout the country today. As a matter of fact, I am convinced that the country is far ahead of the Department of Agriculture and the Congress on this subject "[1]

But in appropriating $5 million for this purpose Congress was not dealing for the first time with the watershed problem. In June of 1936 it had declared that "destructive floods upon the rivers of the United States ... constitute a menace to national welfare," and that "the Federal Government should improve or participate in the improvement of navigable waters and their tributaries, *including watersheds thereof,* for flood purposes if the benefits to whomsoever they may accrue are in excess of the costs, and if the lives and social security of the people are otherwise adversely affected."[2] To this end Congress provided that Federal investigations and improvements of rivers for flood control and allied purposes should be under the supervision of the Chief of Engineers, and that Federal investigations of watersheds and measures for runoff and water flow retardation and soil erosion on watersheds should be undertaken by the Department of Agriculture. The Secretary was authorized and directed to make watershed flood control surveys in the same localities in which the Corps of Engineers was authorized to make river surveys for flood control.

* See bibliographic note at conclusion of article for method of citing sources.
1 Ref. (C), p. 583.
2 Flood Control Act of 1936, 49 Stat. 1570. Emphasis added.

By June of 1953, however, the Government had made very little progress on the watershed program authorized in the Flood Control Act of 1936. The Department of Agriculture had not yet agreed upon a rationale for the program, nor upon an organization to develop such a rationale. During this seventeen year period the Department had recommended to Congress improvements on only 26 watersheds.[3] And with respect to these, there was little agreement in the Department, the Executive Office of the President, or the Congress that adequate or satisfactory plans had been proposed. Congress had authorized the 11 watershed proposals prepared before World War II (all in the Flood Control Act of 1944), but had failed to take any action on those submitted thereafter; and relatively little work progress had been made on the authorized watersheds. It is in the light of these facts that we recall Clifford Hope's conviction that "the country is far ahead of the Department of Agriculture and the Congress on this subject."

WHY SO LITTLE PROGRESS?

Why had so little progress been made since 1936? Why had the Department of Agriculture been unable to make effective use of the Flood Control Act? It is the purpose of this article to develop an answer to these questions and then to interpret Congressional action in 1953 in the light of this answer.

In brief, the answer is that the Department of Agriculture, considering its internal organization and its relations with outside groups, with the Budget Bureau, and with Congress, had been unable to adjust to a *project-by-project*, in contrast to a *nationally uniform* approach to an agricultural problem. The Flood Control Act contemplated a project approach, similar to that of the Corps of Engineers. But for Agriculture, that which was to be applied on a project basis, "measures for runoff and waterflow retardation and soil erosion prevention on watersheds," was not well delineated in the legislation nor in the work preparatory to it. Neither was the relation of a program of watershed projects to the nation-wide conservation programs of the Department.

[3] Eleven surveys were completed before World War II interrupted USDA work on this type of activity; and 15, thereafter. The general report on the Missouri River Basin Agricultural Program is not included in the count for this purpose.

PROTECTING NATURE'S RESERVOIR

How should flood control be provided on watersheds? By upstream engineering practices such as flood water retarding structures? By land treatment practices designed to improve the water retention and regulating capabilities of crop, pasture, and woodlands? Or by a combination of these two and yet other devices?

How should the desired practices be installed on farms and other private lands? By use of Federal technical assistance to farmers? Incentive payments? Supporting credit? Extension education? Or by a combination of several or all of these and others?

Since the Department's national conservation programs provide for land treatment measures by various combinations of the means listed above, how should the watershed project by-project approach be meshed with the national programs? Should the national programs be accelerated for selected areas? Or should the watershed projects be separately authorized and conducted?

It is in solving these difficult problems that the Department has had so little success. But responsibility for failure does not rest on the Department alone. As we shall see, the Budget Bureau, the committees of Congress, and the 1936 legislation inaugurating a watershed program must share, in varying degree, this responsibility. (Where the law is at fault, however, the USDA can be held accountable for failing to propose remedial legislation.)

THE FLOOD CONTROL ACT OF 1936: A PUBLIC WORKS APPROACH

Let us start, then, with the 1936 Act. As I have recounted elsewhere, this legislation was drawn up in 1935 by the Flood Control Committee of the House of Representatives as an "emergency measure," designed primarily to insure that flood control projects would receive a large allocation under the $4.8 billion emergency relief appropriation then under consideration by the Congress.[4] It was not considered a vehicle for determining important policy in resources development. When the bill emerged from the Senate Commerce Committee almost one year later, however, it had been expanded in scope

4 See this author's *Muddy Waters: The Army Engineers and the Nation's Rivers* (Harvard University Press, 1951), pp. 83-6.

to expound a national policy for flood protection. In deriving this policy the Commerce Committee had worked almost entirely with the Army Engineers; it had not consulted other interested agencies- the Departments of Agriculture and Interior and the National Resources Committee. These agencies disapproved the bill as reported; they considered it totally inadequate as a determinant of public policy in the broad field of water and related land resources. Among other deficiencies, the bill made no mention of watershed programs and surveys and granted no authority to the Department of Agriculture in this regard. Since it appeared certain, however, that the Senate, reacting to the disastrous spring floods in the eastern United States, would pass the flood control measure at the 1936 session of Congress, and that time was too short to work out a new and more generally satisfactory approach to the problem, the agencies agreed to press for amendment of the bill on the floor of the Senate to meet some of the most obvious deficiencies, including the failure to recognize flood abatement on watersheds. With the aid of President Roosevelt and the White House the bill was amended; and though the NRC considered the amendments inadequate and recommended a veto, the President signed the bill with some reluctance on 22 June 1936.

This legislative history is recounted to demonstrate the inadequate preparation of the 1936 Act. Not until the bill was reported from the Commerce Committee bv Senator Copeland, in late April of 1936, does the Administration appear to have been alerted to its important policy implications. Only at the last minute, in Senate debate on the bill, was legislative consideration given to the watershed aspect of river development. Then the Senate accepted, and the House immediately concurred in, several amendments prepared hastily by representatives of the Soil Conservation and Forest Services and Senator Hayden of Arizona who represented the President in the floor debate on the bill. It was hoped and expected by many that the 1936 Act would be replaced soon bv legislation based on more careful study. But this has not been the case. The procedure and organization for project planning set forth in this first national flood control law have come to be repeated in subsequent laws.

In connection with a project-by-project approach to the

development of navigation facilities the Corps of Engineers and Congress had evolved a detailed and unique system of executive-legislative relations.[5] In outline this system was as follows: Congress, in an omnibus Rivers and Harbors Act, authorizes the Corps to investigate the desirability of improving a given area; the Corps conducts a survey to determine the most suitable plan for improvement and whether such improvement is economically justifiable; the Corps submits its survey report to Congress and if the report recommends construction, Congress is likely to authorize the project in an omnibus Rivers and Harbors Act---*i.e.* authorize the Corps to proceed with construction in accordance with the survey plans when money is appropriated; if the survey report is unfavorable to improvement, the House or Senate Committee having jurisdiction over rivers and harbors may by Committee resolution direct the Corps to reexamine the area.

This public works project approach to resources development was adopted in the 1936 Flood Control Act for the activities of the Corps of Engineers. This was to be expected since the Corps took the initiative in working out the Act with the House and Senate legislative committees. The last minute amendments by which watershed programs were "counted in" the legislation applied the same unique system to the Department of Agriculture. Thus, the Department was faced with a new project-by-project program for agricultural lands, a new method for program analysis and justification, and a new pattern of executive-legislative relations---for all of which there was no important precedent in other basic programs of the Department. To this date the USDA has been unable to work effectively under the Corps' public works procedures.

CONSEQUENCES OF INCLUDING USDA UNDER CORPS PROCEDURES

At the outset it was believed by many in the Department of Agriculture and the National Resources Committee that the Department and the Corps would prepare joint survey reports on rivers and their watersheds with joint responsibility for the findings and recommendations. This, they said, was the intention of the framers of the watershed amendments and of the

[5] For a detailed statement of this procedure, see *Muddy Waters, op. cit.*, ch. 1.

Congress in accepting these amendments.[6] But joint reports never materialized. First, the Corps of Engineers was generally not inclined to participate in any cooperative investigation of navigation or flood problems. Second, the Department of Agriculture was not prepared to conduct the watershed aspects of preliminary examinations and surveys at the rate of speed desired by the Corps Thus, though the Department of Agriculture was authorized and directed to make watershed surveys at the same localities where the Corps was to make river surveys for flood control, the two survey programs have been conducted independently of one another from the beginning.

Left, then, to shift alone in this new environment of project reports, the Department of Agriculture faltered. The preparation of survey reports on the Corps model has involved many techniques not easily applied to watershed improvements. Take, for example, the benefit-cost ratio. The costs of a project are. compared to the monetary benefits to be derived, such, for example, as flood losses prevented. These are reduced to an annual basis and stated as a ratio. If the ratio of benefits to costs is greater than 1:1, the project is considered justified economically. The Department of Agriculture has had great difficulty deriving benefit-cost ratios for its watershed programs. As recently as December of 1952 a subcommittee of the House Committee on Public Works, which is accustomed to dealing with the economic evaluation methods used in Corps survey reports, had this to say of the report on the Brazos River Watershed, Texas, considered "typical" of the Department's watershed reports :

"In summary, the economic evaluation appears to use figures both in estimated costs and in estimated benefits that are not at all firm. ... While the stated figures show estimated benefits well in excess of estimated costs, the *calculations,* the *assumptions,* and their *presentation* do not inspire confidence. The real economic value of the program is left in doubt."[7]

[6] Memo **of Chmn. Water Resources Committee, National Resources Committee, 16 Dec. 1938, subject: planning of flood control investigations; in National Archives.**

[7] **83rd Congress, 2nd Session, House Committee on Public Works, Subcommittee** to Study **Civil Works, Report on Economic Evaluation of Federal Water Resource Development Projects, House Committee Print No. 24, p. 36. Emphasis added.**

similarly the Bureau of the Budget and the Chief of Engineers have expressed dissatisfaction with the USDA's "project economics." In connection with the Brazos Watershed Report, General Pick, Chief of Engineers, said: "I do not believe, however, that this method of investigation and planning is adequate to develop the engineering plans, estimates of cost, and data on economic justification, which we consider necessary as a basis for recommendation."[8]

The difficulty may lie in the efficiency with which the Department has conducted its surveys. More likely it is due to the fact that the Department of Agriculture has been trying to apply to an agricultural program a public works project analysis that is hardly applicable.[9]

The preparation of project reports has, in addition, involved the Department of Agriculture in a type of detailed Budget Bureau review and control that does not prevail for other Department programs. For a great many years the executive departments have been required to submit to the Budget Bureau legislative proposals and proposed testimonies on legislation, so that the Bureau can act for the President in coordinating proposals and informing the departments of the relation of their statements to the President's program. That the Corps of Engineers has not in the past cooperated willingly with. the President's office in setting national resources policies is now well documented.[10] For one thing there is little basic legislation on navigation and flood control. The omnibus Rivers and Harbors and Flood Control Acts are written in the House legislative committees and consist largely of Congressional approvals and authorizations of individual project survey reports; so that national policies, to the extent that they exist, must be sought in the reports themselves. For this reason largely the National Resources Planning Board and the Bureau of the Budget in 1940 drafted, and President Roosevelt signed,

[8] Brazos River Report, p. 4.

[9] The House subcommittee recognizes this in part.

As an added factor, certain groups in the Department, in the Forest Service in particular, feared that the procedure of economic evaluation in the Flood Control Act might become a precedent which the Congress or Budget Bureau would seek to apply to the Department's regular programs. This they did not want.

Other survey techniques of the Corps which have perplexed the Department are period of *amortization*, *cost allocation*, and *principles of local cooperation*.

[10] *See Muddy Waters*, *op. cit.*, *passim*.

an Executive Order requiring all Federal construction agencies to submit to the Budget Bureau all investigation and survey reports before they are sent to Congress, so that Budget can determine the relation .of the reports to the program of the President. In this way it was hoped to bring the Corps under some degree of executive control.[11] As might be expected, the Budget's techniques for reviewing individual project reports have differed somewhat from those for reviewing general legislation. The Bureau has examined and criticized benefit-cost ratios, including the sufficiency and accuracy of the specific economic data supporting them; cost allocation principles; etc.

Unlike the Corps, the Department of Agriculture has cooperated well with the President's office on matters of agricultural policy. These are usually spelled out in legislative proposals for national agricultural programs. For its watershed flood control program, however, the Department must clear with Budget on a project-by-project basis, as a public works agency. And in this capacity the Department has experienced difficulties. Budget's criticism of USDA project economics has been noted. Other and more serious differences of opinion between Budget and the USDA over watershed project reports will be discussed below.[12]

Finally, the preparation of project surveys under the law of 1936 has required the Department to report, for this program alone, to legislative committees other than those on Agriculture. The Committees on Public Works, as we shall see, have an entirely different perspective on watershed programs than the Committees on Agriculture. It is with the Committees on Public Works and their predecessors that the Corps had built up such a unique system of executive-legislative relations, based on project reports.

A RATIONALE FOR A WATERSHED PROGRAM

Working with the procedural requirements of the Act of 1936, the USDA has sought without success to develop, and gain

[11] *Ibid.,* pp. **101-2, 126-9.**

[12] Also, as a part of project clearance and coordination, the Department of Agriculture, for the watershed program alone, must comply with other procedures required of the Corps of Engineers, such, for example, as referring each project report to the Governors of all affected States for review, and to the Federal Inter-Agency River Basin Committee. *Ibid.,* pp. **108-12, 124-9.**

general approval for, a rationale for watershed programs. In the late 1930's and up until the war Milton Eisenhower, as director of the Secretary's Office of Land Use, undertook to coordinate for this purpose the varied efforts of the Forest and Soil Conservation Services and the Bureau of Agricultural Economics. he achieved agreement on a number of important points, notably, the limited effects of land treatment measures on major floods at downstream urban centers, but he was unable to work out a broadly consistent Department rationale for watershed programs. As a result, when watershed survey work was resumed after the War, two views emerged, competing for acceptance within the Department. The one emphasized structural measures such as small retarding basins and bank protection works for the stabilization of small watercourses--a headwaters engineering approach. The other emphasized a broad variety of measures such as reseeding of pastures, deferred grazing, contour cultivation, fertilizing crop and pasture lands, terracing, intensifying farmer education, broadening farm credit, in addition to the watercourse structural measures--all for inducing proper use and treatment of the grass, crop, and forest lands-in the watershed. This was a comprehensive land use approach in which flood abatement was considered in the broad light of general agricultural development.

The difference between the engineering and the comprehensive approaches to watershed flood control has its counterpart in a dichotomy of views on the best method for planning land conservation for an individual farm; and a brief analysis of this dichotomy is instructive for our purposes. The technicians of the Soil Conservation Service, in making a farm conservation plan, concern themselves very largely with soil. practices. They recommend terracing, or contour farming, or strip cropping, so as to "treat every acre according to its capabilities and needs." On the other hand, certain agricultural economists argue that conservation for a farm should be planned in terms of the management of the whole farm business and the farm home too, rather than in terms of soil practices alone.[13] Alternative operating budgets should be worked out for each farm showing

[13] See Charles Hardin *The Politics of Agriculture* (Free Press, Glencoe, Ill., 1952), pp. 60-6; and the writings of John D. Black, Earl Heady and Sherman Johnson.

the expensesand income from different systems of land management and including in the alternatives only systems which promote proper land use. Thus, for example, on the basis of such an analysis the most effective way to get conservation on a New England dairy farm might be to make available $2,000 in low interest intermediate credit. With the credit the farmer could expand his barn to accommodate four more cows. To supply pasturage for the cows he would then convert certain fields, which are subject to erosion, from an annual cash crop to permanent pasture; and this would constitute good soil conservation. The point is that technicians using the SCS method of farm conservation planning would not have come up with a proposal to provide $2,000 credit for barn expansion. They likely would have proposed that the fields in crops be seeded to permanent pasture, but this proposal would not have been related to the total picture of farm operations. The SCS method is too narrow, too single purpose, argue the agricultural economists; and because it is so narrow it does not accomplish even its single purpose as well as would a more comprehensive method.

In the Department of Agriculture it is a group within the Soil Conservation Service who have supported the engineering approach to watershed programs, and technicians of the Bureau of Agricultural Economics and the Secretary's Office who have advanced the more comprehensive view. The economists on the Secretary's staff have considered a broadly conceived basin plan as a framework within which the farm planning approach could be applied to individual farms. Secretary Brannan was particularly anxious that the Department evolve broad river basin plans for agricultural development and flood control; to achieve this he sought to have the project reports prepared cooperatively by many agencies of the Department under direction of his own Office, rather than by the Soil Conservation and/or Forest Services alone.

The most ambitious and comprehensive of the reports developed under Brannan's leadership was that on the Missouri River Basin Agricultural Program, the first to be sent to Congress after World War II. This report was prepared by a field committee of representatives of nine agencies of the Department, under the leadership of the Secretary's Office. The land

grant colleges and universities, the Great Plains Agricultural Council, and other agricultural and forestry agencies of the States in the Missouri Basin participated. Secretary Brannan called this report an "innovation," "a new and outstanding landmark in planning," for its proposals would be "carried out under a *comprehensive, unified,* and *multiple purpose* plan especially designed to meet the unique needs of the Missouri Basin." The first purpose of the report is to "complement and protect" flood control, irrigation, power, navigation, and other projects that have been authorized for the Missouri Basin under the Flood Control Act of 1944 (the Pick-Sloan Plan). Since the comprehensive view of watershed planning has been used, however, this first purpose is complemented by others---for example, to "protect, conserve and improve the lands of the basin for more efficient production and use." To accomplish all of the purposes a cost of $8.5 billion is estimated---$3 billion allocated to the Federal Government, $.5 billion to State and local governments, and $5 billion in costs to landowners and operators.[14]

Directing the Missouri Basin Survey was no mean task for the Secretary's Office. The Soil Conservation Service opposed so broad an orientation. And most of the USDA agencies were poorly organized to operate on a project basis, especially a project whose bounds did not correspond to State and county lines. Gaining acceptance for the Missouri Basin Report from the USDA agencies, the Budget Bureau, and the Congress, has proved an even more difficult task. The many difficulties encountered are responsible in large part for the fact that the watershed reports prepared since have been less ambitious in their comprehensiveness, though they have continued to be considerably broader than would have resulted from a simple flood control engineering analysis. Thus, the reports on 15 watersheds, submitted to Congress between October 1951 and Julv 1952, are the product largelv of the SCS, though the Office of the Secretary, with varying degrees of success, guided the work, and field representatives of other agencies of the Department, such as State offices of the Production and Marketing

[14]Missouri Basin Report, pp. iii, 29-30. Emphasis added. This Report is so broad in scope that its authors cite three major and several minor authorities as the bases for the coordinated effort which produced it. Of the major authorities, one is the Flood Control Act of 1936. The other two define the Department's activities in the field of soil conservation generally.

Administration and of the Cooperative Extension Service, as well as Washington offices of these agencies were consulted and given an opportunity to review the reports. They include, in addition to measures designed to stabilize small watercourses, proposals for pasture establishment, fertilizing, farm ponds, wildlife area development, fire protection, etc.; and these measures are to be carried out by a variety of means, including extension education, incentive payments, and technical assistance.

THE BUDGET BUREAU OBJECTS

The rationale of even these more limited reports has failed to earn the approval of the Budget Bureau or the Congress. It contains a series of relationships to which, for different reasons, these units object. In essence the objectives as well as the programs recommended in the watershed *project* surveys cannot be distinguished definitively from *national* conservation and land productivity programs. Take for example the estimated benefits of the projects, as figured by the Department to comply with the project reporting requirements of the 1936 Act. Only five to twenty per cent of the benefits are for offsite flood control---i.e. benefits that result from the prevention of flood damages downstream from the lands on which the improvements are installed. Eightv to ninety-five per cent of the benefits accrue directly to the farmerson whose lands the many improvements are made, in terms largely of increased agricultural production, or more precisely, increased land productivitv.[15] Thus, the watershed *projects* overlap and duplicate the several *national* agricultural programs which are designed to improve land productivitv-the Soil Conservation program, the Agricultural Conservation Program, and to a degree the Extension Education and Farm Credit programs. Furthermore, the specific measures recommended in the *project* reports-terracing, strip cropping, forestry and range management, for example--and the techniques for installing and maintaining these--technical assistance, extension education, incentive payments--are very much the same as those used in the *national* programs. In effect, the watershed surveys provide for

15 Ref. (A), p. 38.

One--a continuation of the normal national conservation programs for the area;
Two--an acceleration of these land treatment programs so that a certain level of conservation and productivity can be attained at an earlier date than would otherwise be the case;
Three--a new program for stabilizing small watercourses.

Part Three of the combination is the most unique. A greater percentage of its benefits than those of Parts One and TWO results from offsite flood prevention;[16] and its measures and techniques differ somewhat from those used in the national programs.

The Budget Bureau and the House Committee on Public Works have sought, in different ways, to limit authorization of watershed projects to the unique Part Three alone. The Secretary of Agriculture, on the other hand, has insisted on the combined authorization of Parts Two and Three (Part One is already authorized and underway). The three parts, he points out, are integrally connected. The small watershed structures and channel improvements (Part Three) cannot be installed on a watershed until the farmers have "substantially tied down" the land through the treatment measures proposed in Parts One and Two.[17]

"The Department, in formulating its watershed programs, seeks to adapt, intensify and accelerate proper land use and treatment. In some ways this is similar to what we are doing under the national programs of the Department. But. there is a vital difference. In watershed programs we work first on the watersheds with the biggest problems and where there is the biggest local interest in helping to meet them; and in each watershed we design and carry out a program which is properly balanced to give the greatest effects in reducing damages by erosion, floodwaters, and sediment. This procedure insures that necessary improvement work on watershed land is properly timed with the installation of supplemental runoff and waterflow retarding structures.

"The fact that we are recommending many of the same kinds of measures in our watershed programs as we advocate in our going national programs seems, however, to have caused some confusion.

[16]The analyses in the USDA reports do not make this point clear; but it is a fairly apparent and quite reasonable assumption.

[17]See Ref. (B) pp. 159-64 and Ref. (D), pp. 446-7. The quotation which follows is from Ref. [A), p. 6.

Actually, there is no inconsistency between the two kinds of programs. The land-treatment measures are the very essence of an adequate watershed program. ... Total erosion, floodwater, and sediment damage prevention and other benefits that can be achieved by adapting, intensifying, and accelerating the application of land-treatment measures to meet the peculiar needs of each watershed fully justify the recommendations we are making in our watershed survey reports to accomplish this end."

The Budget Bureau has raised objections to authorization of the project surveys because this might introduce "confusion in the presentation of the Department's budgetary program."[18] Following its parochial and statutory interest in the preparation and presentation of the President's Budget,[19] the Bureau fears the budgetary consequences of allowing Congress to authorize on a *project* basis, measures which may be carried out under existing authorizations for *national* programs. The most obvious of these consequences as far as Budget is concerned would be pressure for increased appropriations. Thus, if Congress were to authorize the Department's surveys (Parts Two and Three), then the Department could request funds to carry out this authorization under an appropriation entitled '*Flood Prevention," which would be in addition to the appropriations for the national conservation programs. If, on the other hand, Congress were to authorize only the unique engineering portion of each survey (Part Three), then the Department would be forced to request funds for the acceleration of land treatment on the watershed (Part Two), under the regular appropriations.

Secretary Brannan objected vigorously to the Budget position. He saw it as an effort to destroy the comprehensive approach which he had worked so hard to achieve within his own Department. Budget's position appeared to sacrifice the opportunity for a new broad policy for watershed programs for the advantage of consistency in budgetary presentation. Brannan put it this way:

"The Department has been confronted with proposals to restrict

18 **See Budget Bureau letters published in survey reports; for example,** that **in report on Brazos R. Watershed, Tex.**

19 **See this author's "In Accord with the Program of the President?" In** *Public Policy, Vol.* **IV, 1953.**

its recommendations for authorization of work under the flood-contolact to structural measures and to depend upon other programs and authorities for the land treatment work. We oppose such a course because we feel that the recommendations and authorizations should include a complete and balanced program of all needed kinds of improvement measures on a watershed basis and that this is necessary to set the stage for a balanced schedule for installation of measures from the timing standpoint.

"Accordingly, it is the position of the Department that it cannot meet the responsibilities imposed upon it by the flood-control acts or conform with the intent of Congress in enacting this legislation unless its investigations, reports, and recommendations are made with a view to developing complete programs of watershed improvement and protection. The test of whether a measure should be recommended for authorization under the flood-control acts is not whether it may be carried out by this Department under some other authority than the flood-control act but whether such measure is for the purpose of runoff and waterflow retardation and soil-erosion prevention. This is the criterion which this Department must follow in carrying out the objectives of the flood-control act. Any other approach would in our view thwart the plainly expressed intention of the Congress.

"In our opinion, merely stepping up the rate of appropriations for land-treatment measures is not enough. To get the right kind of job done, it is necessary to do it on a planned basis-first, a program for the entire watershed and, secondly, within the framework, work plans for individual subwatershed units. Then, on the basis of such watershed plans, we would seek appropriations to carry out the plans so that each type of measure, both the land-treatment measures and the supplemental structures, would be installed in their proper sequence and relation to one another. This is why we recommend in our survey report all of the kinds of watershed measures that go to make up an integrated program for accomplishing the objectives of soil-erosion, floodwater, and sediment-damage prevention."[20]

Though not stated explicitly, the Secretary also felt that Budget's approach put the Department in an impossible position with Congress and thus jeopardized any realization of a broad watershed program. Over a great many years the Department has worked out satisfactory arrangements with Congress (and other groups) for dividing up between the States

[20] Ref. **(A), p. 40.**

funds appropriated for national programs. The several hundred million dollar annual appropriation for the national Agricultural Conservation Program serves as an example. The allocation to each State, and indirectly to each county, is today based on an estimate of the conservation needs of the State for the practices included in the program. To insure, however, that the proportion of the funds allocated to any State does not vary significantly from year to year, Congress has provided that it may not be reduced by more than 15 per cent from that available in the previous year. And as a matter of practice the Department has seldom effected reductions of this magnitude. In the case of appropriations for the Soil Conservation Service. there is no legislative allocation among the States, but a certain level of assistance to the districts has come to be accepted. For Extension Education, funds are distributed to States on the basis of a series of formulae which include the variable factors of rural population and farm population, and certain fixed amounts prescribed in basic legislation.

By requiring USDA to seek funds for land treatment under the regular appropriation headings the Budget Bureau would force the Department. to abandon its present methods of fund allocation for several national programs and seek repeal of any legislative limitations which would impede this. The ACP appropriation, for example, would include a proportionately larger allocation of funds for those counties and States within certain watersheds where an accelerated program is planned. The Department's justification for this, however, could not be the authorization of such acceleration under a Flood Control Act, for this the Budget would prohibit. The justification would have to be made under the law providing for a national program. The Secretary's Office has argued that this arrangement invites failure for the watershed program. It would be very difficult to convince Members of Congress from States which do not have accelerated programs to vote extra money for those that do, especially since great pressure can be anticipated to keep the total ACP appropriation at a level no higher than the present, so that any funds voted for accelerated programs would come out of those that would otherwise be available for allocation to all States under the national program. If, on the other hand, the Department could secure authorization

of the accelerated programs under Flood Control Law, then it would have considerably less difficulty winning Congressional approval for funds carried under a separate appropriation heading. In other words, the Department has argued that it cannot adapt its operations to a project-by-project program *if* the Budget continues to hold to its position. But the Budget has remained adamant.

HOUSE COMMITTEE ON PUBLIC WORKS OBJECTS

The most severe criticism of the rationale of the watershed surveys has come from the Subcommittee to Study Civil Works of the House Committee on Public Works.[21] Whereas the Bureau of the Budget objected to the comprehensive surveys because they impaired clarity and purity in budgetary presentation, the House Committee on Public Works, following its parochial and statutory interests, objected because these surveys impaired the purity of the public works approach to flood control and consequently the clarity of the Committee's jurisdiction and that of the Corps of Engineers, the agency with which the Committee works most closely. Like Budget, the Committee on Public Works points out that "flood control" benefits, strictly defined, constitute a small portion of the total anticipated benefits from the projects recommended by the Department of Agriculture. Also, the Committee appears to be quite unimpressed with the desirability of a comprehensive approach and with the relatedness of the several parts of each of the USDA surveys. In effect, the Committee would like to assume responsibility for the structural measures and absolve itself from any concern with land treatment, leaving this to the Committee on Agriculture.

Thus, "the Subcommittee believes that flood control programs of the nature contemplated in the flood control acts should continue to come before the Committee on Public Works, but is opposed to having land productivy measures, a non public *works function,* included to such a large extent."

Referring to the fact that the Department had tried to get a hearing before the Committee on Agriculture for several of its survey reports, the Committee on Public Works said:

[21] **See its report (Ref A). Quotations that follow in this section are** from the **report unless otherwise indicated. Emphases are added.**

"It would appear that the Department of Agriculture's action was actually based on its anticipation that the Committee on Public Works would be inclined to consider only *public works features* and would not be willing to load down flood control legislation with authorizations that were not strictly relevant to *responsibilities of the Committee.* This anticipation is reasonably sound since the Committee had objected to this attempt to force it either to take no jurisdiction over a program at all or be *obliged to* pass on agricultural *measures* as well as flood *control works."*

The Committee would clarify the present confusion by limiting the flood control authority of the Department of Agriculture and expanding that of the Corps of Engineers:

"The Subcommittee believes that the supervision of Federal improvements for flood control should remain in one agency and the responsibility should not be dissipated by the authorization of uncoordinated segments of flood control work by other agencies."[22]

Present authority of the Department to make flood control surveys in accordance with the Act of 1936 would be cancelled. Instead the Corps of Engineers would be directed to "include in their reports, with their comments thereon, a statement from the Secretary of Agriculture as to specific *structural improvements,* their costs, purposes, and benefits, recommended by him to provide related runoff and waterflow retardation and soil erosion prevention works, as supplementary to any program recommended by the Chief of Engineers." The Corps would receive all appropriations for flood control surveys and would transfer to the Department funds necessary to finance its studies.

As for the non-structural aspects of Agriculture's programs, "the Subcommittee recognizes that some legislation, presumably sponsored by the Committee on Agriculture, would be necessary to provide for an accelerated program of soil conservation and water retardation work on upstream lands";[23] but it feels that this is not very closely related to flood control :

22 82nd Congress, 2nd Session, House Committee on Public Works, Subcommittee **to** Study Civil Works, Statement on House Committee Print No. 22 (mimeo., n.d.), p. 3.

23 Statement of Rep. Robert E. Jones, Jr., Chairman, Subcommittee to Study Civil Works, entitled "Press Comment on Jones Subcommittee Report on Flood Control Program of the Department of Agriculture" (mimeo., n.d., but Feb., 1953).

"The Subcommittee considers that soil conservation in itself is a most important activity. The welfare of the nation requires that sound practices for the conservation of the fertility of the soil be undertaken. The need is sufficiently important that it does not need to be disguised as flood control. The unnecessary confusion introduced by improperly commingling the two phases of conservation must stop."

HOUSE COMMITTEE ON AGRICULTURE IS AMBIVALENT

The watershed program has presented real difficulties for the House Committee on Agriculture; for that Committee is not used to dealing with *projects*; but rather, with ***national*** agricultural *programs*. Also, the Committee has never been certain of its jurisdiction, if any, over the project reports and over any legislation that might result from them. The eleven watershed surveys submitted to Congress before the end of World War II were referred without question to the House Committee on Flood Control, predecessor of the Committee on Public Works; and it was this committee and its counterpart in the Senate which recommended authorization of the projects in the Flood Control Act of 1944. The comprehensive character of the post-war reports gave rise to the question of committee jurisdiction. The first and most comprehensive, that on the Missouri Basin was referred to the Committee on Agriculture. The next eleven survey reports, submitted to Congress over two years later, were referred to the Committee on Public Works, after some complicated parliamentary maneuvering involving the Soil Conservation Service and the Office of the Secretary in the Department of Agriculture and the Committees on Agriculture and Public Works and the parliamentarian in the House of Representatives. Finally, the last surveys submitted to the 82nd Congress, those on five watersheds within the Missouri Basin, were referred to the Committee on Agriculture; they were treated as supplements to the comprehensive Missouri Report.

Upon receipt of the Missouri Basin Report, the Agriculture Committee, and its Subcommittee on Watershed Programs chaired by Mr. Poage of Texas, began to consider the types of legislation that might be prepared to accomplish the work

recommended in the surveys.[24] One alternative was for the Committee to prepare omnibus watershed flood control acts in which the Congress would approve and authorize USDA survey reports in the same manner that the Committee on Public Works prepares rivers and harbors and flood control bills authorizing the Corps' survey reports. It appeared to many in the Department of Agriculture that the Committee could and would follow this course; and that in this procedure the Agriculture Committee would be more favorable to the Department's programs than the Committee on Public Works. This accounts in large part for the parliamentary scramble over referral of reports, and for the following complaint of the House Committee on Public Works:

"Apparently as an outgrowth of criticisms by the Public Works Committee of the form and content of the current type of report, elements of the Department of Agriculture have determined that their proposals have greater chance of success if handled by the Committee on Agriculture. The statement has been made that the Department of Agriculture considers the Committee on Agriculture more receptive to the programs and so anticipates that appropriations will be more readily forthcoming."[25]

But the Committee on Agriculture soon made it clear that it was not prepared to deal with the watershed problem on a project authorization basis. Instead, as is its wont on other agricultural matters, the Committee preferred to deal with watershed flood control by legislation authorizing a national program. The details of this proposed legislation will be spelled out later.

WATERSHEDS V. DAMS

To what extent, if at all, has the upstream-downstream controversy contributed to the views of the Budget Bureau and the Congressional committees and to the failure of the Department of Agriculture to absorb successfully the watershed program initiated with the Act of 1936? The nature of this public debate should be familiar to all readers.[26] On the one hand are

24 For a brief summary of the Committee's activities in this regard see House Report 2222, 82nd Congress.

25 Ref. (A), p. 38.

26 An excellent analysis of this problem is found in Ref. (A). Quotations in this section, unless otherwise cited, are from this report.

those who consider flood prevention as a problem that begins and ends where the rain falls--on the tributary watershed. A program to "restore nature's reservoir," the soil, so that it can hold the rain and check the runoff, supplemented where necessary by upstream "little dams," will not only prevent the large amount of annual flood damage that occurs on farm lands in the watershed, they argue, but will also make unnecessary the construction of large storage reservoirs on main channels. Watershed projects can either stop the floods completely or can so delay them that when the floods reach the cities they can be channeled safely through levees alone. Watershed projects instead of big dams, is the program of these proponents. On the other hand there are those who argue that in most areas of the country watershed programs will contribute little to downstream protection of large cities; that their major effect is the prevention of flood damages to the rural lands on which the watershed measures are applied; and that this effect is measured largely in terms of the increased agricultural productivity of these watershed lands. Even if "nature's reservoir" were in the most perfect of conditions it could not retain all of the rain that falls in heavy storms. There were floods in the Mississippi Valley before white man started plowing up the ground. Storms move around so irregularly in any watershed that great numbers of the little dams are likely to be outside of the area of any particular rainfall and thus provide no protection at all.

Proponents of the first view include farmers facing inundation by mainstream dams, private utilities which oppose large Federal dams that might produce public power, "anti-big-anything people," and certain conservation organizations and groups of sincere watershed farmers. Proponents of the second view include city residents and business men and, by their official pronouncements, *all* of the interested agencies of the Federal Government. The Department's survey reports claim very little in the way of downstream flood protection. Remember that only 5 to 20 per cent of the benefits are offsite; 80 to 95 per cent are on the watershed lands'. Also, officials of the Soil Conservation Service and of the Secretarv's Office have tried to make it clear to committees of Congress-ever since 1942 that upstream works cannot give adequate protection to a river basin and are not a substitute for downstream dams and

channel works needed to protect urban centers.[27] The historic importance of this conclusion by USDA should not be overlooked. Almost since the turn of the century friends of the Forest Service and conservation organizations had been proposing land treatment as a means of controlling major floods. In 1936 their great fight was won in a sense; the Department of Agriculture was given an important, if poorly defined, role in the national flood program. Between 1937 and 1941 the Department strove to make the big stride from conviction to science and, after much soul searching and some painful internal altercations, reached the conclusion that land treatment could not reduce major floods very much. This conclusion came quietly in the restrained language of the technical people, leaving public opinion almost untouched.

In the light of these facts can it be said that the watershed v. dams controversy has contributed to the Department's failure to get an active watershed program underway? It may be true that the public controversy has given reviewing authorities, such as the Budget and Congress, an excuse to delay action. It may be also that active opposition by the dam building agencies and their friends to any groups that advocate watersheds instead of dams has been interpreted mistakenly by many as opposition to the Department's watershed program. Controversies such as this breed confusion, and confusion can do great harm to a cause which requires positive legislation. Furthermore it is true that the Corps of Engineers and the House Committee on Public Works have expressed serious doubts about the engineering and economic adequacy of the little dams proposed as part of Agriculture's program for stabilizing small watersheds.

On the other hand, the Department has profited from the activities of the watersheds-instead-of-dams groups. They have been able to focus national attention on the paucity of Federal funds spent for watershed flood control in contrast to those

[27] See in addition to Ref (A), testimony of Chief, SCS, in Ref. (D), p. *444;* of Dy. Chief, SCS, before 83rd Congress, 2nd Session, House Subcommittee on Agricultural Appropriations, Vol. 4, pp. 1872-3; of assoc. Ianduse coordinator, USDA, before 78th Congress, 2nd Session, House Committee on Flood Control, Hearings on Flood Control, p. 1119. Also, Howard L. Cook, "The Effects of Land Management Upon Run-Off and Ground-Water," in *Proc. U. N. Sci. Conf. on the Conservation and Utilization of Resources* (1951), Vol. IV, pp. 193-202, and the references cited therein.

spent for big dams. To a considerable degree it is they who successfully impressed upon Congress in I953 the urgency for action on watershed legislation. Though the Department in Washington has continually rejected the platform of these groups, there is evidence that certain SCS officers in Washington and the field have encouraged it. After taking considerable testimony on this point the House Subcommittee on Civil Works concluded somewhat obliquely: "... the Subcommittee has not been able to understand why the people in the watersheds have continually supported the proposition that the Department can give them total flood control over the entire river if somewhere along the line the Department did not lendthem some encouragement." The Committee pointed to the case of Kansas and Tuttle Creek Dam and cited evidence that the "agencies have contributed to confusion over the effectiveness of upstream works." Commenting on the influence of Elmer T. Peterson, a prominent spokesman of the watersheds-instead-of-dams groups, the Committee said:

"Other elements of the Department ["other" than the Secretary's Office], how-ever, have expressed the opinion that while Mr. Peterson and his followers are perhaps overly zealous and inclined to over-exaggeration, probably the upstream program would languish in the planning stage if the more rabid supporters of the watershed scheme did not arouse the farmers, the President, and the Congress."

On balance it is my opinion that the watershed v. dams controversy has not been a significant factor in the failure of the Agriculture Department to gain approval for an active program of watershed flood control. And in any case, the importance of this controversy cannot compare to that of factors traced previously.

20 JANUARY 1953--A COLOSSAL IMPASSE

As Secretary Brannan and the Truman Administration departed Washington on 20 January 1953 the situation on watershed flood control could be described as a colossal impasse. The Department had submitted to Congress since resumption of survey activities after World War II project reports on 15 watersheds. Ten of these were before the H&se Committee on

Public Works whose special subcommittee had criticized them severely, failed to recommend their authorization, and proposed an end to the procedure under which they had been prepared. Reports on 5 watersheds were before the House Committee on Agriculture which had decided against adopting a project authorization approach to the problem but had not worked out a satisfactory alternative. And there were jurisdictional conflicts and jealousies between the two legislative committees.

The Budget Bureau, as the President's staff agency, had. done nothing positive to help get the watershed program underway. As the Department viewed Budget's actions, they were entirely negative and contributed to the impasse. There was no real agreement within the Department of Agriculture; the Office of the Secretary and the SCS were at odds over the rationale and strategy of the program.

The Department's postwar "new look" on the watershed survey-the comprehensive report-was under vicious attack at all points. The Budget Bureau had inserted the scalpel into the land treatment portion of the reports; and the House Subcommittee on Civil Works had given it a healthy twist. The Corps of Engineers had pricked the skin of the small watercourse portion of the reports; and the House Subcommittee had inserted the scalpel deep. Finally, the Budget Bureau and the House Committee had severed the two parts with a sharp blade so that combined or comprehensive consideration was impossible

At the very time that the impasse was becoming immense in proportions, public demand for some sort of Federal action on the watershed conservation front was rising rapidly. Robert Salter, Chief of the SCS, reported to Congress early in 1953 on the growth in the last two years of local interest in watershed programs. His organization had made a survey in January of 1953 and had found more than 300 organized watershed associations (i.e. those having elected officers and boards of directors and bylaws) and more than 500 informal watershed groups. The 300 organized associations covered 350 million acres and about 1.5 million farms and ranches; thev were well distributed geographically; and almost 50 per cent of them had legal status of one form or another. Many of these groups were misguided, to be sure: "Of course, there are some people out there who mis-

takenly believe these upper watershed programs will effectively control these enormous floods, which they will not do"; but they were demanding some sort of action.[28]

The impasse was so great that Secretary Brannan and President Truman in the Budget for fiscal year 1954, recommended that Congress appropriate funds to initiate action on 7 new watersheds, which were the subject of survey reports pending before the House committees (6 reports were before the House Committee on Public Works; 1 before the House Committee on Agriculture). They proposed that the work be carried out under authorities already available to the Department, since **the** reports had not been authorized under the Flood Control Act. This recommendation was eliminated from the Budget by the new Administration, which further proposed a reduction in the appropriations for continuing work on the 11 authorized projects, and a heavy cut in the funds recommended for continuing the Department's survey work.

It was in this atmosphere that Representative Hope opened Agriculture Committee hearings on "Conservation and Water**shed** Programs" on 28 April 1953. In his introductory state**ment he** said:

"We are convinced, in short, that we have reached the time for action in our upstream soil conservation, water utilization, flood prevention program. We hope that these hearings will help us to chart the course of that activity with certainty. . . .

"Under the specific authorizations of the Flood Control Act the Department of Agriculture has expended some $18 million in making studies, surveys, and reports. These have resulted in the start of exactly 11 projects, which were authorized in 1944.

"In spite of the millions of dollars which have been spent in surveying and resurveying virtually every major watercourse in the United States, we are no nearer action on most of them than we were 17 years ago. In spite of thousands of conferences between representatives of agencies who agree on broad plans for river valley development, we are no nearer agreement on the practical blueprints for action than we were before the Flood Control Act was passed.

"**It** seems clear to us, therefore, that now is the time to begin to put some of our plans into action and we hope that these hearings

[28] Ref. (D), pp. 447,442.

will give the Committee and the Congress a clearer view of just what that action should be."[29]

The action taken to cure the evils of the Act of 1936 will be discussed in the following section. Just remember here the major cause of failure: The Department had been unable to adjust to a project-by-project, in contrast to a national, approach to an agricultural problem. This is attributed to certain conflicts within the Department as well as to the Department's relations with other units of the Executive branch, the Congress, and its clientele. The Secretary's Office had sought to mesh the watershed approach with the national conservation approach by developing "comprehensive, unified, multiple purpose plans" through which the Department's conservation activities could be "tailored" to meet the needs of major agricultural regions. The Soil Conservation Service had taken a more limited or single purpose view of desirable watershed planning and in doing so reduced, though it could not eliminate, the meshing problem. Augmenting this basic difference were conflicting views on how watershed conservation should be installed-by what practices and what methods of dealing with farmers; how it should be authorized by Congress; what agencies should do the planning-whether it should be a joint undertaking of several USDA bureaus or assigned to a single bureau;[30] and how coordination with other Federal agencies should be achieved.

THE USDA AND THE FIRST SESSION OF THE 83RD CONGRESS

On 1 April 1953 Secretary Benson transferred to the Soil Conservation Service general responsibility for all work under the Flood Control Acts and abolished the land and water resources staff in the Secretary's Office.[31]

On 23 July 1953 the House and Senate approved a Conference Report on the Agriculture Department Appropriations Bill which included an item of $5 million to start a "pilot plant" program of watershed protection on 50 small watersheds in

29 Ref. (B), p. 3.

30 The Soil Conservation and Forest Services feared that joint planning, requiring coordination of activities, might reduce cherished agency autonomy.

31 This staff was a direct descendant and the last remnant of the Office of Land Use Coordination, organized under the leadership of Milton Eisenhower.

28 States. There was no special legislative authority for this; so the broad provisions of the soil conservation Act of 1935 were relied on. How did an economy-minded 83rd Congress come to initiate an appropriation for a new, unbudgeted, and in a sense unauthorized agricultural program? The November election in Kansas' First Congressional District is important in this connection; and it symbolizes the answer. Albert Cole, Republican, had represented this District in northeast Kansas since 1945. In each of his four elections he had received almost twice the votes of his Democratic opponent--roughly 70 to 35 thousands. Cole ran for the 83rd Congress, seeking a fifth term; but in the year of the great Republican sweep of the nation he lost to a Democrat by a vote in thousands of 65 to 69. For the first time in historv the First District of Kansas was represented by a Democrat. Albert Cole's defeat has been attributed to his support of the Army Engineers and their Tuttle Creek flood control dam under construction on the Big Blue River. His adversary, Howard Miller, president of the Walnut Creek Watershed Association, opposed this dam which, when in full use, would flood out tens of thousands of acres of rural land in the First District to help provide flood protection for Manhattan, Topeka, and Greater Kansas City. In opposing the dam Howard Miller supported counter proposals to control flood waters on the Big Blue by soil conservation and land use measures. Cole had himself opposed the Tuttle Creek dam until some time after the great floods of 1951 when he became convinced that the watershed program, though important of itself, would not provide adequate protection for the urban centers; and his position was upheld by the Department of Agriculture in Washington though there is evidence that certain Department representatives in the area lent support to Miller's position. But the details are not important here. The point is that Albert Cole's defeat alerted many in Congress to the political significance of the public interest in watershed programs; and it, along with the advent of a new Administration which promised to emphasize "local interests" in resources programs, gave an impetus to the groups seeking new watershed legislation.

On 4 February 1953 the Water Management Committee of the National Association of Soil Conservation Districts, meet-

ing in Omaha, Nebraska, voted that the President of the United States should recommend to the Congress new legislation establishing uniform standards for a watershed flood control program. It voted also, however, "to immediately readjust the 1954 budget of the Department of Agriculture, without increases, to provide for assistance in flood prevention and related land treatment in small watersheds upon application of local agencies."[32] The NASCD was soon joined in its resolves by others interested in watershed legislation and together they formed the National Informal Citizens Committee on Watershed Conservation. Raymond A. McConnell, Jr., editor of the *Lincoln* (Nebraska) *Evening Journal* and co-chairman of the Salt-Wahoo Watershed Association, became leader of this informal group. At his suggestion they met in Washington on 25 February for discussions with President Eisenhower, the Secretaries of Agriculture and Interior, the Chief of Engineers, and the Director of the Budget. Thev proposed that a sum be made available directly for a small wateshed program. Mr. McConnell reports that "at that time we urged upon the President that true economy lies in this type of approach and its complete consistency with the philosophy underlying the new Administration."[33]

The group did not win their point immediately, for the revised Eisenhower Budget failed to include any funds for the small watersheds; in fact it cut back quite heavily on all watershed activities. However, on 29 April, the last day of scheduled hearings on Agriculture appropriations, Representative Hope, Chairman of the House Agriculture Committee, and Senator Carlson, both from Albert Cole's State of Kansas, appeared before the House Committee on Appropriations and made an urgent request for a $5 million fund to start work on 50 small watersheds. With their active support and that of Mr. McConnell's committee, many of whom returned to Washington at the time of the appropriation hearings, the money was voted by Congress.[34]

The position of the Eisenhower Administration on this somewhat unusual procedure is not entirely clear. Congressman

32 See Ref. (B), pp. 154-5.
33 Ref. (D), p. 1056.
34 Material on the legislative history of this appropriation from Ref. (C), pp. 581-93, 610-50; Ref. (D), pp. 1052-62, 1192-6; and the committee reports.

Hope **told** the House Committee on Appropriations that the program had not been approved by the Department of Agriculture or by the Budget Bureau. Senator Carlson told the Senate Committee that: "Before Congressman Hope and I presented this proposal to the House Committee, we discussed the matter with the President of the United States and officials in the Department of Agriculture. We have the enthusiastic approval of the President and have had the full cooperation of the Department of Agriculture." Apparently, the White House was more receptive to the proposals than the Department.

Can this new small watershed program be said to constitute an element in a long range solution to the impasse of 1953? Or is it more nearly an isolated special purpose action? Representative Hope in presenting his proposal, the Soil Conservation Service in supporting it, and the House Committee on Appropriations and the House-Senate Conference Committee in approving it, all spoke of a "pilot plant" or "demonstration."[35] There are good reasons to believe, however, that the "demonstration" was conceived by many of its supporters as a start on a new permanent program rather than a laboratory experiment. In the first place, it is similar in most respects to the proposed permanent legislation introduced by Representative Hope on 27 April. Mr. Hope called for hearings before the Agriculture Committee on this bill the very next day; and on 29 April, apparently with the support of the Agriculture Committee, he appeared before the Committee on Appropriations, "convinced that the country is far ahead of the Congress on this subject." Since there was no specific legislative authority for the appropriation proposal and its supporters were forced to rely on the broad provisions of the Soil Conservation Act of 1935, since specific legislative authority was, however, pending before the Committee on Agriculture, and since the first session of the 83rd Congress was bent on economy and not amenable to appropriating funds for new legislative programs, it probably was essential for purposes of strategy, if for no other reasons, to call the proposal a "pilot plant" or "demonstration."

Second, some of those who used the description, "demonstration," (including Mr. Dykes of the SCS, Mr. McConnell, and

35 For Hope, Ref. (C), pp. 588, 646; for SCS, Ref. (C), p 643; for House Com. Approps., House Rpt. 422, 83rd Congress; for Conference Corn., House Rpt. 900, 83rd Congress.

in part Mr. Hope) did not mean experiment, but rather an effort to demonstrate the advantages of a watershed program to the entire nation through a series of small projects "widely scattered," "into areas where all the **people could see** the work," "from South Carolina to California and from Minnesota to Texas."[36]

Finally, the important Congressional leaders urged the basic significance of the appropriation. Chairman Hope of the legislative committee said to **the Appropriations** Committee : :I believe that this appropriation, if made, will constitute a *landmark in* the history of ***conservation legislation*** **in this** country. I implore you to give it favorable consideration." And Chairman Andersen of Agriculture Apporpriations Subcommittee said to his colleagues and to representatives of the SCS: "I might say here that I hope that this is the beginning of a long range program which will provide for a lot of this necessary work. This has been too long delayed."[37]

It is safe to conclude, then, that the $5 million appropriation was intended as a prominent first step in a solution to the impasse we have described. As such we should determine if it encompasses the ingredients of success.

A NATIONAL PROGRAM?

To what extent is the new program a national one which the USDA can administer without violating its traditional relationships? It proposes to distribute its benefits widely. The concern is with small watersheds, and a large number of these can be included in an annual budgetary program of reasonable size. The $5 million voted for fiscal year 1954 is to be spent on 50

[36] For Dykes Ref. (C) p. 642; for McConnell, Ref. (C), p. 36; for Hope, Ref. (C), p. 585.

Technically it is highly doubtful that the watershed "pilotplants," as planned by SCS, could ever be used to determine the effects on flood runoff of the measures installed. To do this it is necessary to measure rainfall and runoff over a period of years both before and after the program is installed.

It is interesting to note here that the "demonstration projects" developed by the Soil Erosion Service and the Soil Conservation Service in its earliest days came to he of strategic importance in encouraging the formation of soil conservation districts after the States had passed their district enabling acts. The demonstration project approach, in other words, has worked once before to set off a rapidly expanding program.

[37] For Hope Ref (C), p. 585; for Andersen, Ref. (C), p. 641. Emphasis added.

watersheds in 28 States, fairly well distributed over the major Agricultural areas of the United States.[38] The operating unit for the program is the soil conservation district, and since in most States the boundaries of districts correspond to, or are included within those of counties and in no instance do they cross over those of States, the program appears to conform to a workable and accepted administrative pattern for the Department. In mid-September the SCS compiled a list of 39 watersheds for which negotiations with the local sponsoring agencies were well along. For 31 of these the sponsoring agencies are single soil conservation districts, and only 7 of the districts have jurisdiction over areas that cut across county lines. For 6 watersheds, the sponsors are 2 soil conservation districts jointly, and in only one case does the jurisdiction of the sponsors cut across county lines. For one watershed the sponsor is 3 districts jointly, and their jurisdictions are confined within county boundaries. The sponsor is an agency other than an organized SCD for only one watershed, and it is Mr. McConnell's Salt-Wahoo Association in Nebraska. Apparently the rapid spawning of formal and informal watershed groups, noted by SCS Chief Salter, has little to do with the administration of the new program. The well-organized SCDs have taken charge.

The program abandons the whole concept of individual project authorizations and with it the need for public works reports, benefit-cost ratios, and report clearances. Neither the language of the appropriation nor the reports of the Appropriations Committees mention the watersheds by name; considerable flexibility is left with the SCS. Though the Service may decide to use a very general form of the benefit-cost ratio as a means of internal administration, it is not required to defend the precision of these calculations before the Congress. At the present time (September 1953), the Department does not intend to submit small watershed reports to the Bureau of the Budget for project clearance under EO 9384, nor to the Federal Interagency River Basin Committee, though certain Budget staff members think that the Department should be required to do so.

[38] The number of watersheds is not prescribed in the appropriation language **and** will likely exceed 50 before all funds are committed.

A PROGRAM THAT WILL ENJOY LEGISLATIVE SUPPORT?

To what extent is the new program one that is likely to receive encouragement from the committees of Congress? The program was initiated by the House Committee on Appropriations at the urgent request of the chairman of the House Committee on Agriculture. A sympathetic Committee on Agriculture has assumed jurisdiction rather than an unsympathetic Committee on Public Works. The Agriculture Committee will soon consider Chairman Hope's bill which would repeal the USDA's watershed survey authority under the Flood Control Act of 1936, and instead provide a permanent authorization for the program now underway, thereby removing from it the descriptive qualification, "pilot plant."[39]

There are several respects in which the Hope bill differs from the current appropriations program, and it might be well to mention them here though some are likely to undergo modification in the legislative process. The bill requires that, before the Secretary of Agriculture commences any watershed work involving Federal assistance, he shall transmit a copy of the plan and the justification therefor to the Congress through the President. The Congress does not authorize or approve the plan; rather do its legislative and appropriations committees receive it for information. In supporting the appropriation for 50 watersheds this year the Soil Conservation Service submitted to the Appropriations Committees brief descriptions and justifications for each, and in a sense the Hope bill formalizes this normal procedure. However, the very formality will likely require the preparation of more rigid and detailed reports, and the Department will have to steer a careful course if it is to avoid that tortuous maze of public works project reporting with which it has been unable to cope in the past. In this connection two further provisions of the Hope bill should be pointed out. It requires that the Secretary determine "that the flood prevention and soil conservation benefits exceed their costs" before the Department participates in a watershed program. This appears to be a very general demand, but again

[39] The bill introduced on 27 April was H.R. 4877. It was similar to the Poage bill on which hearings had been held in the previous session of Congress. Minor revisions have since been made, and the bill was reintroduced on 1 August 1953 as H.R. 6788. The companion bill in the Senate is S. 2549, introduced by Chairman Aiken of the Committee on Agriculture and Forestry.

the Department will have to steer a careful course to avoid a rigorous application of public works project economics to its activities. Finally, the bill requires that the reports to Congress be transmitted through the President. This means through the Budget Bureau; and the Bureau has stated, in a letter to the Committee on Agriculture on the bill, that "the proposed projects would be reviewed bv the Executive Office of the President under Executive Order 9384." Unless the Bureau revises its approach to review of watershed projects, a permanent program may run into difficulties here. Also, unless the Budget desists from requiring that funds for watershed programs be divided up among several appropriation items, the Department may find it difficult to sustain the support of the Committees on Appropriations.

The Budget Bureau, as the President's agent for clearance of legislation, has recommended favorable consideration of the watershed bill by Representative Hope's committee; and the President in a message to the 83rd Congress in the closing days of its first session supported the bill's principles.[40]

A PROGRAM THAT WILL BRING CONCORD TO THE USDA?

To what extent is the new program one that will bring harmony to the Department of Agriculture? It concentrates responsibility in the Soil Conservation Service. This combined with the Secretary's order transferring the watershed functions of the Office of the Secretary to the SCS should end many disagreements of the past. But new ones can be foreseen. If the program grows rapidly it will mean more power for the SCS, and, more important, for the soil conservation districts. As such it strengthens these agencies as against Extension and the Farm Bureau in what Charles Hardin called "The Struggle for Power in Rural America."[41] Anyone familiar with Hardin's analysis can project the broad problems that will be raised by a significant increase in the power of the "land doctors" and their districts and can speculate on alternative solutions, but such analyses, projections, and speculations are beyond the scope of this paper.

40 Budget Bureau letter to Chairman, House Committee on Agriculture, 31 August 1953. President's message to Congress, 31 July 1953, House Doc. 221, 83rd Congress.

41 This is the subtitle of his ***Politics of Agriculture,*** *op. cit.*

A COMPREHENSIVE PROGRAM?

Admitting, then, that the strategy of success is built into the new program- it is national in scope and organization and will enjoy legislative and executive support-to what extent does it retain the substance of the postwar comprehensive approach to watershed conservation? The program for most of the 50 small watersheds includes measures for both acceleration of land treatment and small watercourse stabilization. The upstream engineering techniques for the stabilizing measures, for which the Federal Government will pay full costs except lands, are the same as those contemplated in the wider watershed surveys. But those for the accelerated land treatment are considerably more limited. Whereas the comprehensive programs contemplated Federal expenditures for a combination of technical assistance through the SCS, education through the Cooperative Extension Service, conservation payments through the ACP, and other means, the new small watershed programs provide for technical assistance through the Soil Conservation Service only. Mr. Hope has testified that of a total Federal cost of $29 million for the 50 watersheds (the $5 million appropriated in 1953 is a first year start), $24 million are for the structural measures and $5 million for intensifying land treatment, a ratio of roughly 5 to 1 in favor of the structures. Compare this to the Federal expenditures proposed in the most recent comprehensive watershed surveys :

Watershed	Federal Cost for Structures (in $million)	Federal Cost for Accelerated Land Treatment (in $ million)	Ratio of Structures to Land Treatment
Salt-Wahoo Crks., Neb.	62	**10.8**	**1:1.7**
Blue R., Kan.-Neb.	**17.5**	**39.2**	**1:2.2**
Upper So. Platte R., Col.	8.7	39.1	**1:4.5**
Osage **R.,** Kan.-Mo.	55.5	62.0	**1:1.1**
New program of 50 small watersheds	**24.0**	4.7	**1:0.2**

The new program, then, is considerably less comprehensive than that of the Brannan era. It is, in the words of its supporters, "a watershed program under the Soil Conservation Service," and as such it utilizes only the techniques and instrumentalities of that Service. It is hardly broad enough **to**

provide a framework for the farm and home planning approach to conservation on the individual farm.

Furthermore, since the new program places such great emphasis on the soil conservation district, the river basin orientation of the comprehensive surveys is fairly well forfeited. Most of the supporters of the new program envision a status in which the SCS is prepared to install a "watershed **program" in** *any* district that makes application and is itself prepared to meet the requirements for local participation. By scattering its services in this way, to make up a national program, the SCS could scarcely put together broad river basin plans, designed to complement the river engineering work of the Corps of Engineers and the Bureau of Reclamation. Of course, a close or complementary relationship between watershed programs and river developments has never been established in the USDA comprehensive surveys. Eighty to 95 per cent of the benefits accrue to the farm land owners; only 5 to 15 per cent are assignable to offsite protection. Under these circumstances forfeiture of river basin orientation may be inevitable and insignificant. In certain cases, however, the ultimate installation of small watercourse stabilizing measures over an entire watershed may so alter the pattern of flood runoff that it should be planned in conjunction with the main stem storage reservoirs and levees. Such coordinated planning would be extremely difficult to achieve under the new program.

In the light of this analysis, the new watershed program may well boil down to little more than a *national* program authorizing the SCS to provide an additional service to any of its customers, the soil conservation districts, who wish it. At present the Service is pretty well limited to providing the districts with technical assistance, and the new program will expand this only slightly. Under the new program, however, the Service can offer in addition to plan and to pay for the total construction costs (not including land) of small watercourse stabilizing measures in districts that initiate a request for these. Several districts may choose to join for the purpose of requesting the new service, and they may designate themselves a watershed association, but the basic operating unit will remain the district.

The Hope bill would authorize a program somewhat broader

in substance than that being carried out under the current appropriation. The Secretary of Agriculture could "cooperate and enter into agreements with and furnish financial and other assistance to local organizations." However, the other provisions of the bill and its general tenor, as well as the stated objectives of most of those who support it, suggest the strong possibility that the broader terms of the authorization, if enacted, may never be used. The die may well be cast.

BIBLIOGRAPHIC NOTE

The following documents, cited most frequently in this article, are identified throughout by the indicators noted in the left hand column.

Indicator	Document
Ref. (A)	82nd Congress, 2nd Session, House Committee on Public Works, Subcommittee to Study Civil Works, Report on the Flood Control Program of the Department of Agriculture, 5 December 1952, House Committee Print No. 22.
Ref. (B)	83rd Congress, First Session, House Committee on Agriculture, Hearings on Conservation and Watershed Programs, Series H.
Ref. (C)	83rd Congress, First Session, House Committee on Appropriations, Subcommittee on Agricultural Appropriations, Hearings on Departmen t of Agriculture Appropriations for 1954, Part 5.
Ref. (D)	83rd Congress, First Session, Senate Committee on Appropriations, Subcommittee on Agricultural Appropriations, Hearings on Agricultural Appropriatons for 1954.

Frequent reference is made throughout the article to the sixteen USDA watershed survey reports submitted to Congress after World War II. These reports are identified below and will be mentioned by name only in the text.

Watershed	Date Submitted	Referred to	Doc. No.
Missouri River Basin	9/29/49	H. Com. Agric.	H. Doc. 373, 81/1
Green R., Ky. & Tenn.	10/19/51	H. Com. Pub. Wks.	H. Doc. 261, 82/1
Grand (Neosho) R., Okla.	2/27/52	H. Com. Pub. Wks.	H. Doc. 388, 82/2
Brazos R., Tex.	3/10/52	H. Corn. Pub. Wks.	H. Doc. 396, 82/2
Pee Dee R., Va., N. C., & S. c.	3/10/52	H. Com. Pub. Wks.	H. Doc. 395, 82/2
Sny, Ill.	3/10/52	H. Com. Pub. Wks.	H. Doc. 398, 82/2
Queen Crk., Ariz.	3/10/52	H. Com. Pub. Wks.	H. Doc. 397, 82/2
Delaware R., N. Y., N. J., Pa., etc.	3/19/52	H. Com. Pub. Wks.	H. Doc. 405, 82/2
Sevier Lake, Utah	3/19/52	H. Com. Pub. Wks.	H. Doc. 406, 82/2
Scioto R., Ohio	3/19/52	H. Com. Pub. Wks.	H. Doc. 409, 82/2
Pecos R., N. M. & Tex.	5/20/52	H. Com. Pub. Wks.	H. Doc. 475, 82/2
*Salt-Wahoo Crks., Neb.	7/3/52	H. Com. Agric.	H. Doc. 530, 82/2
*Blue R., Neb. & Kan.	7/3/52	H. Com. Agric.	H. Doc. 530, 82/2
*Upper South Platte., Colo. & wyo.	7/3/52	H. Com. Agric.	H. Doc. 530, 82/2
*Osage R., Kan. & Mo.	7/3/52	H. Com. Agric.	H. Doc. 530, 82/2
*Five Mile Crk., Wyo.	7/3/52	H. Com. Agric.	H. Doc. 530, 82/2

* Reports on these 5 watershed submitted in one document entitled "Supplemental Report, Missouri River Basin Agricultural Program."

Appendix C

"BENEFIT-COST ANALYSIS: ITS RELEVANCE TO PUBLIC INVESTMENT DECISIONS"

Article reprinted from Allen V. Kneese and Stephen C. Smith, eds., Water Research (Baltimore: The Johns Hopkins Press, 1966), pp. 311-328.

Benefit-Cost Analysis Its Relevance to Public Investment Decisions

*Arthur Maass**

The U.S. government has for some time used benefit-cost analysis in the design and justification of dams and other water resources improvements. Currently the government is trying to adapt the technique to other public investment programs. At the request of the Bureau of the Budget, The Brookings Institution held a major conference on the topic in November 1963, with papers on applying benefit-cost analysis to urban highways, urban renewal, outdoor recreation, civil aviation, government research and development, and public health [ref. 1]. In 1965 the Bureau of the Budget established a special unit to adapt and apply benefit-cost and cost-effectiveness studies to a broad range of government programs. It is appropriate. therefore, to examine and evaluate this important branch of welfare economics.

WHAT IS THE PROBLEM?

The major limitation of benefit-cost analysis, as it has been applied to public investments in the United States, is that it ranks projects and programs in terms only of economic efficiency. (At the national level this

* Professor of Government. Harvard University. This paper, which appeared in substantially the same form in the May 1966 issue of the *Quarterly Journal of Economics*, results from several studies of the public investment decision process by members of the Harvard Water Program. The program has been supported by the U.S. Army Corps of Engineers, Resources for the Future, Inc., and the U.S. Public Health Service.

means that projects and programs are judged by the amount that they increase the national product.) But the objective of most public programs is not simply, not even principally, economic efficiency. The redistribution of income to classes or to regions is an important objective in government plans-witness the Appalachia program. And there are other objectives, too-the promotion of national self-sufficiency, for example.

In other words, the objective functions of most government programs are complex; yet benefit-cost analysis has been adapted to only a single objective-economic efficiency. Thus, benefit-cost analysis may be largely irrelevant, or relevant to only a small part of the problem of evaluating public projects and programs. We should not settle for the current state of benefit-cost analysis, but rather find ways to make it applicable to the real issues of public investment.

Now, in all complex objective functions for government programs, economic efficiency will be one term. A second will frequently be income redistribution, as has been noted-to classes (the poor) or to regions (depressed areas). These two objectives may be complementary in some ways: a program designed to transfer income from the rest of the nation to Appalachia, or from the wealthy to the poor, may also increase national product? But a government program that maximizes efficiency will not necessarily, indeed is not likely to, achieve a specified high level of income redistribution. Thus, a planner who is responsible for developing a program or project for both purposes will need to know the relative weights to assign to efficiency and income redistribution.

Assume that the problem is to design an irrigation project on an Indian reservation so as to increase the income of the Indians as a group and to increase food production for the nation as a whole. The relation between income for the Indians (income redistribution) and food production (national economic efficiency) in this case can be stated in any one of three ways as follows. The example is based on Marglin [ref. 3]:

1) Maximize net income to the Indians, subject to a constraint that the ratio of efficiency benefits to efficiency costs is at least 1.0 to 1.0, or 0.9 to 1.0, or some other.
2) Maximize net benefits from food production in national terms-i.e., economic efficiency-subject to a constraint that the Indians net $X thousand/yr.
3) Maximize a weighted sum of net benefits from economic efficiency

[1] For conditions under which regional redistribution **in** the United States can be achieved without significant loss in economic efficiency, see Mera [ref. 2]. For a more general statement of the relationship between economic efficiency and income distribution, see Marglin's discussion on "Objectives of Water Resource Development: A General Statement" [ref. 3, ch. 2, pp. 63-67].

and income redistribution in which $1 of income to the Indians is valued at $(1 +*X*) of efficiency. (In this case the *X* can be called a shadow premium on redistribution benefits.)

With proper values these three statements will be equivalent. Any constraint can be converted into a shadow price and any shadow price into a constraint.

The efficiency benefits and costs of this two-term objective function can be measured fairly well by the art of benefit-cost analysis in its present state. There are problems, to be sure, resulting from such factors as the collective character of the benefits of many public programs, the need to measure costs in terms of resource displacements rather than market prices where these two measures diverge, the selection of an appropriate discount rate, and various so-called external effects-but great progress has been made on these in recent years.2 Thus, all that is needed to solve the maximization equation is to specify the tradeoff ratio between efficiency and income redistribution. If there is a way of finding this ratio, the maximization problem can be solved in any of its three forms, and we can design projects and programs that are responsive to a realistic two-factor objective function.

There is a way to determine the tradeoff-through the political process. For the federal government my studies indicate that there is a capacity in the legislative process to make the tradeoff decisions that can then govern the design of projects and programs. The President initiates the legislative process; the Congress examines the President's proposals in the light of alternatives and accepts, modifies, or rejects them. Thus, the experts in the executive departments need to develop data that show the effects on the design of programs and projects of different tradeoff ratios. This the executive can do. The President needs to select one or a range of these ratios and thereby initiate formally the legislative process. This the President can do. And finally, the Congress, when presented with such data and such a presidential initiative, needs to and can respond in order, as we shall see.

Ironically but understandably, the field of public investment for which the present benefit-cost technique is most advanced, water resources, is the field for which the political technique for determining tradeoffs among efficiency and other objectives is most primitive. The legislative process for water resources consists principally of omnibus bills that authorize individual projects, rather than of legislation that sets standards and criteria. In the housing and urban renewal area, by contrast, stan-

2 For discussions of these problems as of 1961, see Marglin and Dorfman ([ref. 3] ch. 2, 3, and 4); also see [ref. 4]. For examples of more recent developments, see papers by Peter 0. Steiner and Kenneth J. Arrow, in this volume.

dards and criteria, based on both income redistribution and economic efficiency, are determined in the legislative process, and benefit-cost analysis is primitive.

The problem is to combine the advanced state of the art of efficiency benefit-cost analysis, as found in water resources planning, with an equally sophisticated technique for relating efficiency benefits and costs to those stemming from other objectives.

HAVE BENEFITS BEEN OVERESTIMATED?

In this context it is interesting to examine the arguments over so-called secondary benefits and how they should be included, if at all, in project analyses. There is no such thing as a secondary benefit. A secondary benefit, as the phrase has been used in the benefit-cost literature, is in fact a benefit in support of an objective other than efficiency.3 The word "benefit" (and the word "cost," too) has no meaning by itself, but only in association with an objective; there are efficiency benefits, income redistribution benefits, and others. Thus, if the objective function for a public program involves more than economic efficiency-and it will in most cases-there is no legitimate reason for holding that the efficiency benefits are primary and should be included in the benefit-cost analysis, whereas benefits in support of other objectives are secondary and should be mentioned, if at all, in separate subsidiary paragraphs of the survey report. Using the current language and current standards, most of the benefits to the Indians in the Indian irrigation project are secondary benefits. How silly!

In this context it is interesting also to examine the conclusion of many non-governmental studies of government planning for water resources projects, namely, that benefits have been overestimated. Hubert Marshall has recited the evidences of chronic overestimation in his paper, "Politics and Efficiency in Water Development," elsewhere in this book **The** principal cause of such benefit "overestimation" is, I believe, the unreal restrictions placed on the analysis of projects by the unreal but virtual standard that the relation of efficiency benefits to efficiency costs is the indicator of a project's worth, when in fact the project is conceived and planned for objectives in addition to efficiency. In such an incongruous circumstance one might expect project planners to use a broad definition of efficiency benefits. The critics, either not understanding or unsympa-

3 The term has been used also to describe a small class of efficiency benefits that are *in*duced rather than *pro*duced directly, by public investment, but the usefulness of this distinction is questionable.

thetic to the planners' plight, have judged them by a more rigorous definition of efficiency.[4]

HOW DID WE GET TO WHERE WE ARE?

Why has benefit-cost analysis developed in this way? Certainly not because of any myopia on the part of the Congress, though executive officers are frequently quick to blame Congress for their ills. To be sure, we do not have adequate legislative objectives, standards, or tradeoff ratios for the design and evaluation of water resources projects, but this is because the President has failed to initiate the legislative process, not because of a lack of receptivity to such initiatives by Congress. In fact, certain committees of Congress, impatient with the President for not proposing legislation to set standards, have tried to initiate the legislative process themselves; but without co-operation from the executive they have failed, understandably [ref. 3, p. 588]. The task of assembling and analyzing data, the necessary first step in the legislative process, is beyond the capacity of Congress and its staffs in complex areas like this one. Insofar as there is a general standard for the design of water projects that has been approved by Congress in legislation, it is a thirty-year&old statement that "the benefits to whomsoever they may accrue should exceed the costs.[5] This standard, you will note, does not specify efficiency benefits, but "benefits to whomsoever they may accrue."

The executive agencies have painted themselves into the efficiency box. In 1950 the Subcommittee on Benefits and Costs of the Federal Inter-Agency River Basin Committee gave overwhelming emphasis to the efficiency ranking function in its now well-known "Green Book" report [ref. 5]. In 1952 the Bureau of the Budget, in a Budget Circular that neither required nor invited formal review and approval by the Congress, nailed this emphasis into national policy, adopting it as the standard by which the Bureau would review agency projects to determine their standing in the President's program [ref. 6]. And soon thereafter agency planning manuals were revised, where necessary, to reflect this Budget Circular. In this way benefits to all became virtually restricted to benefits that increase national product.

The federal bureaucrats, it should be noted, were not acting in a vacuum; they were reflecting the doctrines of the new welfare economics

4 Causes for so-called benefit overestimation, with the exception of the cause I consider to be the principal one, are given in Hubert Marshall's paper, in this volume.

5 Incidentally, this provision of the Flood Control Act of 1936 (49 Stat. 1570) did not originate in a presidential initiative.

which has focused entirely on economic efficiency. Non-efficiency considerations have been held to be outside of the domain of the welfare economist. They have been called by such loaded names as "inefficient," "value-laden," "altruistic," "merit-wants," "uneconomical.[6]

WHAT CHANGES IN WELFARE ECONOMICS THEORY ARE NEEDED?

From a practical point of view, the new welfare economics has dealt exclusively with efficiency because for it, and not for other objectives, benefit and cost data are provided automatically by the market, though market prices sometimes have to be doctored. Theoretically, however, the preoccupation of present-day welfare economics (and its branch of benefit-cost analysis) with economic efficiency results from its very basic assumptions, and two of these in my view can and should be abandoned.

First is indifference to the distribution of income generated by a government program or project-the assumption that each dollar of income from the program is of equal social value regardless of who receives it. In benefit-cost analysis that maximizes efficiency, an extra dollar to a Texas oil man is as desirable socially as one to an Arkansas tenant farmer, and an additional dollar of benefits for Appalachia, West Virginia, is no more worthwhile than one for Grosse Pointe, Michigan.

Few welfare economists support the social implications of this basic assumption, and they would compensate for them in one of two ways. Some hold that the professional planners should design projects and programs for economic efficiency, for which benefit-cost analysis can provide the necessary ranking function; and that thereafter these project designs can be doctored and modified by a political process to account for any "uneconomic" objectives.[7] But this response is unsatisfactory for reasons already given. Where government programs are intended for complex objectives they should be designed, where this is possible, for such objectives, not designed for one objective, which may not be the most important, and subsequently modified in an effort to account for others. Almost inevitably economic efficiency will be overweighted in such a scheme. How relevant is this type of planning for our Indian irrigation project? Furthermore, such a planning process calls on political institutions to perform a task for which they are not well equipped.

6 For example, see Musgrave [ref. 7]. The first of these nomers is perhaps correct technically, but even this cannot be said of the others, for efficiency is not necessarily less or more value-laden, altruistic, or meritorious than other objectives:

7 In essence, this is what Dorfman proposes for West Pakistan [ref. 8].

Where the approval and modification of individual projects, rather than a debate on objectives and standards for designing projects in the first place, is the ***principal*** activity of the legislative process, decision making for the nation can disintegrate into project trading. In the legislature, for example, the voices of the whole house and of committees are muted at the expense of those of individual members, each making decisions for projects in his district and accepting reciprocally the decisions of his colleagues. Nor does the executive under these circumstances play a more general or high-minded role. The public investment decision process can be organized, hopefully, to play to the strengths rather than to the weaknesses of political institutions.

An alternative response of some welfare economists to the inequitable social consequences of the basic assumption of indifference to income distribution is as follows: It is more efficient to redistribute income directly from one group of individuals to another through government programs of taxation and subsidies, than to do so indirectly through government investment programs that are designed also to increase national product. If the government's objectives are, for example, to increase both national food production and income of the Indians, it should plan to accomplish these by two programs rather than a single one. Government planners should design the most efficient program for increasing food production, which may mean additional irrigation facilities in the Imperial Valley of California, where there are no Indians. Then, with taxes collected from the irrigators and representing their willingness to pay for their new benefits, the government should make subsidy payments to the Indians. In this way, so goes the argument, the government can achieve the best of both worlds. "Best" in this context means "efficient," however, and there is no reason why a community need prefer the most efficient method for redistributing income, especially if it requires transferring cash from one group to another. As Marglin points out in his treatment of this subject [ref. 3, pp. 17-18, 63-67], the means by which a desired distribution of income is achieved may be of great importance to the community.[8] In our example, the

[8] Tinbergen [ref. 9] observes that in the normal case, *n* programs (or instruments) are required to maximize a welfare function that includes *n* objectives (or targets). But for his normal case Tinbergen assumes that only the results of the programs, not their qualitative characteristics, affect welfare and that planners are free to select that level of achievement of each objective that maximizes the over-all welfare function. This freedom is theirs only if *n* programs are available to the planners. Our discussion, on the other hand, proceeds from the assumptions that the qualitative characteristics of the programs affect welfare, and that the number of acceptable programs may be fewer than the number of objectives, which necessitates the tradeoff among objectives. This would be an abnormal case in Tinbergen's formulation.

community would probably be willing to give up some efficiency to see the living standard of the Indians improved by their own labors rather than by the dole. In short, the community may quite properly want to realize multiple purposes through public investment projects and programs, and if benefit-cost analysis is to be of great use in planning these activities, then the basic assumption of indifference to their distributibe consequences must be abandoned.

It should be noted, however, that where, as in the case of the Indian irrigation project, a government program produces benefits that can be sold or otherwise charged for, a desired redistribution of income can be achieved by both the quantity of benefits produced and the prices charged for them. For any given quantity of irrigation water, the smaller the repayment required from the. Indians, the greater the income they will receive. Thus, when the agency men prepare data showing the effects on public programs of alternative tradeoffs between economic efficiency and income redistribution, these alternatives should include different repayment possibilities.

The second basic assumption of the new welfare economics and of benefit-cost analysis that needs to be challenged is consumers' sovereignty -reliance solely on market-exhibited preferences of individuals. This assumption, to be sure, provides normative significance for the familiar prescriptions of welfare economics on which the efficiency calculus is based-for example, that price ought to equal marginal costs. Nonetheless, it is not relevant to all public investment decisions, for an individual's market preference is a response in terms of what he believes to be good for his own economic interest, not for the community.

Each individual plays a number of roles in his life-social science literature is filled with studies of role differentiation-and each role can lead him to a unique response to a given choice situation. Thus an individual has the capacity to respond in a given case, to formulate his preferences, in several ways, including these two: (1) what he believes to be good for himself-largely his economic self-interest, and (2) what he believes to be good for the political community. The difference between these two can be defined in terms of breadth of view. To the extent that an individual's response is community, rather than privately, oriented, it places greater emphasis on the individual's estimate of the consequences of his choice for the larger community.

Now, the response that an individual gives in any choice situation will depend in significant part on how the question is asked of him, and this means not simply the way a question is worded, but the total environment in which it is put and discussed. This can be illustrated with a small group experiment. Questions with relevance for the church (for example,

should birth control information be provided to married individuals who desire it?) were asked of Catholic students randomly divided into two groups. One group met in a small room where they were made aware of their common religious membership. The other group met in a large auditorium, along with hundreds of other students of many religions, where no effort was made to establish awareness of common religious beliefs. Although all of the students were instructed to respond with their "own personal opinions," there was a significant difference between the replies of the group that were aware of their common religious membership and the unaware group, the former approximating more closely the orthodox Catholic position against birth control [ref. 10].

An individual's response depends, then, on the institutional environment in which the question is asked. Since the relevant response for public investment analysis is community, not privately, oriented, the great challenge for welfare economics is to frame questions in such a way as to elicit from individuals community-oriented answers. The market is an institution designed to elicit privately oriented responses from individuals and to relate these responses to each other. For the federal government, the electoral, legislative, and administrative processes together constitute the institution designed to elicit community-oriented responses. The Maass-Cooper model describes these processes within such a context [ref. 3, p. 588].

Although several welfare economists have recognized explicitly that individuals play several roles and that these roles influence preferences, they go on to say that in making decisions relating to social welfare each individual uses a composite utility function, a total net position representing a balance of all of his roles [ref. 11, 12, 13]. This last hypothesis, which is not supported by experimental evidence, is unfortunate. It misses the point that an individual will respond differently depending on how the question is asked of him, and it fails to give proper emphasis to the differentiation of institutions for putting the question-for example, the market institution to elicit privately oriented responses, and political institutions for those that are community oriented.

Ideally, we want community, not market, responses of individuals with respect to both factors in our complex objective function--economic efficiency and income redistribution. Fortunately, however, market-determined prices are a fairly good surrogate for the economic efficiency factor, providing adjustments are made for so-called externalities and the like.[9] This is opportune. Were it not for the propriety of using market-related prices for efficiency benefits and costs, benefit-cost analysis for

[9] Marglin's 1962 analysis [ref. 3] is one demonstration of this.

public projects and programs would be beyond the capacity of available economic techniques and of political institutions as they operate today.

Some day, I am confident, we shall be able to use institutions that elicit community-oriented responses to measure all factors in a complex objective function-efficiency, income redistribution, and others. The very recent search by a few economists, inspired largely by the work of Kenneth Arrow, for a new criterion of social welfare may contribute to this end.[10] The more modest proposal of this paper is that we use political institutions to measure the tradeoff ratio between a basically market-determined efficiency and the single most important non-efficiency objective of a government program-which is likely to be income redistribution but may be some other.

WHAT IS THE EVIDENCE THAT TRADEOFFS CAN BE DETERMINED?

It remains to be demonstrated that there is a capacity in the legislative process to select tradeoff ratios in a way that will be useful for the design of government programs and projects. As stated earlier, the legislative process involves three steps. First, the officials in the executive departments prepare data showing what would be the effects on programs and projects of alternative tradeoffs between economic efficiency and another objective; second, the President, with these data in hand, selects a tradeoff ratio and proposes it to Congress as the legislative standard; and third, Congress examines the President's proposal, in the light of the alternatives developed in the departments and of others that may come from outside sources, and accepts, rejects, or modifies it.

The first step should not involve great difficulties, especially in water resources where analysis of the efficiency factor is well advanced, although there will be obvious problems in areas where economic efficiency analysis is primitive. For continuing programs, the data necessary to initiate the legislative process need not relate to projects and programs being designed or to be designed; they can be drawn from projects already in operation and in some cases from hypothetical or prototype projects. Agency men can reexamine completed projects and programs and estimate how differently they would have been built and would have operated with different tradeoffs among objectives. At the same time they can reflect in the data that they prepare for new investment programs information generated during previous planning periods, thereby using a sequential planning process. (See Marglin [ref. 14, p. 22].)

10 For an excellent summary of this research, see Rothenberg [ref. 13].

It is at the final, or congressional, stage that doubters will raise most questions, and it is, of course, this stage that is most difficult to prove, because in the water resources area, for which the legislative initiative could be taken most clearly, the President has failed to act. To demonstrate Congress' capacity we must, therefore, turn to public investment programs for which standards have been set in legislation, and these are ones for which benefit-cost analysis is so rudimentary that it is necessary to examine the record very carefully for implicit evidence of a concern for tradeoffs between efficiency and other objectives.

Legislation authorizing the National System of Interstate Highways, principally the Act of 1956, furnishes one example.[11] The legislation provides that the system should consist of 41,000 miles of roads which are identified generally as to location, and it sets design criteria for these roads. The criteria depart from those of earlier highway legislation in three important respects, apart from the taxing methods for financing the federal government's share of the costs. First, roads are to be designed for predicted traffic volumes of 1975, and the monetary authorizations are calculated from this standard.[12] Second, the federal-state matching ratio is changed from 50: 50 to 90: 10. Third, the formula for apportioning funds among the states is changed. The earlier formula for the primary system of roads was one-third on the basis of each of the following ratios: a state's population to the total U.S. population, a state's area to the total U.S. land area, a state's rural delivery and star routes to the total U.S. mileage of such roads. The new formula provides a single ratio the estimated cost of completing the interstate system within the borders of a state to the total estimated cost of completing the entire system by a fixed date, 1972.[13] This last criterion was agreed to after considerable discussion involving numerous alternatives, but principally two: the one adopted and one that would continue to give considerable weight to a state's area and its population.

As Major has shown, these alternatives represent respectively economic efficiency, or more properly a surrogate for efficiency, and income redistribution. Given the requirement of completing a given mileage, by a given date, to a given capacity (1975 traffic volume), an apportionment based on cost of completion would be efficient; and one based on such factors as a state's area would introduce other objectives into the pro-

11 My data are taken from Major [ref. 15]. See this thesis for citations of statutes and reports referred to here.

12 This design standard was amended in 1963 to provide for predicted traffic volumes twenty years from date of approval of project plans.

13 The Act of 1956 contemplated completion by fiscal year 1969, but both estimated costs and year of completion were later amended.

gram, namely, redistribution of income (largely federal construction funds) to rural states where traffic volumes and highway construction costs per mile are typically lower. This is especially true because the alternative provided that if a state received more funds than necessary to complete its portion of the interstate system, it could divert a percentage of the excess for use on its other federally aided roads.

A study of the legislative process in which these new program criteria, especially the third one, were adopted has some useful lessons for our inquiry. There was a vigorous and effective executive initiative of the process. The concept of uniform completion of an interstate system in all states at approximately the same time appears to have been recommended first by a non-federal entity, the American Association of State Highway Officials. Thereafter, the Bureau of Public Roads made a detailed factual study of the costs of building an interstate system. The President, in an address before the 1954 Governors' Conference, proposed that the nation develop a new master plan for highways, and he appointed an Advisory Committee on a National Highway Program, chaired by General Lucius Clay, to prepare one. The Clay Committee used the Bureau of Public Roads report as its empirical base. It recommended the three design standards that were finally adopted, presenting them in the context of alternatives about which debate in the legislative process could and did revolve.[14] Both the BPR and the Clay reports were sent to the Congress, along with a presidential recommendation. The discussion in Congress, in committee and on the floor, was informed and extensive. Information was available on the expected consequences in terms of investment of choosing alternative standards, the participants were aware of the nature of the choices they had to make, and their debate was rich in relevant arguments pro and con on the alternatives, especially on apportionment formulae.

What we have called economic efficiency in this case-i.e., the most efficient way of satisfying a fixed requirement-is of course quite different from economic efficiency as an objective in benefit-cost analysis for water resources, where it means to maximize the contribution of a project to national product. The latter concept played no part in setting the standards for the highway program. The art of efficiency benefit-cost analysis is much less well developed for public investments in highways than in water resources developments, and this was even more true ten years ago than it is today. It is not unreasonable to suggest, from the record of the legislative process for the interstate highway system, that

[14] The Clay report's proposals on tax policy and accounting procedures for financing the road system, which we do not discuss here, were altered significantly in the legislative process.

had data been available on real economic efficiency and on alternative tradeoffs between it and income redistribution, these would have been used intelligently in setting standards.

Comparing the legislative processes for the interstate highway system and water resources, the former is less concerned with authorizing individual projects that have been designed and more concerned with setting standards for project design. To be sure, the Highway Act authorized 41,000 miles of roads and fixed their general locations. Design of the roads, including definite locations for them, was left, however, for administrative action insofar as the federal government was concerned.

In federal programs for housing and urban renewal, standards and design criteria have been set in the legislative process, and the recent legislative history of the rent supplement program is an instructive example.[15] In his Housing Message of 1965, President Johnson described a proposed program for rent supplement payments as "the most crucial new instrument in our effort to improve the American city." The federal government was to guarantee to certain private builders the payment of a significant part of the rent for housing units built for occupancy by moderate-income families. These are families with incomes below the level necessary to obtain standard housing at area market prices, but above the level required for admission to publicly owned low-rent housing units. The rent payments were to be the difference between 20 per cent of a family's income (the proportion of income that a moderate-income family is expected to allocate to housing) and the fair market rental of the standard housing to be built. The President proposed an authorization of $200 million over four years which was designed to encourage the construction of 500,000 new housing units in this period. The housing supported in this way would constitute some but not all of the rental units in new housing projects.

The Housing Act of 1961 had also included a program designed specifically for moderate-income families, but this program had encountered certain problems that slowed its expected impact. Section 22 ld(3) of the 1961 Act provided for 100 per cent loans to qualified private builders at below-market interest rates. The low interest rates were to keep rents- within the reach of moderate-income families. The law provided, however, that the interest rate was to be the average rate on all outstanding marketable federal obligations. This was 3 1/8 per cent when the program began, but it had risen to approximately 4 1/8 per cent by

[15] Except where otherwise noted, the facts of this case are derived from legislative documents relating to the Housing and Urban Development Act of 1965 [ref. 16]. David C. Major has assisted in developing the facts and interpretation of this case.

mid-l 965. This meant that rents would be significantly higher and beyond the capacity of most moderate-income families. Another problem with the 1961 program was that the low interest mortgages constituted a heavy drain on the special assistance funds of the Federal National Mortgage Association, the federal housing credit agency that purchased them. Because these mortgages were below market rates, FNMA could not issue against them debentures for sale in private capital markets, and they remained a 100 per cent charge on federal funds. Nonetheless, the Administration recommended in 1965 that the 221d(3) program be continued for four years with a mortgage authorization of $1.5 billion, for about 125,000 new housing units. But this program was to be phased out if the rent supplement proposal worked as its backers hoped that it would.

The Administration had three principal objectives in proposing rent supplements. The first was to increase the number of housing starts. This derived from a desire to expand the national housing stock and a concern about the possibly failing health of the housing industry and the industry's impact on the national economy. We can equate this objective roughly with increasing national product, or economic efficiency. The government's housing experts found that there was a large untapped market for new housing among moderate-income families, and that rent supplements for them would stimulate the rapid construction of substantial amounts of new housing.

The second principal objective of the Administration in recommending a rent supplement program was to give direct assistance to a large group of families with incomes above the public housing level but below the level needed to obtain standard housing at market prices. This objective we can equate with income redistribution-to moderate-income families.

As for direct assistance to low-income families, the Administration bill would authorize additional public housing units. Over a four-year period 140,000 new units were to be built and 100,000 units purchased or leased from private owners and rehabilitated. Using the trickle-down theory, the Administration could claim that all other housing programs that increased the national stock of standard housing would ultimately improve the housing of the poor, but certainly the primary and direct impact of the rent supplement program, insofar as its objective was income redistribution, favored moderate-income families.

The Administration's rent supplement program contained, then, as one design criterion of a tradeoff ratio, relating the objectives of efficiency and income redistribution, and as a second, a specification of the group to be favored by the redistribution. The second criterion was explicit in

the Administration's legislative initiative, though the first was largely implicit.

The Administration's third principal objective for the rent supplement program was "economic integration." Families being aided by the government would live in projects with families who would pay normal market rentals for their housing. In this respect the new program differed from most other federal housing programs for disadvantaged groups, for the latter promoted economic segregation. Only the poor live in public housing; all units in 22 ld(3) projects are for occupancy by designated groups. To encourage economic integration even where local authorities may oppose it, the Administration proposed that in certain cases projects supported by rent supplements need not conform to locally approved "workable programs" for housing development.

After hearings, and debates, and conferences, Congress modified drastically the Administration's design criteria for a rent supplement program. Briefly, the supplements are to be given for new standard housing units that are to be occupied by low-income families. As a result, both the tradeoff ratio between efficiency and income redistribution and the impact of the redistribution itself have been changed.

The relative contributions of the program to increasing national product and to redistributing income have been altered because, with a given authorization or appropriation, there will be fewer housing starts if rents of low, rather than moderate, income families are supplemented. The unit costs of standard housing are the same in either case, but the supplement required to make up the difference between what the family can pay and what is needed to support the new housing varies greatly. The new law authorizes $150 million for rent supplements (rather than the $200 million proposed by the President). According to December 1965 estimates of housing experts, this $150 million would result in 350,000-375,000 housing starts over four years if it were available for the Administration's program of aiding moderate-income families. As rent supplements for low-income families, the same money will induce only 250,000-300,000 starts.[16]

As for the criterion that governs the group to be benefited, the relative impacts on low- and moderate-income families of the original and revised programs for rent supplements and closely related activities are shown in Table 1.

16 Under the Administration bill the rent supplement would be the difference between rent for standard housing and 20 per cent of a moderate-income family's income; under the Act as approved, the difference between the same rent and 25 per cent of a *low*-income family's income. The two changes made by Congress work in opposite directions, but they do not offset each other.

TABLE 1.

Impact on Low- and Moderate-Income Families of Certain Provisions of 1965 Housing Act

Program	Administration proposal	Congressional action
	(All figures are thousands of housing units over four years)	
Low income		
Public housing	240	240
Trickle down from all programs that increase national stock of standard housing	ok	ok
Rent supplement program	zero	250-300
Moderate income		
Rent supplements 221d(3)	467–500 125 (but problems in achieving this because of high interest rate and drain on FNMA funds)	zero 125 (and this likely to be achieved because interest rate fixed at 3% and provision made for tapping private capital)

The impact of Congress' revisions on the Administration's third objective of economic integration is not so clear. Insofar as it is poor rather than moderate-income families who are enabled to live in housing developments along with families that are able to pay normal rents, a more dramatic integration can be achieved. On the other hand, it is clear from the legislative history that Congress does not intend that the housing agency exempt any rent supplement projects from the "workable plan" requirement, which means that local controls will continue.

The housing case study, like that of the highway program, shows that there is a capacity in the legislative process to discuss and adopt Standards and criteria to control the design of public projects and programs; that the Congress is prepared to focus its efforts on such standards and forego authorization of the projects themselves-public works for housing, urban renewal, and community facilities are not individually authorized by law; and that the legislative process for setting standards can be used to select tradeoff ratios where a program has two objectives. On this latter point, the rent supplement case is a bit weak, to be sure. The Administration in its legislative initiative did not make sufficiently explicit the tradeoff between economic efficiency and income redistribution that was involved in its proposal for approximately 500,000 new housing starts for the benefit of moderate-income families. Administration witnesses failed to give a clear statement of how the two objectives were related and how the program would differ if alternative tradeoff ratios were assumed. One reason for this failure is that efficiency benefit-cost analysis has not been perfected for housing programs as it has for

water resources. Nonetheless, the Congress, in reviewing the President's program, managed to focus on the relevant design criteria and, after extensive consideration, including some confused debate, revised them in a way that apparently was consistent with its policy preferences. Also, the executive now has a legislated standard that it can use in redesigning the relevant housing programs. How much better the process would have been if the initiative had been better prepared!

THE LESSON

To those in the executive departments of the U.S. government, the lessons of this article should be clear. If the subject is water resources, initiate a legislative proposal for setting a tradeoff value between economic efficiency and the most important non-efficiency objective that is relevant to your agency's program. Once this is approved, you can forget about secondary benefits, probably be relieved from the drum-drum and profession-wise insulting charges that you persistently overestimate benefits, and you can design projects that are more in accord with the nation's objectives. If the subject is highways, or housing, or most other public investment programs, perfect the efficiency benefit-cost technique for your agency's program. Once this is done, there should be no difficulty in deriving through the legislative process a tradeoff between efficiency and another objective. As a result, the design and selection of projects will be more intelligent and the program should be more convincing to those who judge it.

After the agencies have learned how to work with two-term objective functions, they can try to solve far more complex ones. For the time being, however, purposes other than efficiency and the most important non-efficiency objective will need to be treated descriptively in the familiar "additional paragraphs" of program and project reports.

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Appendix D

"PUBLIC INVESTMENT PLANNING IN THE UNITED STATES: ANALYSIS AND CRITIQUE"

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PUBLIC INVESTMENT PLANNING IN THE UNITED STATES: Analysis and Critique

ARTHUR MAASS

During the New Deal period the United States Government adopted two important techniques—multiple-purpose planning and benefit-cost analysis-for evaluating public investments in natural resources, and the years since then have been devoted to perfecting and applying them. Accomplishments have been substantial, especially in the development of water resources. Thus when in 1963 Robert Dorfman organized the Brookings Institution's first conference on measuring benefits of government investment, he excluded papers on water resources, because the great need was to bring analysis in other areas of public investment up to the level already achieved in the design of water resource systems.[1] At the same time, these techniques, in the process of development, have come to serve ends somewhat different from those that were intended by their early advocates, and, predictably, bureaucratic organizations and professional groups have acquired vested interests in the procedures that have evolved.

The planners of the New Deal were dissatisfied with "the medley of unrelated projects and policies" that then constituted governmental planning and development of water and land resources, and they sought to devise in their place unified policies to control public investments in this sector.[2] Their "guiding principles" for "a sound water policy" emphasized (1) "economic and social justification ... A sound water policy ... will be concerned

1 Robert Dorfman (ed.), *Measuring Benefits of Government Investments* (Washington, D.C.: Brookings Institution, 1965), pp. 8, 9.

2 Their ideas are represented in reports of the National Resources Planning Board and its predecessor agency, the National Resources Committee. See National Resources Commit tee, "Drainage Basin Problems and Programs, 1936," which is Pt. II of *Public Works Planning* (Washington, D.C.: Government Printing Office, 1937); National Resources Committee, *Drainage Basin Problems and Programs, 1937 Revision* (Washington, D.C.: Government Printing Office, 1938); National Resources Planning Board, "National Water Policy," in *Development of Resources and Stabilization of Employment in the U.S.*, Part III, pp. 21–50 (Washington, D.C.: Government Printing Office, 1941). The quotations in this and the following two paragraphs are from pp. 7 and 8 of the 1937 Drainage Basin report, but with minor editorial variations, the same concepts can be found in the 1936 and 1941 reports.

with the promotion of public safety, public health, the public convenience and comfort, the economic welfare of the public, the establishment or maintenance of a high standard of living"; and (2) "integrated control and use of water, within the changing limits of technical feasibility and of economic and social justification."

To implement the principle of integrated control, the planners held that rivers should be developed for multiple rather than single purposes, and that the relevant unit for multipurpose planning and development should be the river basin rather than a single river sector. By "purposes" these planners meant products produced by a public investment, not its economic and social justification-not, as we should say today, its objectives. Thus the purposes of multipurpose planning included such products as flood damage reduction that is provided by levees or by reservoir space which is used to store flood runoff; water supplies for municipal, industrial, and irrigation uses that are provided by storage reservoirs; navigation, sport fisheries, and pollution abatement that are provided by control of low river flows, which are made possible, in turn, by storage reservoirs.

To implement the principle that public investments in the development of resources should have broad economic and social justifications, the planners proposed that a "standardized and modernized" procedure of benefit-cost analysis be developed. This procedure "will take account of social benefits as well as economic benefits, general benefits as well as special benefits, potential benefits as well as existing benefits." In short, "all types of benefits and costs should be evaluated on a consistent and comparable basis."

Thus public investment planning was to be multiobjective, with the aid of the technique of benefit-cost analysis, and multipurpose, with the aid of the technique of multiple-purpose planning. It is a thesis of this article that the first goal, multiobjective planning, has not been realized, in part because of limitations that have been imposed on the use of benefit-cost analysis; and that the second goal, multipurpose planning, has been overdeveloped, in part because the techniques used for this end have been used to compensate for the retarded development of benfit-cost analysis. I shall explore the reasons for this uneven accomplishment, both

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those owing to the evolution of the analytical techniques themselves and those that are related to bureaucratic conduct and to executive-legislative relations.

I. Multiple-Purpose Planning

The technique of multipurpose planning has grown over the years into a caricature of itself. Today the quality of water resource plans is judged frequently by the extent to which they are comprehensive or multipurpose, by how many of all possible purposes have been included in them. Comprehensiveness in these terms is, of course, a misapplication of the original concept of integrated control and use of water resources, which was not that all purposes that are achievable should be included in all plans, but that all purposes should be considered as eligible to be included so that the ***most important*** ones can be incorporated.[3] Importance in this context is a function of objectives, or the economic and social justification, for public investment in the development of resources; and the technique for measuring the relative importance of investments in different purposes is, presumably, benefit-cost analysis (which we study in the next section of this article).

The present "comprehensiveness rule" has been supported by bureaucratic organization and has evolved in response to it. Agencies with limited rather than general interests in river basin development-the Fish and Wildlife Service, for example-have promoted administrative procedures and in one case legislation that require the principal planning agencies-the Corps of Engineers and the Bureau of Reclamation-to refer to them for review all proposed plans, so that the limited-purpose agencies can determine whether their interests have received proper attention.[4]

3 Thus, the NRPB report on "National Water Policy" stated: "No matter what the originating purpose of a project . . . every other reasonable purpose must be considered adequately in determining its final scope and character if the project plan be sound." National Resources Planning Board, 1941, op. cit., pp. 24, 25.

4 For interagency review procedures, see Corps of Engineers' planning manual EM 1120-2-101, Sects. x, xl. For legislation, the Fish and Wildlife Coordination Act, 48 Stat. 401, as amended, 16 USC 661 et seq.

These review agencies have neither the expertise nor the interest to judge whether a plan represents over-all a good combination for river basin development; their concerns are almost exclusively with their own purposes, and they are likely to give an unfavorable opinion of any report that does not propose a high level of development or protection of these purposes.

Unfavorable opinions by one or more special-purpose agencies do not necessarily kill a river basin plan, but they may do so, and in any case they are likely to prolong consideration and defer approval of plans by higher authorities.[5] To avoid vetoes or delays of their plans, the principal planning agencies have adopted several strategies. One is to revise their reports so as to satisfy special-purpose objectors, even though to do so is, in their view, to reduce the benefits that could be achieved in developing the river. A second strategy of the principal planning agencies is to anticipate objections and willy-nilly to include higher levels of the special purposes in the reports than they would without the threat of review.

Third, the principal planners co-opt the review agencies into the planning process by asking them to prepare reports on their special purposes, which are then included as appendices in the principal agency's report. The planners are not thereby required to accept the proposals in the several appendices, but they are under considerable pressure to do so, for the special-purpose agencies have retained the right to review the final report and to object to it if, in their opinions, it ignores the data and proposals of their appendices.

Finally and most recently, the principal planning agencies have in some cases-as examples, the Susquehanna River and Connecticut River basin reports of the Corps of Engineers-organized coordinating committees that include representatives of special-purpose agencies, to approve the principal report, and in some degree to prepare it. This latest procedure has been added to the others, rather than substituted for them, however. Thus, the special-purpose agencies continue to prepare their appendices, an'd they

5 Agencies concerned primarily with wildlife and recreation have strong constituencies in the conservation organizations and can mobilize outside support for their comments and recommendations.

appear to have retained the right to review and object to the report that they have helped to make.

Review procedures, therefore, have become a means for insuring that certain purposes are included in development plans, rather than a means for insuring that the purposes are evaluated in the planning process. The promotion by special-purpose agencies of elaborate review procedures as a means for protecting their interests in a program, even when these interests are peripheral to the program, is a familiar form of bureaucratic conduct. Control over communications, by means of a right to review and comment on another agency's proposals, is a technique for acquiring power over the agency without organizational change.

In the case of water resource planning this stratagem got off to a good start in the late 1930s and the 1940s because the principal planning agencies were themselves more interested in developing certain purposes than others-the Corps of Engineers in navigation and flood control, the Bureau of Reclamation in irrigation and electric energy; [6] and because the technique of benefit-cost analysis was developed in those years in a way that restricted the types of benefits and costs that could be counted, so that most of the benefits and costs of some special purposes were of necessity excluded from this important planning calculation. (This latter point will be explained below.) As for the qualifications of the principal planning agencies, these have been changing in the last decade. The Corps of Engineers, for one, is in the process of becoming a genuine multipurpose planning agency; it is prepared to consider all purposes as eligible to be included in river basin plans without preference, and to include in any single plan only those purposes that are the most important. But the Corps is in the anomalous position of being unable to operate in this way because of the present requirements of multiple-purpose planning.[7]

[6] Arthur Maass, *Muddy Waters: The Army Engineers and the Nation's Rivers* (Cambridge, Mass.: Harvard University Press, 1951), pp. 145–207.

[7] Recent studies in which the Corps has made or is making special efforts to achieve genuine multipurpose and multiobjective planning include several surveys in the Appalachia region, e.g., Upper Licking River Basin, Kentucky; survey of the Susquehanna River Basin; North Atlantic Framework Study; and the agency-wide Planning-Programming-Budgeting System. See U.S. Water Resources Council, *Conference on Economic Analysis in Comprehensive River Basin Planning, March, 1968* (Washington, D.C.: The Council, 1968), and Department of the Army, Office

At the same time and largely for the same reasons that river basin plans have come to be judged by the extent to which they are comprehensive, the planning process has come to be rated by the quantity of coordination that is practiced, that is, by the extent to which all conceivable interests have been given a voice in planning. Here, as in the case of comprehensiveness, a decision rule, coordination, may have been used to obscure rather than focus on the objectives of public action. In good part to insure full coordination with special interests and with state governments, the

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of the Chief of Engineers, "Water Resources Program Memoranda for PPBS" (1967.8, mimeographed), which is discussed in U.S. 91st Congress, House Committee on Appropriations, *Hearings on Public Works Appropriations for 1970* (Washington, D.C.: Government Printing Office, 1969), Part I, pp. 62-64.

These Corps planning initiatives have resulted in part from efforts to apply to the Corps' planning process the findings, recommendations, and research fallout of the Harvard Water Program, the University of Chicago program in flood plain management, and the studies on alternatives in water management by the National Academy of Sciences-National Research Council. After the Harvard Water Program published its first large report in 1962—*Design of Water-Resource Systems: New Techniques for Relating Economic Objectives, Engineering Analysis, and Governmentat Planning,* by Arthur Maass, Maynard M. Hufschmidt, Robert Dorfman, Harold A. Thomas, Jr., Stephen A. Marglin, and Gordon Mzskew Fair (Cambridge, Mass.: Harvard University Press) -the Corps contracted with this group to study application of its findings to Corps planning. The principal report that resulted from this effort-"The Water Resource Planning Process-Relation to Corps of Engineers Planning," by Maynard Hufschmidt-is an internal Corps document, but several other reports were published subsequent to their submission to the Corps. These include: Maynard M. Hufschmidt and Myron B. Fiering, *Simulation Techniques of Water Resource Systems* (Cambridge, Mass.: Harvard University Press, 1966) ; Myron B. Fiering, *Streamflow Synthesis* (Cambridge, Mass.: Harvard University Press, 1967) ; Arthur Maass, "Bentfit-Cost Analysis: Its Relevance to Public Investment Decisions," *Quarterly Journal of Economics,* LXXX (May 1966), 208–226; Robert Dorfman, "Formal (Mathematical) Models in the Design of Water-Resource Systems," *Journal of Water Resources Research,* I (Third Quarter 1965), 329–336; Robert W. Kates, *Industrial Flood Losses* (University of Chicago Department of Geography Research Paper No. 98, 1965). Although not a report to the Corps of Engineers, a related study of this same research group was Stephen A. Marglin, *Public Investment Criteria* (Cambridge, Mass.: M.I.T. Press, 1967) .

The noteworthy change between 1948 and 1968, for example, in the attitude and policy of the Corps of Engineers is due to several factors, apart from the personalities of Corps' leaders: a decision made in the middle 1950s to cooperate with, rather than oppose, constructive critics in the academic community; increasingly effective control by the Bureau of the Budget over the legislative programs of executive agencies; the Corps' need for broader support due, in addition to the factors above, to the relative decrease in significance of water resources development in the sum of federal programs and to the degrading of Corps' representation at the Cabinet level. With the merger of the Department of the Army into the Defense Establishment, the Corps' principal political representative, the Secretary of the Army, lost cabinet status, and the Secretary of Defense has had little time for, or interest in, the Army's civil functions. The Secretary of the Interior has become more than ever the President's spokesman in water resources matters.

planning process for water resources has only recently been "rationalized" to require, in what has been called "the ideal situation," the following separate planning. steps before construction can begin on a project: (1) National Assessment of Regional Supplies and Requirements, (2) Regional Framework Study-Type 1, (3) Comprehensive, Coordinated, Joint Plan for a Region, (4) Comprehensive River Basin Study-Type 2, (5) Project Studies-Type 3, including several substages of examination, survey, and advanced engineering and design. The Assessment, the Comprehensive Plan, and the Type 1 and Type 2 studies are prepared by river basin commissions or "other Federal interagency-State coordinating organizations" of a region or basin. Type 3 studies are prepared by the principal planning agencies but are subject to all of the special-purpose reviews that have been discussed.

The average estimated time required to complete Type I and Type 2 studies is seven years each, to which must be added in each case one year for "coordinated report review" by the cabinet-level Water Resources Council. Average estimated time to prepare and review Type 3 studies is six years. If these are done seriatim, as in the so-called "ideal" planning procedure, and starting from scratch, that makes 22 years of planning. And according to the Corps of Engineers, this report preparation time "is related primarily to social rather than engineering complexity." The first (1968) annual report of the Pacific Northwest River Basins Commission tells us that the Type 1 Framework Study for the Columbia-North Pacific Region is a joint effort of numerous agencies in the seven Pacific Northwest states and some 22 agencies in nine federal departments. The Commission, whose fifteen members represent the President, nine federal departments or agencies, and five states, has responsibility for coordinating the study. It was started in 1965 and is scheduled to be completed in 197 l, when results will be published in a main report and sixteen appendices, nine of which deal with special purposes such as fish, wildlife, recreation. The search for complete coordination has introduced incredible complications into planning. We can probably move from concept to achievement more quickly today in building a moon station than a single large river dam.[8]

[8] The "ideal" planning procedure is not being realized, of course. Type 3 studies are being made while Types 1 and 2 are under way. Nonetheless, approval of

II. Benefit-Cost Analysis

At the same time that multipurpose planning has been reduced to a burlesque, benefit-cost analysis (hereafter referred to as bca) has been so stunted in its development that it is today a mischievous dwarf when compared to its potential as a technique of analysis.

The Flood Control Act of 1936, the statutory foundation for bca in water resource planning, provided, in language similar to that of the National Resources Planning Board reports, that projects are to be considered feasible economically if "the benefits, to whomsoever they may accrue, are in excess of the estimated costs." [9] However, the words "benefits" and "costs" have no meaning *per* se; they are significant only in relation to particular objectives. Depending on the objectives, a project or program can be designed, and its benefits and costs measured, in terms of increased national income-i.e., economic efficiency benefits and costs; redistribution of national income to certain social and economic classes and regions of a nation and the world; objectives such as national selfsufficiency, national defense, the preservation of wild areas; or any combinations of these. Thus the 1936 provision,

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projects that are recommended in Type 3 studies may well be delayed by the ongoing broader surveys, for those who oppose the recommendations of a Type 3 study will argue that these should not be authorized until they can be considered in the context of the relevant Framework and Comprehensive River Basin surveys. Also, government planners are now considering a procedure whereby the projects that are considered first priority in a Framework study can be planned in greater detail than other proposals in such a study., so that it may be possible to move to Type 3 project planning for them before the relevant Type 2 Comprehensive River Basin studies have been completed. If this procedure is adopted, it will nonetheless require an additional one to one and one-half years after the Framework study is approved to prepare reports suitable for authorization of Type 3 studies. Finally, once the Type 1 and 2 studies are completed for any area, project studies can be made immediately, in an average time of six years.

See U.S. Water Resources Council, *The Nation's Water Resources* (Washington, D.C.: Government Printing Office, 1968), pp. 5–9–8 to 5–9–11; Harry A. Steele, "The National Water Resource Assessment and Regional Framework Plans," *American Journal of Agricultural Economics*, L (December 1968), 1647–1654; Department of the Army, Office of the Chief of Engineers, "Comprehensive River Basin Studies--Study Schedule" (typescript, May 1969), and "Report on Survey Report Procedures to House Committee on Public Works" (offset, April 1966); Pacific Northwest River Basins Commission, *Annual Report for F. Y. 1968* (The Commission, 1969). This last report emphasizes the Comprehensive Plan as apart from Framework and Basin studies.

[9] 49 Stat. 1570.

calling for the measurement of benefits "to whomsoever they may accrue," was not operational. And the executive agencies, working through a succession of interagency committees, have since 1937 sought to give useful meaning to this metric.[10] Their deliberations have had two major results.

First, they have designated a single objective that is to be maximized in bca, namely, national economic efficiency. Bca has become a technique for designing projects that will make the greatest contribution to national income.

Second, and consistent with the first result, the executive agencies have provided that economic efficiency benefits are to be treated as the principal or primary benefits of water programs. The all-important ratio of benefits to costs is calculated in these terms only. Benefits and costs that relate to other objectives are given lip service in planning guides, but in the evaluation of projects and

10 The following list includes for illustration some of the many interagency committees that have been concerned with definitions of benefits and costs and the titles of their principal reports:

1938. Water Resources Committee, National Resources Committee, *Drainage Basin Problems and Programs:* 1937 Revision, pp. 7–10, 68-120.

1941. Subcommittee on National Water Policy, Water Resources Committee, National Resources Planning Board, "National Water Policy," printed as Part 3 of *Development of Resources,* 1941.

1947. Subcommittee on Benefits and Costs, Federal Inter-Agency River Basin Committee, *Qualitative Aspects* of *Benefit-Cost Practice.*

1948. Same, *Measurement Aspects* of *Benefit-Cost Analysis.*

1950. Same, *Proposed Practice* of *Economic Analysis of River Basin Projects* (the so-called "Green Book").

1951. Interagency Water Policy Review Committee, Bureau of the Budget, "Draft Water Resources Policy Act of 1952" and Budget Circular A-47.

1955. Presidential Advisory (Cabinet) Committee on Water Resources Policy, *Water Resources Policy,* especially Section 6: '*Evaluation of Water Resources Projects."

1962. President's Water Resources Council, "Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources."

1968. Economics Committee, U.S. Water Resources Council, *Conference on Economic Analysis in Comprehensive River Basin Planning.*

In addition to the interagency committees, there have been a number of *ad hoc* government committees concerned with this same problem. These include:

1950. President's Water Resources Policy (Cooke) Commission, *A Water Policy* for *the American People.*

1955. Commission on Organization of the Executive Branch of the Government (2nd Hoover Commission), *Water Resources and Power and Task Force Report on Water Resources and Power.*

1961. Panel of Consultants to the Bureau of the Budget, "Standards and Criteria for Formulating and Evaluating Federal Water Resources Development."

programs they are treated as supplementary or secondary to efficiency benefits.[11]

As a consequence of these decisions, programs and projects for water and related land resources have been alone among all government programs and projects in having to justify themselves in terms of a national income objective. Yet the legislative histories of major water statutes-the Reclamation, Flood Control, and Tennessee Valley Acts-like the Planning Board reports of the 1930s, show that executive and legislative policymakers have not been concerned exclusively with national economic efficiency. As a rule the U.S. government has not undertaken investment programs for the purpose of increasing national income alone, nor even for this purpose principally. Redistribution of income to classes or to regions has been one of several other important objectives in government plans, as witness the programs for Appalachia and the Tennessee Valley.

Tension between the implicit if not explicit legislative objectives of water resource development, on the one hand, and the restriction of these brought about by the limitation of benefit-cost analysis to efficiency, on the other, has led to disagreements in the executive and Congress over what are to be considered properly as primary or efficiency benefits. Confronted with an analytical technique that counts efficiency benefits only or largely and with pressure from overseers and auditors in the Budget Bureau, Congressional Committees on Appropriations, and the General Accounting Office to demonstrate that their projects have a benefit-cost ratio greater than unity, those planners who have wanted to emphasize what they believed to be the broader objectives of water programs have tried to sweep into the efficiency category all sorts of benefits that the purist knows are not really efficiency benefits.

This resolution of the uncertainties of 1936 raises several in= teresting questions. Why did the executive agencies paint themselves into the economic efficiency corner? Why have they stayed there? Why has this key policy decision been maintained over the

11 Just as there are no benefits and costs in the abstract, the classes "primary" and "secondary" have no significance except in relation to specific objectives.

The executive agencies have used the phrase "secondary benefits" also to describe a small class of efficiency benefits that are induced, rather than produced directly, by public investments, but we are not concerned with that distinction here.

years by purely executive actions, without any systematic discussion and confirmation in the legislation process?

The most important reasons why the interagency committees initially designated national income as the single objective of bca were these. In government, knowledge of the economics of public investment was primitive in the early years. The professionals were feeling their way, experimenting with microanalytical techniques for public investment that were not well understood. Thus, for example, the now familiar definition of national economic efficiency, as increases in national income or product, came to be understood and accepted by the executive experts as a consequence of their efforts to define the benefits and costs provision of the 1936 Act. Second, the executive experts were much influenced by the analytical techniques of the "new welfare economics" which focused on economic efficiency.[12] Also at the time, in the late New Deal period, considerable attention was being given to construction of public works as a means of fighting the depression, thereby reducing national unemployment and increasing gross national product; and water projects were an important class of public works.[13]

The facts that the executive branch has stayed with its initial decision in favor of national economic efficiency in bca and that the policy implications of this decision have never been examined systematically in the legislative process are owing to different reasons, however-principally to the successful efforts of those who are much concerned about limiting the size of federal expenditures on water projects. Policymakers will be concerned inevitably with the expenditure levels of programs for water resource development, in terms of both fiscal policy and the relative importance of water and other federal programs. But to control expenditures by imposing on the planning agencies criteria that confine the types of benefits that can be used in designing and evaluating projects,

12 On this point see Maass, "Benefit-Cost Analysis: Its Relevance to Public Investment Decision," *op. cit.*, pp. 213–218.

13 The National Resources Committee, in its 1937 Revision of *Drainage Basin Problems and Programs, op. cit.*, said at p. V: "... policies for drainage basin development must be related ... to the business cycle. ... The Committee has previously emphasized and now reiterates the important consideration that both the amount and type of construction and the division of costs among Federal, State and local agencies should vary with the movements of the business cycle."

without considering explicitly the policy implications of these criteria, can mean that a restricted budget is invested in a group of projects that does not fulfill the community's objectives as well as one or more other groups of projects might fulfill them. A procedure which, for the purpose of limiting expenditures, excludes from project design all benefits other than those related to efficiency has the result of foreclosing any real consideration of alternative objective functions.

There are other techniques for determining program levels that do not suffer this disqualification.[14] Nonetheless, some executives, particularly those in the Bureau of the Budget, have defended vigorously the use of an efficiency-oriented criterion for design, although they have not always been explicit that their purpose in doing so is to limit expenditures. To protect the executive against political pressures for raising program levels, these officers have chosen to rely on a control technique that is indirect and, therefore, difficult for opponents to reach and change.

The budget cutters have received support from partisans of two other points of view. Some economists, both in and out of government, believe that the federal government should design and develop water resource systems for the objective of increasing national income, but not for the purpose of redistributing income to the disadvantaged or to underdeveloped regions of the nation. The latter objective can be achieved more efficiently, they believe, by alternative government programs, principally those involving

[14] For a systematic treatment of budget constraints in this context, see Stephen A. Marglin, "Economic Factors Affecting System Design," in Maass, *et al.*, *Design of Water-Resource Systems*, *op. cit.*, pp. 159–177.

In a similar manner policymakers who are concerned that expenditure levels for water resources programs may be too high or simply out of control have sought to reduce or control them by raising the discount rate that is used in the design of projects for the purpose of evaluating on a common basis benefits and costs that are realized in different time periods. In general, raising the rate reduces the size and cost of projects and programs, because it tends to discount more heavily the value of benefits, many of which are received in later years of a project's life, than that of costs, which are incurred typically in the early years. But to control expenditures by imposing on the planning agencies a discount rate that is designed for this purpose, rather than for the purpose of reflecting intertemporal comparisons of benefits and costs, is to foreclose policymakers' consideration of these intertemporal comparisons and to invest in a program of projects that in the general case will be less responsive to community objectives than a number of alternative programs.

For a systematic treatment of discount rates in this context, see Marglin, *Public Investment Criteria*, *op. cit.*, pp. 47-69.

direct payments to the groups or areas; and they *prefer* the more efficient means.[15]

Finally, there is a group of experts that has a professional and vested interest in perfecting the technique of bca. When this technique is limited to efficiency, there are nonetheless many difficult problems in applying it to public investments--for example, estimating beneficiaries' willingness to pay where existing market prices are not relevant or where market prices do not exist, accounting for so-called externalities, and defining proper discount rates; and these men want to solve these problems before they are asked to broaden the scope of their analysis to include other types of benefits and costs that may be even more difficult to handle. They do not object necessarily to designing water resource programs and projects for objectives other than efficiency, but they want to limit bca to the efficiency objective. The consequences, however, of their pursuit of perfection in analysis are likely to be the same as those sought by men who would limit the design of projects to gains in national income. This is so because the apparent precision of the ratio of efficiency benefits to costs gives it a dominant weight, compared to descriptive statements about other objectives, in decisions on how to rank and approve projects.

Because they fear that their preference for a predominant reliance on national efficiency benefits may not necessarily be that of the Congress, or alternatively, because they fear that Congress men do not have the capacity to understand the consequences of any actions that they might take on this subject, the experts in the executive who are oriented toward economy and efficiency have sought to avoid legislative activity on the criteria themselves. They have not initiated major legislative proposals on criteria; these have been consummated by purely executive measures. This procedure has had a crucial impact on executive-legislative relations in water policy; and for this reason the next section of this article is devoted to an analysis of the recent history of these relations.

It should be obvious that developments of the two New Deal

15 For an illustration of this view, see Robert Haveman, "Benefit-Cost Analysis: Its Relevance to Public Investment Decisions: Comment"; and for a rebuttal, Arthur Maass, "Reply," *Quarterly Journal of Economics*, LXXX1 November 1967, 695–702.

techniques-multiple-purpose planning and benefit-cost analysis-are related. A limited, efficiency definition of benefits and costs has encouraged those who represent interests that cannot qualify under the definition to evolve alternative means-complex review procedures-to promote or protect these interests. Furthermore, some executives who have supported a restricted definition of benefits in order to hold down expenditures have been sympathetic also to a planning process that, by being complex and lengthy, defers demands on the budget for project construction. Support of national economic efficiency as the metric of bca is for them consistent with support of inefficiency in the planning process, or at a minimum indifference to it-although a limit to the inefficiency that they can tolerate is reached when the costs of planning alone become a significant drain on the budget.[16]

III. Executive-Legislative Relations in Water Policy, 1950 to 1969

In December 1950 the President's Water Resources Policy Commission, an *ad hoc* group of nongovernment experts that had been appointed by President Truman earlier in the year, published a far-reaching report that included proposals for legislation to establish objectives, standards, and criteria for water development programs. This report criticized the evaluation procedures of the executive agencies for excessive reliance on national income benefits and costs and for failure to give sufficient emphasis to other classes of benefits for which the agencies had developed no systematic methods of evaluation. Although the commission proposed that bca continue to be restricted to national income effects, it recommended that the resulting benefit-cost ratio be only part of a formal investment appraisal that was to include also a ranking of nonefficiency benefits and costs along a scale from important to crucial, and an explicit trade-off between this ranking and the efficiency ratio.[17]

[16] Once an initial lag in the planning period is overcome, demands on the budget for project construction can no longer be deferred. But the lag has been getting longer and longer in recent years. See text at note 8.

[17] U.S. President's Water Resources Policy Commission: A *Water Policy for the American People* (Washington, D.C.: Government Printing Office, 1950), Vol. I, pp. 55-6s.

After some delay, the commission's legislative proposals were subjected to an intensive and elaborate review by the Bureau of the Budget, which for this purpose established an Interagency Water Policy Review Committee, and this committee was supported in turn by a galaxy of interagency subcommittees. During the months from November 1951 to February 1952 the interagency committee prepared some 40 position papers on the commission's report. Based on these papers and on other material, the Budget Bureau then undertook to draft a Water Resources Policy Act for submission to Congress, but this task was never completed. The agencies and the Bureau of the Budget failed to reach agreement on many of the act's provisions, and in this situation the Bureau and the White House chose not to develop a leadership position for the President.

With respect to criteria for project design and evaluation, the Budget Bureau did move authoritatively, however. It incorporated in a budget circular, binding on all executive agencies, those criteria that it approved and that in its view could be proclaimed without additional legislative action.[18] Both the decision to substitute an executive action for a legislative proposal and the substance of the standards of the budget circular, which differed significantly in emphasis and detail from those proposed by the Policy Commission, were disapproved by major agencies.[19] Thus, in an environment of agency discord, the Bureau of the Budget was more willing to take executive action that was definitive than to perfect a legislative proposal that would have been subject to further debate in the Congress.

It should be pointed out, however, that the provisions relating to project standards in the Bureau's draft Water Resources Policy Act were so general that if the Act had been submitted to and ap-

[18] Budget Circular A-47, 31 December 1953. The circular was binding on executive agencies in the sense that it was used by the Bureau to review agency reports, and any deviation from the circular's criteria had to be justified by an agency= David C. Major, "Decision-Making for Public Investment in Water Resources Development in the United States" (Cambridge, Mass.: Harvard Water Program, 1965), chap. 2, reviews the history of Budget Circular A–47 and related documents.

[19] The Acting Secretary of the Interior wrote to the Budget Director on 3 September 1952, commenting on the draft budget circular: "I believe that a legislative base is essential to the adoption of new substantive policies in this field. ... I do not consider ... a circular to be a suitable means of establishing policy."

proved by Congress in the draft form, a budget circular similar to the one that was issued could have been promulgated to execute the act. In a memorandum to executive agencies analyzing its draft legislation, the Bureau had said that "restriction of the evaluation section of the bill to general principles is based on the undesirability of crystallizing detailed evaluation standards in legislation at this time." [20] But it was effective legislation action, not crystallization of detailed standards, that was to be avoided; for the latter, as we have seen, was considered to be desirable, where the process could be controlled entirely by the executive branch.

Predictably, some members of Congress, especially but not only those who were unhappy with the substance of the standards of Budget Circular A-47, objected to "the assumption of executive authority over conservation and development policies," and they sought to "reaffirm Congressional control" over this subject. Their efforts peaked in 1955–1956 when the Budget Bureau sent to the executive departments draft revisions of Circular A-47 that, among other provisions, would have required planning agencies to rely even more heavily than before on the single objective of national income in project design and evaluation. These proposed revisions were based in part on the report of an *ad hoc* Cabinet Committee on Water Resources Policy that President Eisenhower had created in 1954.[21] The President had sent the cabinet committee's report to the Congress for its information, but the report's recommendations relating to criteria for project design and evaluation and to certain other subjects were to be effected by executive action.

The House Committee on Interior in 1955 and the Senate Committees on Interior and on Public Works jointly in 1956 held hearings on the draft revised circular; and as a consequence of objections raised in these hearings to both the procedure of execu-

20 Bureau of the Budget, "Section by Section Analysis of Draft Water Resources Policy Act of 1952" (mimeographed, 2 June 1952), p. 6.

21 U.S. Presidential Advisory Committee on Water Resources Policy (initially Cabinet Committee on Water Resources Policy), *Water Resources Policy* (Washington, D.C.: Government Printing Office, 22 December 1955). The Budget Bureau participated in the committee's deliberations. At about the same time the Committee on Organization of the Executive Branch of the Government (Second Hoover Commission) issued its *Report on Water Resources and Power* (H. Doc. 84–208) and the report of its Task Force on Water Resources and Power.

tive policymaking and the substance of the policy, the Bureau decided to not issue the revised circular.[22] Further efforts, however, by the Congress, especially the Senate committees, to persuade the executive to propose standards to the legislature for its consideration failed; and the Congressional committees themselves were unable to draft legislation on this complex subject without the aid of an executive initiative, including extensive data from the executive agencies on the engineering and economic effects of alternative standards.[23]

The committees failed also to persuade the executive, as a substitute for initiating legislation on standards, to design projects for two or more alternative objective functions, leaving it to Congress to select the project design that it preferred. They did succeed, however, by means of a Senate Resolution that was adopted in 1958, in persuading the agencies to provide Congress, in each survey report, with a limited amount of data on projects and standards that were alternatives to those that were being recommended in the report.[24] But these additional data were written in attachments to the survey reports, so that they did not limit in a meaningful way the agencies' full reliance on Budget Circular A-47 in designing projects and programs. As a matter of fact, the concepts that had been included in the draft revision of this budget circular, requiring more attention than before to national income in project design and evaluation, came to be practiced in the executive agencies to a significant degree, even though the *Bureau did not formally promulgate them.

Frustrated by the absence of legislative proposals from the executive for water resource development, the Senate in 1959 took the unusual action of establishing a select commission of investigation for the purpose of doing what is ordinarily the executive's work of preparing the early stages of the legislative process.[25] This

[22] U.S. 84th Congress, House Committee on Interior, *Hearings on Discussion of Budget Bureau Circular A–47 and the Related Power Partnership Principle* (1955); and Senate Committees on Interior and on Public Works, Joint *Hearings on Conservation and Development of Water Resources* (1956).

[23] See legislative documents relating to Senate Resolutions 84–821, 85–148, 85–248, 85–299.

[24] S. Res. 85–148; U.S. Army, Corps of Engineers, Manuals — EM 1120–2–117, Application of Senate Resolution 148 (1 January 1959).

[25] S. Res. 86–48; S. Rpt. 86–145; 86th Congress, Senate committee on Interior,

committee, which included senior senators from the several legislative committees that have jurisdiction over water matters, was instructed to make studies of "the extent to which water resources activities in the United States are related to the national interest, and the extent and character of water resources activities ... required to provide the quantity and quality of water [needed] between the present time and 1980 ..., to the end that such studies and the recommendations based thereon may be available to the Senate in considering water resources policies for the future." In its report recommending that the select committee be established, the Committee on Interior observed:

> Since 1949, four Presidential commissions and an advisory committee of Cabinet members have made major studies of water resource problems. The reports of these studies have been forwarded to the Congress and they provide much useful information. The reports, however, have not been accompanied by legislative recommendations of the President, and no proposals based on these studies of water resource problems have been transmitted to the Congress in a form that could be considered for legislative action.[26]

In 1959 and 1960 the Senate select committee published in 32 committee prints the results of factual studies that were undertaken at the committee's request by federal and nonfederal agencies. It held 25 days of public hearings in Washington and throughout the country. The main body of the select committee's final report said relatively little that was specific about standards and criteria for project evaluation; but a supplemental statement by four committee members criticized bca for its overemphasis on economic efficiency and proposed new standards to take into account the effects of projects on rates of national growth, on the

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Hearings on S. Res. 48: Development and Coordination of Water Resources; Congressional Record, CV (1959), 6302–6308.

[26] S. Rpt. 86–145, 6, 7.

This Senate action involved, to be sure, criticism of a Republican administration by the Democratic Senate majority; but it involved, also, criticism of the executive by the Congress. The resolution establishing the select committee was adopted in the Senate unanimously with the active support of both the Democratic and the Republican floor leaders.

generation of employment in underdeveloped areas and the distribution of income to them, and on the human values of water resource development that do not produce monetary benefits and revenues. "In short, the standard must relate the particular water resource development to our national destiny in a much more complete way than the mathematical cost-benefits device we are now using." [27]

The select committee made its report ten days after President Kennedy had been inaugurated. Soon thereafter the new Director of the Budget, Mr. David Bell, appointed a Panel of Consultants, who were well-known experts in the field of public investment economics, to formulate standards and criteria for designing and evaluating federal water resource projects and programs. This panel in its report, submitted in June 1961, criticized the excessive, almost exclusive, concern of the existing standards with national income as the objective of water resource development, and it proposed alternative standards and alternative methods of bca that would give greater attention to the other objectives.

As in the case of the 1950 Water Policy Commission, the Budget Bureau was not prepared to accept the proposals of its consultants, nor did it submit the consultants' report to Congress or to the public for their consideration.[28] Instead the report was handed to an interagency Cabinet-level committee which drafted a new statement that was subsequently approved by the President to replace Budget Circular A-47. This 1962 statement of criteria, which is still in effect, gives more attention to nonefficiency objectives than did the budget circular. It is so general a document, however, and so poorly drawn that it requires extensive interpretation and refinement to be operative. And the process of refinement has led to continuing the almost exclusive concern of bca with national income benefits and costs.

The 1962 statement was as much an executive document as Budget Circular A-47 which it replaced; for it was not submitted to

[27] The committee's report is S. Doc. 87–29. The quotation is from pp. 142f.

[28] The report was not printed, to the dismay of its authors, although a limited number of mimeographed copies were made available: Maynard M. Hufschmidt, John Krutilla, and Julius Margolis, with the assistance of Stephen A. Marglin, "Standards and Criteria for Formulating and Evaluating Federal Water Resources Developments" (mimeographed, 30 June 1961)

the legislature for review and approval (although there were informal discussions concerning it between the Executive Office of the President and certain members of Congress).[29] The statement differed from its predecessor, however, in that it was approved by the President rather than by the Bureau of the Budget. The Bureau had lost the capacity to act in its own name, because of the unpopularity that it had earned in Congress with Circular A-47.

On recommendation of the President, this modified procedure for approving standards was subsequently written into law, in the Water Resources Planning Act of 1965. This act gave statutory status to a cabinet-level Water Resources Council that, among other duties, was given authority to establish, with the approval of the President, standards and procedures for the formulation and evaluation of federal water projects.[30] It is interesting to note that Congress in 1965 accepted the administration's proposal that the executive alone establish standards and criteria. Given the history of their frustration over Budget Circular A-47, one might have expected Congress to amend the President's bill and provide for legislative review and approval of these standards. The House, on recommendation of its Committee on Interior, did amend the legislation to require that the council hold public hearings before it established standards. The Senate bill had not contained this provision, and the conference substitute included only a requirement that the council consult with interested parties, both federal and nonfederal. But a requirement for Congressional action on the standards was not discussed in the legislative deliberations. At the time, Congress was satisfied, apparently, with a transfer of for-

29 After it was proclaimed by the President, the statement was transmitted to Congress for its information, for which purpose it was printed as Senate Document 97 of the 87th Congress.

30 Public Law 89-80. The Water Resources Council includes five cabinet officers and the chairman of the Federal Power Commission as members; two cabinet officers are associate members, and the Director of the Budget and the Attorney General participate as observers.

From the point of view of the Budget Bureau, this change may be more nominal than real; for the President will always ask the advice of the Bureau before he approves of any standards that have been proposed by the Council, and the Bureau's views will be especially important when the cabinet council members disagree. Perhaps for this reason the Council has asked the Director of the Budget to participate in its meetings as an official observer.

mal authority to issue standards from the Budget Bureau to a statutory cabinet council and the President.[31]

It would be incorrect to conclude from this evidence, however, that Congress wants to avoid participation in determining standards and criteria for public investments. As we shall see below, a significant portion of the Senate has involved itself recently in the standards work of the Water Resources Council. Also, the year after it passed the Water Resources Planning Act, Congress amended a similar executive proposal so as to require legislative approval of investment criteria. The President's legislation to establish a Department of Transportation provided that the Secretary of Transportation should develop standards and criteria for the economic evaluation of proposals for the investment of federal funds in transportation facilities, and that he promulgate these upon their approval by the President. After considerable deliberation, Congress amended this to require legislative approval of the standards before they are promulgated. Congress also added to the administration bill a section that instructed federal agencies on how to calculate primary direct navigation benefits of water resource projects, thereby overruling a 1964 Budget Bureau standard that had restricted the definition of these benefits, and withdrawing from the Water Resources Council and the President authority to effect standards in this area.[32]

31 See legislative documents relating to Water Resources Planning Act of 1965, especially S. Rpt. 89–68; H. Rpts. 89–169 and 89–603.

32 Some professionals in the executive and in the academic community have said that Congress's definition of benefits in this case is theoretically indefensible; and furthermore that Congress's action proves that the legislature cannot be trusted with the subject matter of objectives and standards. On the first point the critics are no doubt right; the Congressional definition is not consistent with a pure objective of economic efficiency. The disagreement was really over objectives. Those who wanted the broader definition of direct navigational benefits meant that the single objective of national income was not the only component of the objective function of the Government's navigational program.

As for the second part of the criticism, that Congress's action in this case proves that it is not to be trusted with matters of objectives, standards, and criteria, the objectors in the executive have themselves to blame in part. The standard that Congress sought to overrule by its actions had been adopted in 1964 by executive action, with no formal presentation to, and consideration by, Congress. Had the executive initiated a legislative action in that case, the results might have been different in several respects. Having made a legislative proposal, the executive officers would have been in a better position to explain and defend it than they were in defending themselves against a Congressional initiative to overrule a purely executive action. Furthermore, the subject would have been considered by the

The Water Resources Council has only recently turned its attention to standards and criteria, having devoted its early years to organizational matters, including "rationalization" of the planning process, as discussed in the first section of this article.[33] Up to the fall of 1969, the only standard that has been recommended to the President by the Council, and approved by him, is one that raises the discount rate that is used by the planning agencies to compare present and future benefits and costs. As explained previously (see note 14), a principal consequence of such a rate increase is to reduce the size and cost of water resources projects and programs; and it is well known that the Budget Bureau, with this purpose in mind, put pressure on the Council to take the action. The President's Budget Message of January 1968 included raising the water program discount rate as one of several "reforms" proposed for the purpose of reducing the levels of various programs, with the notation that although no immediate savings would be realized from this particular reform, the long term effects could be substantial.[34] Significantly, public announcement in December 1968 that the President had approved the higher rate was made by the Budget Bureau, not the Water Resources Council.[35]

The limiting effects of higher discount rates are especially pronounced when they are used with a technique of analysis that restricts benefits and costs to those related to efficiency or national income gains. Thus, when it became clear that the Water Resources Council would raise the discount rate, those who opposed reductions in water programs, or who opposed this indirect technique for achieving such reductions, began to insist that the Council review all procedures for project evaluation, especially those that restrict the counting of benefits in bca.

The Senate Committee on Interior, reporting in June 1968 a minor bill to revise the authorization of appropriations for ad-

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committees that deal with public works and commerce as part of standards legislation rather than, as was the case, by committees on government operations as part of an organizational proposal to create a new department.

See legislative documents relating to Department of Transportation Act of 1966, P.L. 89670, especially H. Rpt. 894701; S. Rpt. 89–1658; H. Rpt. 89-2236.

[33] See pp. 216–217 *supra* and Steele, "The National Water Resource Assessment . . . ," *op. cit.*

[34] H. Doc. 90–225, Part I, pp. 19–22.

[35] Bureau of the Budget Press Release, 22 December 1968.

ministrative expenses of the Council, said: "The Committee believes that the Council should give attention to all of the criteria utilized in the economic analysis of water resource projects, of which the discount rate is only one part. Of particular concern is the impact of water resource development upon other [than efficiency] economic and social objectives of the nation." [36] In January 1969, after the discount rate order had been issued, fifteen senior Senators, ten Democrats and five Republicans, wrote the Secretary of the Interior, who is chairman of the Council, complaining because public hearings had not been held on the discount order; stating their view that increasing the discount rate cannot be justified without at the same time improving methods of benefit analysis so as to account for nonefficiency benefits; requesting the Council to give priority to developing revised standards for estimating benefits; and urging that regional hearings be held "to insure the full development of all the .. facts necessary to make a responsible determination as to improved methods of computing project benefits." [37]

In response to these and other communications received from many sources, the Council decided to review evaluation procedures. It formed a Special Task Force for this purpose, and held a series of regional and national hearings during 1969. It is too early to tell what the Council and the President will do, but preliminary drafts by the Task Force, now circulating, would make important changes in existing standards, including recognizing multiple objectives and reducing drastically the special preference that has been accorded heretofore to national income gains. Although the proximate cause of these proposed standards was, apparently, public reaction to the increase in the interest rate, their drafting was made possible by recent developments in multiple-objective theory and recent efforts of the Army Corps of Engineers to implement multiple-objective techniques.

As for procedure, the Council intends, apparently, to promulgate the new standards, after the public hearings, and after obtaining the President's approval. It will be interesting to see how the

[36] S. Rpt. 90-1234, p. 3.

[37] The letter of 13 January 1969 has been widely reported, including *Reclamation* News, February 1969, p. 1.

Council handles Congressional liaison in this round of decision-making. The chairman of the Flood Control Subcommittee of the House Committee on Public Works, after criticizing present standards, announced in June 1969 that his group would hold public hearings "on the entire matter of estimation of benefits of water resource development projects with a view toward determining appropriate legislation setting forth the necessary criteria for use by the pertinent federal agencies." [38]

In summary, between 1950 and 1969 the leaders of the executive have not submitted a proposal on objectives and standards to Congress for fear that Congress might butcher their sacred cow of national economic efficiency. But by not doing so they have taken unto themselves responsibility for determining national policy without discussion or effective oversight in the legislative process. When Congressional committees pointed this out, the executive responded, in effect, that the provisions of their circulars were not so much policy objectives as design criteria, and that the Congress would have an opportunity to review how the criteria were being applied when it considered for authorization the individual projects that had been designed in accordance with them.

It is one thing if Congress's major activity in the legislative process is to review and authorize reports on individual projects that have been planned in accordance with the single objective of national economic efficiency, without any way of determining what the recommendations would have been under alternative objectives; and quite another if its major activity is to review and accept, reject, or amend the President's proposals on what should be the objectives for planning projects in the first place. The committees of Congress have wanted more of the latter action; the executive has preferred that Congress concern itself principally with individual projects.

These facts illustrate an aspect of executive-legislative relations that is poorly understood. Emphasizing service to constituents as the role of the individual Member of Congress, many political analysts contrast a project-oriented legislature with a general-interest-oriented executive-the President is, after all, the only

[38] *Congressional Record* (daily ed., 10 June 1969), p. H4659.

elected officer who is accountable to the nation as a single constituency. But this contrast is not necessarily valid.

Constituency service is, to be sure, one role that all legislators play, but they play other roles too-in general legislation, administrative oversight, public education--and each member is free to select the roles that he wants to emphasize.[39] Furthermore, the committee structure and floor procedures of Congress are designed to enable the legislature to play as its principal institutional role that of control over the executive's legislative initiatives and the executive's administrative performance.[40]

In certain situations where the President fails to initiate legislation, Congress can do so. But that is abnormal; in the normal case the President sets the agenda for the legislature. Thus, if Congress is concerned principally with picayune details of programs or with individual small projects, rather than with objectives and criteria for designing a program of projects, it is frequently because these details and projects are what the President has presented to Congress on his initiative. It is popular to speak of the biennial omnibus Rivers and Harbors and Flood Control Act that authorizes individual projects as Congress' porkbarrel bill. It would be more accurate to call it the President's porkbarrel bill, for, with few exceptions, all of the projects in the bill have been either recommended to the Congress by the President or submitted to the Congress with his approval but without recommendation. This has been the form of the President's initiative; and in recent history no President has used his initiating authority to propose that Congress consider standards for a program of water resource projects. Quite the opposite, as we have seen, even though Congress has been receptive to, even insistent on the President's taking the higher road.

Members of Congress as constituency servicemen are interested in securing authorization for water projects in their districts, but they are interested also in program standards, because these stand-

[39] Lewis A. Dexter, "The Job of the Congressman," in Raymond A. Bauer, Ithiel Pool, and Lewis A. Dexter, *American Business and Public Policy* (New York: Atherton, 1963).

[40] For further development of these points, see Maass, "System Design and the Political Process," which is Chapter 15 of Maass, et *al., Design of Water-Resource Systems, op. cit.*

ards determine how their projects will be designed, but also because they have a broader interest in the government's role in public investments for the conservation and development of resources. In this area of government activity, and no doubt in others, the executive, on the other hand, prefers, if it can, to limit Congress to a narrow role of constituency service, in part, perhaps, because the President wants to use projects in return for votes, but principally because professionals in the executive do not trust Congress in matters relating to future demands on the budget. Where the facts and analyses necessary for legislative initiative are complex, as they are in criteria for public investments, the executive stands a good chance of realizing its preference; Congress does not have the capacity to initiate on its own.

IV. Public Investment Planning: Capacity for Change

Is the present state of public investment planning in the United States the natural and inevitable consequence of the play of special interests in our society, or can the relations between multipurpose planning and benefit-cost analysis be molded into different forms? The prevailing fashion in political science would argue the former: that the present state of affairs is the consequence of a natural, partisan, mutual adjustment among the interests, and that this is fine. I do not agree.

An adequate analysis of political institutions in terms of interactions among different groups and their representatives must perform two different, but related, tasks. The first assumes that the preference functions of the participants in decision-making are given, and is concerned with factors that determine the influence of the various participants' interests on the final outcome. This is the so-called bargaining problem, and it has preoccupied political scientists in recent years. This attention has led them to see government institutions principally as facilities for bargaining. It has led. also to a skepticism about reform, for the models that political scientists have used to study bargaining are nominally nonprescriptive. In fact, however, these models have been used widely to defend the present condition. Assuming that the par-

ticipants are willing to live with the results of their bargaining and that there is some minimal freedom for new groups to form and participate, then whatever is is right.

The second task relates to how alternative forms of political institutions affect the preference functions of those involved in decision-making. It does not assume that these preferences are given, as in the bargaining problem, but that institutions themselves influence the preferences. The participants in any situation of choice can respond in several ways—in terms of their individual interests in the narrowest sense, of the sectional interests of their occupational, bureaucratic, or other social groups, of the general interests of society as a whole as they perceive these; and the particular response that they make is determined in part by the structures and processes of government.[41]

According to this analysis government institutions are needed not only to facilitate bargaining, but for the equally important purpose of framing the question so as to elicit the "right," or in our case, community-oriented, response. This half of the study of institutions has been largely neglected by political scientists in recent years, yet it is more likely than the study of bargaining to lead to a consideration of alternative institutions and reforms-to be less complacent. about the *status quo.*

With some confidence I can say that if behavioral, bargaining models had been in style in 192 1, political scientists would then have analyzed-i.e., predicted-that the objectives of the Budget and Accounting Act would not be achieved in any substantial degree; that the agencies would continue to submit their individual budget requests to the Congress, without coordination among them in the executive, since this had been the pattern of successful partisan, mutual adjustments in the past. And in 1936 they would have "analyzed" that single-purpose development of the nation's rivers would never give way to multipurpose development; just as, using bargaining models in the 1960s, some

41 For further development of this point, see Maass, "Benefit-Cost Analysis," *op. cit.*, pp. 215–218. John Harsanyi makes a similar distinction in speaking of "the bargaining problem vs. the problem of dominant loyalties." "Models for the Analysis of Balance of Power in Society," in Ernest Nagel, Patrick Suppees, and Alfred Tarski (eds.), *Logic, Methodology and Philosophy of Science* (Stanford, Calif.: Stanford university Press, 1962), pp. 442 ff.

political scientists have predicted that the planning-programming-budgeting system (PPBS) will fail.[42] All of these cases are similar in certain respects to that of water planning today, and for the first two, surely, and probably for the third, the analysis would have been wrong.

Professor Aaron Wildavsky's popular book on the budgetary process can be used to illustrate this point further.[43] Wildavsky says, first, that the present process-both preparation of the budget in the executive and its review and approval in Congress-is incremental, fragmented, nonprogrammatic, and the result of bargaining in an environment of reciprocal expectations; and, second, that this is as it should be. In part because there are no objective ways of determining which demands are better than others, we need a process that facilitates representation of different interests and resolution of conflicts among them. The present process achieves these ends because it is so fragmented that it enables all interests to be represented, and so incremental and nonprogrammatic that it provides a basis for compromise, for conflict resolution. Proposals to improve the present process by giving more systematic attention to objectives of programs are, therefore, wrongheaded:

> The practice of focusing attention on programs means that policy implications can hardly be avoided. ... Conflict is heightened by the stress on policy differences. ... Logrolling and bargaining are hindered because it is much easier to trade increments conceived in monetary terms than it is to give in on basic policy differences.[44]

Although it contains important insights that had been neglected in scholarly writing on the budgetary process, Wildavsky's description is not fully balanced; the process is not so fragmented and nonprogrammatic as he claims. But the principal criticism to be made

[42] On PPBS see Aaron Wildavsky, "The Political Economy of Efficiency: Cost-Benefit Analysis, Systems Analysis, and Program Budgeting," *Public Administration Review,* XXVI (1966), 292–316.

[43] Aaron Wildavsky, *The Politics of the Budgetary Process* (Boston: Little, Brown, 1964).

[44] *Ibid.*, pp. 137, 138.

here relates to his prescription rather than description, for the former is made without any treatment of the question of the dominant loyalties of the bargaining parties and of how the forms and processes of government influence these loyalties-without, in other words, half of the task of political analysis.

Assuming, then, that relations between multiple-purpose planning and bca can be molded into different forms--that we are not prisoners of the past-I shall suggest one in which bca is enlarged so that it becomes relevant to a broader range of objectives, while procedures for review and coordination are correspondingly narrowed. I have argued elsewhere that the technique of bca can be expanded to include nonefficiency objectives.[45] The principal problem is not, as so many have claimed, that nonefficiency benefits are intangible, that they cannot be measured. There are metrics or indicators available, and others can be devised, for measuring achievements in terms of redistribution of income, environmental quality, and other objectives.[46] These measures of different objectives cannot simply be added to each other, however. Trade-off or comparison weights are required if programs are to be designed, and benefits and costs evaluated, in terms of multiple objectives. Such weights, when available, tell, for example, how much the nation is. willing to sacrifice in national income in order to achieve a certain level of income redistribution to those who could be served by a program, or in order to achieve a certain level of wildland preservation.

The principal problem of expanding bca is, then, to make the policy decisions that are represented by these weights. These decisions can be made in the legislative process-the President proposing trade-off values, based on analyses made for him by the executive agencies, and the Congress reviewing, amending, approving them. Under this procedure the professionals in the executive would sketch out broadly the alternative engineering and economic consequences of using different trade-off weights in designing a program of projects or a single large project. These

[45] Maass, "Benefit-cost Analysis . . . ," *op. cit.*

[46] See, for example, U.S. Department of Health, Education and Welfare, *Toward a Social Report* (Washington, D.C.: Government Printing Office, 1969), a report on indicators for measuring social change.

alternative consequences would then be compared and debated in a legislative process. After this process resulted in agreement on objectives, the executive agencies would proceed with project planning.

In water policy, trade-off values have not yet been decided in a legislative process. The recent history of executive-Congressional relations in water policy shows, however, that trade-off values could probably be so decided, if the executive initiated their consideration. Executive initiation, it should be noted, is the normal procedure in legislation. Furthermore, recent case studies of federal programs for interstate highways and for rent supplements provide evidence that the legislative process contains considerable capacity to deal with multiobjective functions.[47]

Once a multiobjective design function was determined, the requirements for further coordination would be well defined by that function. The planning process would then become manageable, if the executive were to dismantle the present elaborate review machinery and reconstruct it in accordance with the dictates of a weighted design function. The planning process would be expedited, in other words, if the new form of benefit-cost analysis were substituted for certain stages of coordination; but if the new bca were simply added on top of present procedures, public investment planning would become even more stultifying than already it is.

The partisans of some purposes have vested interests in present procedures, to be sure. For example, the protection of wildlands is promoted, almost invariably, by no development of resources at all, so that the supporters of this and related conservation purposes like a planning process in which they have something approximating a veto on development. They are loath to forfeit this advantage, even though, under the proposed procedures, their purposes would for the first time be evaluated in the all-important benefit-cost analysis, and they would participate in the legislative process that fixed the weights according to which that analysis is made. Such conservationists' objections to multiobjective plan-

[47] On the highway program, see Major, *op. cit.*, chap. 5, and Maass, "Benefit-Cost Analysis ...," *op. cit.*, pp. 219-221. On the rent suplement program, see *ibid.*, pp. 221–225, which was prepared with the assistance of Major.

ning, however-preferring a flat veto to a decision process in which the benefits of their purposes can be compared to those of other objectives-are so blatantly know-nothing in character that they are unlikely t.o stand against a concerted effort to reorganize planning procedures, in which some present institutions and processes may be discarded and others modified and retained for the purpose of debating and reaching agreement on trade-offs among objectives.

Promotion by special-purpose groups of elaborate review procedures as a means for protecting their interests in a program is a form of bureaucratic conduct that we noted earlier. Perhaps this observation should be extended to include the following proposition: Where special interests fare better in an environment of ignorance than in one of enlightenment, they will insist on formal and elaborate procedures for coordination.

Finally, we can ask whether Congressional participation in the setting of design standards would result in a large increase in expenditures on water resource projects, as is feared by many in the executive who are concerned primarily with program expenditure levels, and is desired by others in the executive and Congress who have seen the percentage of the federal budget allocated to water resources decline significantly in recent years.

A decision to design for multiple objectives may or may not result in a larger program of projects. Benefits of different objectives cannot be simply added, nor can their corresponding costs. They must be multiplied by trade-off or comparison weights before they can be combined. The values of these weights determine the size and nature of projects, and it is these values that will be determined in the legislative process, according to our model.

The specific Congressional actions discussed in this article suggest that Congress always wants a bigger program (although one legislative subcommittee during the period of analysis, 1950–1969, proposed that Congress enact standards that would have been more restrictive than Budget Circular A-47).[48] But the evidence is not conclusive on this point; in the absence of a well-prepared execu-

48 U.S. 82nd Congress, House Committee on Public Works, Subcommittee on the Study of Civil Works, *Committee Print 21*, p. 39, and *Committee Print 24*, pp. 52–55. Admittedly this proposal did not gain wide acceptance in either house.

tive initiative, Congress has not had an opportunity to consider trade-off values systematically.

If the trade-off values adopted for multiple objectives do result in the design and authorization of a larger program of projects, this may or may not lead to large increases in appropriations. There is a general relation between the size of authorized programs and the appropriations voted to carry them out, to be sure—larger authorizations result in larger appropriations. But authorizations are frequently not met by appropriations, and in the area of water resources the gap between the two has in recent years grown to be so great that the budget constraint has an independent life of its own. The constraint represents, in other words, one objective of the program, but projects are not designed for it.[49] For fiscal year 1969, the Corps of Engineers has been given approximately $700 million for construction work, and the appropriations required to complete projects under construction at this time are estimated to be approximately $5.4 billion. But there are over 450 active authorized projects that are not yet under construction, and a conservative estimate of their cost is $9.7 billion.[50]

[49] If the single objective of today's water resource program were indeed to maximize national income, then we should design all projects so that the last increment added has national income benefits equal to its national income costs, and we should appropriate funds to build all projects so designed — there should be no backlog. We do design projects as if there were no budget constraint, but we do not build all projects. The budget constraint is applied after projects have been designed and authorized, at the time that the executive selects those among all projects that are to be included in the budget. But to combine in this way a national income design objective with a long-term budget constraint, which represents a second, although poorly defined, objective, is inefficient. A limited budget is absorbed by a small number of large projects, each designed to the limits of its contribution to national income. More benefits could be realized from the same budget if the large projects were designed smaller — if the last increments that make the least contribution to national income were not added, in which case additional projects, with greater benefits per unit of expenditure than the last increments of the large ones, could be included in the limited budget.

In other words, where there are multiple objectives, projects should be designed with this fact in mind, and this holds whether the objectives, in addition to the budget constraint, are multiple or simply national income.

[50] For appropriations required to complete projects under construction, see *Budget Appendix for Fiscal Year 1970,* H. Doc. 91-16, pp. 349, 353. For estimated cost of projects not yet under construction, see *Hearings on Public Works Appropriations, op. cit.*, Part I, p. 46. These data do not include projects that. have been planned but not authorized, nor those now being planned. The status of the program of the Bureau of Reclamation is similar.

The use of multiple objectives is likely to result in increased expenditures only if the program of projects so designed is considered by the executive and Congress to be more relevant to the nation's needs than is the existing backlog of projects. This might well turn out to be the case.

HQ AR002963-HQ AR002966

DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
Washington D.C. 20314-1000

CEEC-EI

ER 1110-2-400

Regulation
No. 1110-2-400

31 May 1988

Engineering and Design
DESIGN OF RECREATION SITES, AREAS, AND FACILITIES

1. Purpose. This regulation establishes policy, and guidance for the design of recreation sites, areas, and facilities.

2. Applicability. This regulation is applicable to all HQUSACE/OCE elements and field operating activities (FOA) having Civil Works responsibilities.

3. References.

a. ER 1105-2-20

b. ER 1130-2-435

c. ER 1165-2-400

d. EM 1110-1-400

e. EM 1110-2-410

f. U.S. Army Engineers Waterways Experiment Station (WES), Instruction Report R-80-1

4. Master Plan. Designs for specific areas or facilities will be initiated only in accordance with an approved master plan, when a master plan is required. When a master plan is not required, recreation development shall be based on the appropriate design memorandum. ER 1130-2-435 provides the policy and guidance for the preparation of master plans.

5. Objectives. Recreation developments and facilities should be safe, cost effective, and promote the health, welfare, and enjoyment of the public. Design each area and facility for its appropriate carrying capacity, anticipated management implications, and proper balance between the area's capacity with support facilities and preservation of the natural environment.

This regulation supersedes ER 1110-2-400, dated 7 July 1972.

a. Cost Effectiveness. Achieve a balance between first costs and operating and maintenance costs over the 25 year life expectancy of the project for cost effectiveness. Avoid overdesign of facilities by the judicious use of anticipated visitation, site carrying capacity, and analysis of the 25 year life cycle costing.

b. Standardization. Division offices will establish cost effective regionalized standard designs for commonly constructed recreational facilities. The divisions have the latitude to establish more than one standard design for each type of facility.

c. Health and Safety. The health and safety of the general public will be major considerations in the design of recreation areas and facilities. Designs shall comply with applicable portions of the Corps of Engineers Safety Program (EM and ER 385 Series) and the Occupational Safety and Health Administration (OSHA) standards.

d. Barrier Free Design. Consider equal access to and utilization of facilities by all visitors, when planning and designing recreation areas and facilities. Use the design standards for handicapped facilities in the Uniform Federal Accessibility Standards (UFAS), as published in Volume 49, Federal Register, page 31528, 7 August 1984.

6. Design Guidance. EM 1110-1-400 presents specific design guidance for the planning and design of recreational facilities. EM 1110-2-410 provides access and circulation guidance. Planning guidance for recreation is contained in ER 1105-2-20. Guidance for recreation cost sharing with non-federal entities is contained in ER 1165-2-400. Appendix B of ER 1165-2-400 also provides a checklist of facilities which may be provided in recreation developments at Corps water resource projects. The extent of costs which can be allocated and general requirements for local participation in recreation development and management is contained in chapter 6 of ER 1105-2-20.

a. Design Team. Recreational facility design shall be a coordinated team effort involving planning, design, construction, operations, and non-federal elements. The design team should include a landscape architect with recreation experience or a recreation planner. Designs for recreational facilities such as roads, parking areas, launching ramps, beach developments, and

similar facilities will be field staked and checked by the design team members before the completion of construction plans and specifications. The design team members will visit the sites and areas during construction as a regular part of the design procedure. Once the site or facility has been placed in operation for at least six months, the design team will visit the operational site or facility to evaluate the operational aspects of the design. These visits will verify field conditions first hand and identify any problems that may not have surfaced during the design stage.

b. Technical Coordination. The exchange of ideas, information, and technology generated by field visits, conferences, and publications cannot be overemphasized. All team members need to be constantly aware of new systems and procedures and state-of-the-art technology that will further enhance the planning and design of recreational facilities on a cost effective basis.

c. Engineering Studies. Design recreational and related facilities consistent with the interrelated influences of topographic, geologic, hydrologic, and hydraulic factors. These factors affect the utility of particular sites and/or requirements in the interest of economic, environmental and facility protection. Present a discussion of the factors considered and results of analyses with the summary of decisions in design memoranda. Such discussion will include, as appropriate:

(1) Siting of roads, parking areas, and structures

(2) Possible shore erosion

(3) Surface and sub-surface drainage

(4) Geological stability of sites including soil depths, wind, waves, and current forces

(5) Water quality and water supply

(6) Hydrologic and hydraulic considerations including the minimum time required to inundate camp spaces using the top of conservation pool as a base for time, unless some other water level would be more appropriate

(7) Sanitary investigations

(8) Sedimentation aspects

(9) Evacuation routes from any recreation site or area

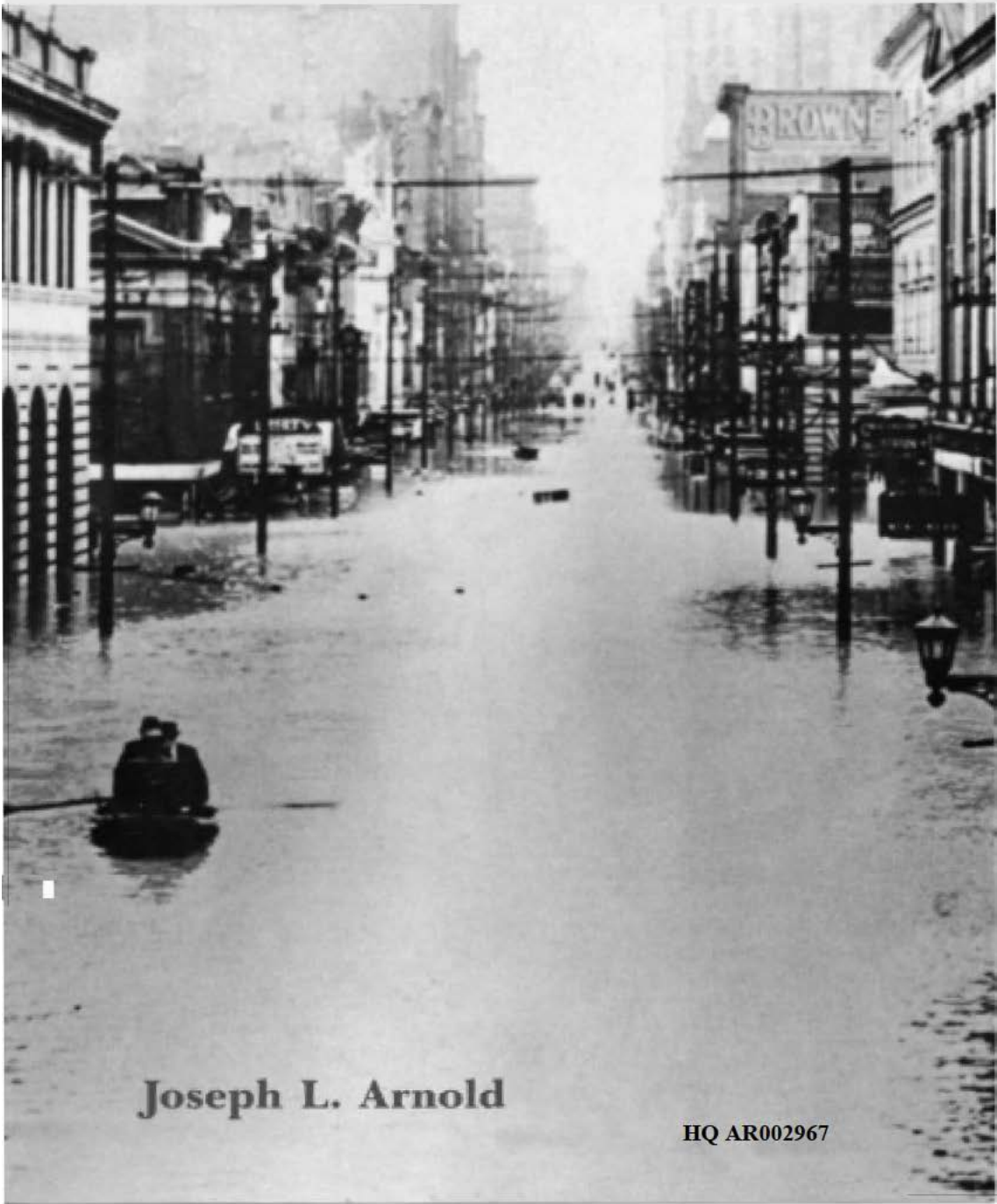
d. Design Memoranda and Plans and Specifications. Phase design and construction of recreational facilities with other project features. Present the design of these facilities in feature design memoranda. Include enough design details for the recreational facility development proposals to serve as the basis for the preparation and approval of project plans and specifications. Perform the design as a coordinated effort among the design professions, making the design a team effort. Designs and design concepts developed by others, particularly where portions of projects are to be leased for operation and management by non-federal park agencies, may be adopted instead of regional standard designs for Corps facilities when approved by HQUSACE. Plans and specifications for construction will be based on designs presented in approved design memoranda.

FOR THE COMMANDER:

PAT M. STEVENS IV
Colonel, Corps of Engineers
Chief of Staff

HQ AR002967-HQ AR003100

The Evolution of the 1936 Flood Control Act



Joseph L. Arnold

HQ AR002967

Other Publications by the Office of History

The Corps, the Environment, and the Upper Mississippi River Basin, by Raymond H. Merritt (GPO S/N 008-022-00220-1).

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ON THE COVER

Flooding in Wheezing, West Virginia, March 1936.

THE EVOLUTION OF THE 1936 FLOOD CONTROL ACT

by

Joseph L. Arnold

OFFICE OF HISTORY
UNITED STATES ARMY CORPS OF ENGINEERS
FORT BELVOIR, VIRGINIA
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Foreword

Few laws have had such an impact on the United States Army Corps of Engineers as the 1936 Flood Control Act. For over 50 years before passage of this act, Congress had been periodically charging the Corps with flood control responsibilities. However, lawmakers generally justified the work on the basis of aiding navigation. It was only in the 1936 act that Congress stipulated that flood control was an appropriate federal activity. The act authorized hundreds of flood control projects and established policies that endure to this day. Moreover, it dramatically increased the Corps' work load, forcing the agency to develop new procedures and offices.

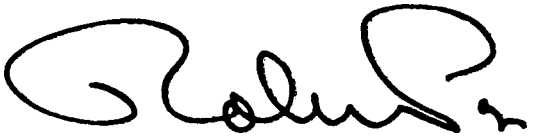
I take particular interest in the 1936 Flood Control Act since its lineal descendant is the Water Resources Development Act of 1986 (Public Law 99-662). In 1936, lawmakers decided that local interests ought to share in the costs of flood control measures. At that depression-ridden time, the decision resulted in relatively modest local contributions for channel and levee projects but left flood control storage in reservoir projects as a 100 percent federal responsibility.

In the years since passage of the 1936 landmark legislation, increasing pressures developed for greater nonfederal contributions in all types of water resources development projects. With the increased environmental awareness of the 1960s and 1970s, arguments for additional nonfederal contributions to enhance economic efficiency were bolstered by demands to reduce the number of water projects with adverse environmental impacts. The executive and legislative branches reached an impasse. Until 1986, no significant new project authorizations had been made since the mid-1970s. Consequently, a backlog of problems created by flooding, drought, and other water-related activities developed.

Over the past several years we, along with other administration representatives and a bipartisan coalition of congressmen and senators, have made a concerted effort to resolve the impasse. To the credit of both those beneficiaries of water projects who agreed to a greater local contribution than in the

past and those who desired 100 percent reimbursement of federal costs, acceptable compromises were made.

I am proud to say that our efforts were concluded with passage of the Water Resources Development Act of 1986. I want to thank the congressmen and senators, especially Congressman Robert Roe and former Senator James Abdnor, who helped us achieve our goal. The 262 water projects it authorizes, at a total cost of $16 billion, will allow us to continue the work set in motion by the 1936 Flood Control Act. We look forward to working with local interests and other agencies of government to promote the safety and welfare of citizens in flood-prone areas of our country.



ROBERT W. PAGE
Assistant Secretary of the Army
(Civil Works)

Preface

This history commemorates an important event in the development of the United States and, especially, of the United States Army Corps of Engineers. In 1936, in response to public demands for federal aid for flood-prone areas of the country and for work relief in the midst of the Great Depression, Congress passed and President Roosevelt signed the first general flood control bill – the first piece of legislation to provide for flood relief throughout the country and to recognize that flood control "is a proper activity of the Federal Government." Most of the responsibility for planning and designing federal flood control projects was assigned to the Army Corps of Engineers, an agency that had been continuously involved with water resources projects since **1824.** Under the authority of the Flood Control Act of 1936, the Corps has developed into the foremost flood control agency in the nation and has shared its knowledge with many organizations in this country and abroad.

The hundreds of reservoir, levee, and channelization projects that resulted from the 1936 act and subsequent amendments have literally changed the face of the nation. The projects have contributed to both the growth of towns and the protection of rural farmlands. Secondary purposes, such as recreation and water supply, have become more important to an increasingly urbanized nation. There are few areas of the United States that have not received the benefits of these flood control projects.

The billions of dollars saved because of flood control projects have more than repaid the cost of the original construction investment. Today, when designing flood control projects, we attempt to balance the economic benefits against potential damage to the environment. We also are aware that even small projects must depend on an equitable sharing of costs between the federal government and local interests. In fact, new cost-sharing provisions were incorporated into the Water Resources Development Act of 1986 (Public Law 99-662) signed by President Ronald Reagan on 17 November 1986. Ths law, whose passage owes much to the joint efforts of the Honorable Robert K. Dawson, former Assistant Secretary of the Army, Civil Works,

and a bipartisan coalition of congressmen and senators, established methods to weed out dubious projects, while granting more credibility to supporters of worthwhile proposals. The act thereby represents perhaps the most important change in federal water resources policy since the passage of the 1936 Flood Control Act. However, these shifting political and economic developments should not obscure the one fact that remains constant: the Corps of Engineers' firm commitment to the protection of life and property against natural disasters.

E. R. HEIBERG III
Lieutenant General, USA
Chief of Engineers

Author's Note

Half a century ago the United States officially recognized "that destructive floods upon the rivers of the United States ... constitute a menace to national welfare" and that "flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States,: their political subdivisions, and localities thereof."[1] The origins of the Flood Control Act of 1936 date back to the 19th century, even though its passage came as part of the New Deal administration of Franklin D. Roosevelt. Every major 20th-century historian has agreed that the New Deal was a turning point in the history of American politics and in the federal government's role in the life of the nation. This certainly applies to the history of flood control. The 1936 act still stands as the fundamental legislative authority under which a vast program of public works costing billions of dollars has been executed throughout the union. The act authorized a program that has saved countless lives and billions of dollars in property. In addition, the program has provided benefits in hydroelectric power, navigation, and recreation. No other nation in the world has undertaken such an ambitious water resources program. The act was the culmination of almost a century of increasing federal concern and engineering progress.

However, the act also mirrored the innumerable conflicting political issues that marked New Deal politics during a presidential election year. Arthur Maass, one of the nation's leading authorities on water resources development, has called the 1936 act a "confused and confusing piece of legislation." The most prominent historian of the New Deal, William Leuchtenburg, said it was "ill conceived and wretchedly drafted," subject to widely conflicting interpretations, misunderstood by most of those who voted for it, and misinterpreted by President Roosevelt, who signed it.[2]

How can this important piece of legislation have such a reputation? The act can be understood only in the context of its political history. The reason for the divergent perceptions of the flood control act is that it states a principle that almost everyone in the government and nation endorsed in 1936 -that the federal

government should take primary responsibility for dealing with the menace of terrifying, huge floods. However, the exact means by which the government was to accomplish this goal was subject to wide disagreement. Those who advocated national flood control could not always agree on financial arrangements, the role of state and local interests, or the relationship of flood control to other water resources goals or programs (particularly hydroelectric power). Thus the final version of H.R.8455 that Congress approved and sent to President Roosevelt contained a clear statement of federal flood control responsibility, but a rather hastily drawn series of implementation features that were a patchwork of compromises thrown together by overworked congressmen on the eve of the presidential and congressional elections of 1936. News of the passage and signing of the act can be seen in the newspapers of May and June 1936 amid long articles on the upcoming national political conventions and elections. The act was forged in the midst of the "Second New Deal" and was part of the great political upheavals of the mid-1930s.

The Flood Control Act of 1936 is a good example of congressional legislation that is fairly clear in its general goals, but confusing and even irrational in its specific policies and administrative machinery. Eventually, new generations of politicians, lobbyists, and experts recast the particular policies and, over time, even altered some of its general goals. Nevertheless, the fundamental goals and direction of legislation in a major problem area like flood control are seldom reversed once the law is set in place. The manner in which our free society makes these fundamental legislative decisions may look awkward to some observers, but it is in fact one of the most impressive and admirable aspects of our system. The establishment of our national policy of flood control in the stormy spring of 1936 is an illuminating example of this great democratic process.

A number of individuals and institutions aided me throughout the development of this study. The staff of the Albin O. Kuhn Library at University of Maryland, Baltimore County (UMBC), was, as always, extremely helpful. In particular I would like to thank Sarah E. Crest, Howard E. Curnoles, Simona E. Simmons, and the Library Director, Dr. Billy Wilkerson. In the Department of History at UMBC, I owe special thanks to Carol Warner and Linda Hatmaker, who typed all the original drafts of the manuscript. I am also indebted to my daughter, Elizabeth C. Arnold, for her many hours spent culling articles from the newspapers of the 1930s.

The staff at the Franklin D. Roosevelt Library in Hyde Park, New York, was diligent and efficient in providing many of the key documents for this study. Equally helpful was the staff in charge of the National Resources Committee records at the National Archives in Washington, D.C. The staff in the manuscript section of Louisiana State University kindly provided helpful background material on Congressman Riley Wilson.

My major debt is owed to the Office of History, Headquarters, U.S. Army Corps of Engineers, at Fort Belvoir, Virginia. Dr. Martin Gordon shared information he had gathered earlier concerning the 1936 Flood Control Act, and Kathy Richardson, Diane Arms, and Fran Watson provided vital support services. My greatest thanks go to Dr. Martin Reuss, who is responsible for this research project and whose vast knowledge of flood control issues and the Corps of Engineers helped me at every turn.

JOSEPH L. ARNOLD

The Author

Dr. Joseph L. Arnold is a Ph.D. graduate of Ohio State University and is currently in the Department of History at the University of Maryland, Baltimore County, where he is director of the graduate program in historical studies. He is the author of *The New Deal in the Suburbs: A History of the Greenbelt Town Program, 1935-1954* and *Maryland: Old Line to New Prosperity* He has also written a history of the Corps of Engineers and environmental issues in the Potomac and Susquehanna river basins for the Office of History of the Army Corps of Engineers. Dr. Arnold's other research interests are city and regional planning, comparative urban devleopment, and American cultural society.

Contents

Illustrations

Illustrations courtesy of the following sources: pp. 24, 64, and 85, National Archives; pp. 27, 28, 30, 40, and 55, Library of Congress; pp. 60 (top) and 66, Farm Security Administration photo collection, Library of Congress; and p. 43, The Johns Hopkins Archives. All other illustrations from the files of the Office of History, Headquarters, U.S. Army Corps of Engineers.

THE EVOLUTION OF THE 1936 FLOOD CONTROL ACT

CHAPTER I

The Origins of Federal Flood Control Activity, 1849-1912

The history of federal flood control measures must be explained in the context of half-a-dozen major floods between 1849 and 1936 that moved Congress to pass legislation. The first significant federal flood control laws were the Swamp Land Acts of 1849 and 1850, which encouraged the reclamation of millions of acres of flood-prone wetlands, especially in the lower Mississippi Valley. A major Mississippi River flood in 1874 inspired a series of federal actions finally resulting in the creation of the Mississippi River Commission in 1879. Costly floods in the lower Mississippi Valley, the Northeast, and the Ohio Valley between 1907 and 1913 led to the establishment of the House Committee on Flood Control in 1916 and the Flood Control Act of 1917, the first act aimed exclusively at controlling floods. A gigantic flood on the Mississippi in 1927 substantially expanded federal flood control funding and raised public awareness to a new level. And, finally, the disastrous nationwide series of floods in 1935 and 1936 were critical in the passage of the Flood Control Act of 1936.

Of course, it would be highly simplistic to explain federal flood control policy in terms of responses to great floods. Certainly, floods affected the timing of federal actions, but the nature of the response-- the means adopted by Congress to deal with flooding -- still requires explanation. The very use of the term "flood control" as the goal of the federal government, rather than the more restrictive and accurate term "flood damage reduction," represents a more optimistic human, institutional, and political response to a set of natural, engineering, and economic problems.

It should be noted that no major federal response to flood destruction occurred until the beginning of the 20th century. Despite the long history of severe flooding by the nation's rivers in the 19th century, Congress passed no legislation that was directly and openly aimed at flood control until 1917 and under-

took no nationwide flood control program until 1936. There are several reasons for this. First, the national government's modest financial resources seemed to preclude federal financing of expensive flood control measures during the 19th century. Second, there were formidable engineering and economic obstacles to flood control by methods other than levees, such as reservoirs. Third, the relatively modest growth of cities along the nation's rivers kept flood damage fairly low until the end of the 19th or the beginning of the 20th century. Finally, many political leaders believed that federal aid for flood control was unconstitutional.

The constitutional issue periodically erupted in flood control debates until 1936. The framers of the Constitution appeared to agree that the federal government should not be allowed to spend tax dollars to make improvements that benefited only a particular locality. While the Constitution did not specifically prohibit federal funding of "internal improvements," neither did it categorically authorize them. Those wishing to see the development of a national system of roads and federally funded navigation improvements on the nation's rivers focused on Article I, Section 8, of the Constitution, the Commerce Clause, which gave Congress the authority "to regulate commerce ... among the several states." Supporters of internal improvements, such as John C. Calhoun and Henry Clay, argued that the right to regulate commerce meant the right to facilitate or aid in its movement by funding road and river navigation projects. Presidents Madison (in 1817) and Monroe (in 1822) disagreed, and they vetoed federal transportation bills. The issue was hotly contested until 1824, when, in the landmark decision of *Gibbons v. Ogden,* John Marshall's Supreme Court stretched the Commerce Clause to permit the federal government to finance and construct river improvements. This decision launched the federal government, including the U.S. Army Corps of Engineers, on a program of river improvements that began in the 1820s and continues today. Over the whole period the subject has pitted one locality and region against another amid cries of "pork barrel" spending and "log-rolling," with the Corps of Engineers often caught in between.[1]

For reasons that have yet to be investigated adequately, the right of the federal government to improve navigation under the Commerce Clause was extended to flood control in a very slow, halting, and, it must be admitted, occasionally disingenuous

manner; sometimes projects were authorized under the guise of navigation improvement when everyone in Congress knew the work was also for flood control. Until the Progressive Era of the early 20th century, many, perhaps most, congressmen continued to believe that federal flood control projects (except perhaps on the Mississippi) were unconstitutional. They suggested that the aid to navigation from levees or dams was small compared to the enormous local benefits received by residents and property owners in the protected area. This issue arose repeatedly between the 1870s and 1917 in regard to the federal expenditures for levees along the Mississippi. However, these expenditures were viewed less rigidly from a constitutional perspective, because many believed that the Mississippi was uniquely national. Some politicians went so far as to contend that the Mississippi was actually a piece of federal property, and Congress had the responsibility to protect residents and navigation interests alike against the onslaught of the river's periodic floods. Those who advocated this position often referred to Article IV, Section 3, of the Constitution, which states that "the Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States."

By the time Congress established the Inland Waterways Commission (1909) and the Committee on Flood Control (1916) and passed the Flood Control Act of 1917, its traditional reluctance to spend federal funds for local benefits was weakened but not dead. It continued to enter into discussions right up until passage of the 1936 act.[2] As one of the leading authorities on water resources law recently stated, the federal government has taken "a rather attenuated construction" of the Commerce Clause promulgated in 1824 and used "this somewhat flimsy-looking, but by no means shaky structure for a foundation... [for] a huge program of river regulation and water control."[3]

The result of the constitutional controversy over the Commerce Clause and internal improvements was legislation relating to navigation improvements, which was promptly passed, while flood control legislation received indirect and limited attention. Passed partially in response to severe flooding in the lower Mississippi Valley in 1849, the Swamp Land Acts of 1849 and 1850 transferred "swamp and overflow land" to most of the states along the lower Mississippi on condition that the revenue

the states obtained from selling the land be used to build levees and drainage channels. The acts required no expenditure of federal funds, but they provided a means to put millions of acres of land into agricultural use.[4]

The emergence of the flood control issue at that time appears linked to the increasing burden of levee construction along the river, the frustrations of coordinating plans among various state and local interests, increasing commerce on the river, and the growth of various towns along the Mississippi. The building of levees along the Mississippi had begun in New Orleans in 1717 and had proceeded in fitful spurts up and down the Mississippi and its tributaries. Until the 1840s and 1850s the work, expensive and difficult, was largely the responsibility of the riparian landowners. By the 1840s it had become evident that a more coordinated approach was needed in order to spread the cost and work more equitably. Consequently, the delta states created public levee districts. While a distinct improvement over the earlier reliance on individual landowners, these districts still faced formidable financial and engineering challenges. They joined navigation interests in looking to Washington for help. John C. Calhoun, a man familiar with the problems of levee construction, called for federal aid at the Memphis Commercial Convention of 1845. Mississippi Valley politicians echoed Calhoun's call on countless subsequent occasions.[5]

Aside from passage of the Swamp Land Acts, the federal government's response to the floods of 1849 and 1850 was relatively modest. However, one act was passed that was to have an unforseen and substantial impact on flood control development. This was an 1850 act that appropriated $50,000 for a "topographical and hydrographical survey of the Delta of the Mississippi, with such investigations as may lead to determine the most practicable plan for securing it from inundation." The appropriation was eventually split in order to fund two separate surveys: one by Charles Ellet, Jr., a well-known civil engineer, and the other by Captain A.A. Humphreys and Lieutenant H.L. Abbot of the U.S. Corps of Topographical Engineers.

Ellet's report was published in 1852 and immediately created a controversy because of the author's contention that tributary reservoirs could effectively contribute to flood control hundreds of miles distant on the lower Mississippi. The larger and more influential Humphreys-Abbot report was not completed until

1861. In it the authors emphatically stated that only levees could solve the flood control problem on the lower Mississippi. When Humphreys became Chief of Engineers in 1866, he labored constantly to quash opposition to the "levees only" policy, and it became the gospel for the Corps of Engineers for over 60 years, until the 1927 Mississippi River flood decisively showed its limitations.[6]

Between 1866 and 1926, the Corps investigated the flood problems on many of the nation's rivers – and as in 1850 -- often in response to some particularly disastrous flood. Nearly always, these investigations were labeled navigation surveys. The surveys dutifully discussed, often in great detail, how some wild and rocky river could be improved for navigation. Then, as a sort of lagniappe, a brief survey and discussion of flood control measures that might be undertaken by local interests was added. If the only solution was a reservoir system, Corps reports seldom judged the project to be practical from either an engineering or economic standpoint.

The use of dams for flood control was often suggested, but the idea seemed impracticable to most people. Furthermore, dam failures such as the one at Johnstown, Pennsylvania, in 1889 that killed more than 2,000 people created public skepticism over this type of protection. The Pittsburgh Flood Commission Report of 1912 was the first effort to interest the federal government in funding a reservoir system for flood control. And the first conclusive proof that such a system could work did not come until the completion of the Miami Valley Conservancy District in 1923 – only 13 years before the passage of the 1936 Flood Control Act.[7]

Meanwhile, the problems of floods on the Mississippi River -the "nation's highway" as some politicians called it – continued to elicit federal interest but very little agreement on what the federal role ought to be. After the Civil War, which resulted in the neglect, deterioration, and destruction of hundreds of miles of levees, President Andrew Johnson, Secretary of War Edwin Stanton, and various congressmen spoke in favor of federal levee aid. A number of bills were introduced for this purpose, but none made it through the congressional committees; and the postwar flurry of interest waned as states and local levee districts renewed their own efforts.[8]

The Mississippi flood of 1874 stirred Congress again. It

appropriated $90,000 for flood relief and authorized another Corps of Engineers study. The study stated that while local efforts to build levees were heroic, they were uncoordinated and inadequate. Congress was still reluctant to act, and it was not until 1879 that it finally created a Mississippi River Commission (MRC) to identify and implement the most satisfactory flood control plan possible in order to improve navigation and protect population and property.[9] In accordance with the authorizing statute, the MRC consisted of seven members: three officers from the Corps of Engineers, three civilians, and one employee of the Coast and Geodetic Survey. With some modifications, commission members eventually adopted the "levees only" policy of Humphreys and Abbot as their own plan.

Despite nagging legal and constitutional questions, Congress allowed the MRC to move gradually into a full-scale campaign to control the river. Periodic floods forced the congressional hand, as it became increasingly clear that only a substantial federal commitment would solve flood problems along the lower Mississippi. The first congressional appropriations for levee construction were emergency relief measures, but even these repairs were justified as navigation improvements. However, by the turn of the century, the MRC was engaged in full-scale levee construction, dredging, and revetment work. Congressional proponents of openly avowed flood control whittled away at the wording of the rivers and harbors acts, dropping the specific prohibition of flood control that had appeared in every commission appropriation since 1881 and inserting a phrase stating that funds could be used for "the general improvement of the river" and other language implying the goal of flood control.[10] By 1912 the MRC was plainly stating that "the main purpose" of its levee construction program was "to protect the alluvial lands and their owners" from floods.[11]

Once again, however, the river became an issue in Congress. It was reported in the *Congressional Record* that the federal government had spent $30 million on Mississippi River levees during the years 1882 to 1916 and that local levee districts had spent approximately $90 million during the same period.[12] The results were impressive. The levee system, which had contained 33 million cubic yards of earth in 1882, now contained approximately 250 million cubic yards. Unfortunately, the floods of 1912 and 1913, the worst yet seen on the river, showed that the levees

still were not strong or extensive enough. Property losses from these floods were estimated at $61 million, and over 270,000 people were driven from their homes.[13] The federal government was now caught in a dilemma. The Mississippi River levee districts said they had taxed and borrowed themselves to the limit and were unable to continue bearing the financial costs necessary to strengthen the levees. But they, along with almost all state and local officials in the Mississippi Valley, agreed with the Corps of Engineers that levees were the only reasonable hope for containing the river's ever higher crests. Either Congress would have to bear a much larger share of the cost of levee building or the system would have to be abandoned. Millions of acres of rich farmland would revert to swamp, and the millions of tax dollars already spent on the levees would have been wasted.[14]

CHAPTER II

Congress, Flood Control, and Multipurpose River Development 1912-1933

The Mississippi River floods of 1912 and 1913 were significant in the history of congressional flood control policy, but equally significant were other major floods. From the late 1890s until 1917, all of the country's major river basins experienced periodic inundations. The 1907 flood virtually devastated Pittsburgh's "Golden Triangle" area and caused $6.5 million in damages. This disaster sparked the formation of the first large flood control lobby group outside the lower Mississippi -the Pittsburgh Flood Commission. The commission's 1912 report became a landmark study of diversified flood control programs including reservoirs, levees and floodwalls, and reforestation.[1] The Pittsburgh flood of 1907 and the Ohio floods of 1913 opened a new chapter in the history of flood control. They severely damaged heavily settled regions in Pennsylvania and Ohio. The losses in the Ohio floods of 1913 amounted to $147 million while they amounted to "only" $61 million in Mississippi's predominantly agricultural flood plain during the flood of the same year. Also, the Ohio floods (in the Miami Valley area) killed 467 people, while the slowly rising Mississippi seldom claimed lives.[2] City-dwellers who had thought themselves relatively safe from flooding suffered as much as farmers had previously on the banks of the Mississippi in other floods.

The destruction resulting from the Ohio and Mississippi floods, along with flood damage on a number of other rivers from California to New England, stirred Congress to think seriously about a nationwide program of flood control. Spearheading this reform was Senator Francis G. Newlands (R-Nevada), author of the Reclamation Act of 1902 and the indefatigable proponent of a multipurpose inland waterways program that would encompass flood control, navigation, water power, and irrigation.[3]

***Refugees and livestock on a levee during the Mississippi River** flood, 1912.*

Newlands, and a brilliant group of conservationists who worked closely with him, convinced President Theodore Roosevelt that traditional rivers and harbors navigation projects should not be considered separately from other possible water resources uses. In 1907, the year of the great Pittsburgh flood, Roosevelt appointed an Inland Waterways Commission to study the entire question of water resources. The commission, guided by Newlands and his associates, recommended that the federal government undertake a coordinated program of multipurpose river development under the control of a permanent commission appointed by the President.[4]

This recommendation was quickly translated into a bill that Newlands introduced in the Senate in 1909. Congress, however, was unwilling to transfer the gigantic rivers and harbors navigation improvement program into the hands of an independent commission-especially one that would no longer rely on the Corps of Engineers for its decisions. Newlands criticized the Corps and proposed replacing it with civilian engineers responsible to a cabinet-level commission. However, the rivers and harbors bloc in Congress was quite satisfied with the Corps and its own Rivers and Harbors Committee. Moreover, to eliminate serious pork barrel abuses, in 1902 Congress had created within

the Corps of Engineers a Board of Engineers for Rivers and Harbors. Undaunted, from 1909 to 1916 Newlands tried to push his own legislation through Congress, but each time he was defeated.[5] The first break in this wall of congressional intransigence came in 1916 with the creation of the House Committee on Flood Control. This action was sponsored by congressmen from the lower Mississippi River states, led by the popular and powerful Speaker of the House, James B. "Champ" Clark (D-Missouri). It also received support from the Ohio Valley states, which had been hit hard by floods. Congressmen interested primarily in navigation improvements were suspicious of the effect the new committee would have on the Rivers and Harbors Committee, but there was general agreement that machinery should be established to funnel congressional funds into all areas of the nation that suffered from severe flooding.[6] The debate's timing, in the spring of 1916, was fortuitous for flood control proponents; the Mississippi River and several others were again over their banks. Congressman Thaddeus H. Caraway (D-Arkansas) told the House that he supported the measure because the district he represented "is composed of eleven counties, and a portion of every one of those counties is now under water."[7] The measure passed without a recorded vote, but it appeared to have no significant opposition once its proponents argued that it posed no threat to traditional rivers and harbors projects.[8]

The establishment of this committee is of obvious importance, since it created a permanent forum for congressional flood control proponents. The committee was dominated by congressmen from states with serious flood problems, particularly from the lower Mississippi River Valley. In fact, one of its charter members in 1916 was the new Democratic congressman from Louisiana, Riley J. Wilson, the man who, 19 years later, introduced the bill that became the Flood Control Act of 1936.

The most concrete result of the Progressive Era's flood control movement was the passage of the Flood Control Act of 1917, the most important piece of flood control legislation prior to the 1936 act. While its scope was limited to the lower Mississippi and the Sacramento rivers, the latter river devastated by hydraulic mining in California, it established important precedents and frameworks for the Flood Control Act of 1936. The 1917 act was important in four respects. To begin with, it marked the

first time that Congress appropriated funds openly and primarily for the purpose of flood control. As one congressman said during debate on the bill, the measure "removes the mask" from years of covert federal flood control spending under the "pretext" of navigation improvements.[9] Second, it established a congressional commitment to fund a long-range and (it was believed) comprehensive program of flood control for at least two flood-prone areas -- the lower Mississippi and the Sacramento rivers.[10]

Third, the act introduced the principle of including the requirement for local financial contributions in flood control legislation. This provision, found in Section l(b), was the subject of considerable debate in the House. It was based on the relatively recent precedent of local contributions for certain rivers and harbors projects. In 1905 Republican Representative Theodore Burton of Ohio, the dominant figure on the House Rivers and Harbors Committee, forced the city of Dallas, Texas, to contribute approximately 30 percent of the cost of a river project that clearly had only local value. It was just one more method Burton hit upon in his long struggle to hold down the massive pork barrel expenditures on rivers and harbors projects having no national value and often little local value. Burton was unable to make local contributions a standard requirement, but such contributions were required in a number of the more dubious rivers and harbors appropriations after 1905.[11]

The issue of local contributions never came up with the Mississippi River Commission, because the local levee districts always appropriated more than did the federal government. Congress stated that by 1917 local interests had spent three dollars for every federal dollar spent on the levees. While congressmen appreciated that this kind of financial burden on lower Mississippi residents could hardly continue, neither would they give up the principle of local contributions. Consequently, the 1917 act stipulated that local interests should pay at least one dollar for every two dollars spent by the federal government. The act authorized the expenditure of $45 million from the federal treasury for Mississippi River flood control, not more than $10 million to be spent in any one year. In addition, local interests were to pay the cost of acquiring rights-of-way for construction and maintenance expenses once the levees were completed. This meant that the local levee boards actually paid about half the total cost of the levee program between 1917 and 1928.[12]

Finally, Section 3 of the act authorized the Corps of Engineers to undertake examinations and surveys for flood control improvements, which were to be "a comprehensive study of the watershed or watersheds" and to provide information regarding the relationship of flood control to navigation, water power, and "other uses as may be properly related to or coordinated with the project." As with the old navigation improvement reports, flood control studies were to be submitted to the Board of Engineers for Rivers and Harbors, which was to judge what federal interest might be involved in the proposed improvements; "what share of the expense, if any, should be borne by the United States"; and the advisability of funding the project.[13] The Board of Engineers must have winced at the second item, because Congress itself could not decide on a generally acceptable policy on local contributions or even a clear rationale for including them in the act. Congress now expected the board to succeed where it had failed.

The Flood Control Act of 1917 changed the federal government's activities on the nation's rivers from a single-purpose program (navigation improvement) to a limited dual-purpose program. Senator Newlands' hopes of a genuine multipurpose program supervised by a civilian commission failed to overcome congressional opposition and President Woodrow Wilson's unwillingness to force the issue on Newlands' behalf, although the idea had been endorsed several times in the Republican and Democratic party platforms between 1908 and 1916.[14] Newlands actually succeeded in getting a waterways commission authorized by Congress in the Rivers and Harbors Act of 1917, but he immediately fell to wrangling with the rivers and harbors bloc over its membership. Newlands insisted on a cabinet-level commission while the rivers and harbors bloc desired a lower level commission that would be more responsive to Congress. Both sides appealed to President Wilson in the spring of 1917, but Wilson, preoccupied with the events leading to U.S. involvement in World War I, had no time for such controversies. The commission was never appointed, and Newlands died in 1919. As a result, neither a waterways commission nor a national program of flood control emerged at this time. All the talk of such a nationwide plan at the time of the establishment of the House Flood Control Committee led to nothing beyond the programs for the lower Mississippi and Sacramento rivers. The door had been opened,

but not very wide.

After World War I, when Congress finally returned to water resources issues, the debate over hydroelectric power had become paramount and, in an odd twist of circumstances, had spurred the development of the most detailed and comprehensive flood control studies and plans ever. Congress had given little attention to hydroelectric dams, and the General Dam Acts of 1906 and 1910 had not addressed the complex issues regarding the many new uses to which the rivers were being subjected, particularly in regard to water power and navigation.[15] Having rejected comprehensive waterways development, Congress decided to move forward in the field of hydroelectric power—an area it had come to believe was critically important. It enacted the Water Power Act of 1920, which created the Federal Power Commission, but it still failed to address the issue of coordinating hydroelectric development with navigation and/or flood control. In order to gain a better understanding of the hydroelectric potential of the nation and the ways its development might be coordinated with other water projects -principally navigation, irrigation, and flood control-the House Rivers and Harbors Committee suggested that the federal government examine the cost for a detailed survey of the nation's navigable rivers. The Secretary of War, acting in his capacity as chairman of the Federal Power Commission; was requested to direct the Corps of Engineers to provide Congress with an estimate of the cost of such a survey.[16]

The Corps' response, sent to Congress in April 1926 and subsequently published as House Document 308 of the 69th Congress, stated that the Corps could survey more than 180 rivers and a number of unnamed tributaries for a total of $7.3 million.[17] Congress responded favorably and began to fund the surveys under the Rivers and Harbors Act of 1927. Major General Harry Taylor, the Chief of Engineers, commenting on the inauguration of the survey program, said it "will have a far-reaching influence in controlling and coordinating all works in connection with the diverse beneficial uses which may be made of the streams under federal jurisdiction." The importance of this work, he thought, was "so pronounced" that it should be started as soon as possible.[18] General Taylor was not exaggerating the significance of this piece of legislation. Historian William Leuchtenburg called it "one of the most important acts affecting water

resources in our entire history."[19]

The "308" reports placed the Corps at the center of multipurpose river development even though the work's major emphasis was on hydroelectric power. In the course of preparing the 308 reports, Corps officers worked closely with water resources officials and experts throughout the nation. They came to know the municipal engineers, the drainage district officials, water power company engineers, and university water resources experts-a far wider circle of people than they had ever had reason to work with previously.[20] Moreover, through the study of river basins such as the Tennessee Valley, Corps officials substantially increased their knowledge of flood hydrology.[21] Indeed, the Corps' 308 report on the Tennessee Valley, published in 1930, provided Senator George W. Norris (R&Nebraska) and the proponents of multipurpose reservoirs in the valley with data that helped them push the Muscle Shoals bill through Congress in 1931. The bill was vetoed by President Herbert Hoover because of its federal retention of power distribution, but Norris's ideas were adopted in 1933 by President Franklin D. Roosevelt and the new Congress, which created the Tennessee Valley Authority in May 1933. Over the next decade the TVA developed a system of multipurpose reservoirs very similar to the system laid out in the Corps' Tennessee River 308 report.[22]

By 1935, the Corps' 308 reports represented the most comprehensive and detailed body of data and planning ideas on multipurpose river development to date; the Corps' engineers, both civilian and military, constituted the largest pool of water resources experts in the nation. Certainly, a number of water resources experts outside the federal government continued to question the Corps' judgment and expertise in flood control matters. However, even opponents of the Corps generally did not impugn the Corps' integrity and efficiency. It was the Corps' outstanding reputation, combined with its domination of federal water resources expertise, that overwhelmed the skeptics. Most congressmen came to accept the Corps as the preeminent water resources agency, and it seemed natural to assign to the Army Engineers the responsibility for constructing and operating a nationwide flood control program.

It was fortunate for the Corps that the 308 reports began to appear in 1930, because in 1927 and 1928 its credibility as an engineering organization had been severely challenged in the

Vicksburg, Mississippi, during the 1927 flood.

aftermath of the "greatest disaster of peace times in our history," in the words of Herbert Hoover, then Secretary of Commerce? Hoover was describing the 1927 Mississippi River flood, which at its height covered 26,000 square miles in seven states. More than 700,000 people were driven from their homes. In some areas the collapse of newly constructed higher levees meant that the floodwaters, which had in the past risen slowly, now rushed across the level countryside and 330,000 people had to be rescued from housetops, levee crowns, and trees. Due to massive and heroic rescue efforts, only about 250 people drowned before boats could get to them.

Total direct property losses were estimated at $236 million. Hoover thought that indirect losses amounted to approximately $200 million. The economic effects were devastating for the lower Mississippi, but were also felt from Boston and New York to California. For many weeks no railroad trains crossed the Mississippi south of St. Louis, and more than 3,000 miles of track were under water. The Red Cross flood relief drive raised $17.5 million to aid flood victims, and total relief contributions from private and governmental sources totaled $31.8 million.24

Attacked in Congress and in the public press for single-minded adherence to outmoded ideas, the Corps no longer

Floodwall at Cairo, Illinois, during the 1927 flood.

attempted to defend the "levees only" policy. Everyone from the poorest sharecropper to the richest landowner understood that something more than levees was necessary, although exactly what was much debated in the coming years. Major General Edgar Jadwin, the Chief of Engineers, further alienated public opinion when, in what seemed an arrogant and obstreperous manner, he defended his recommendations for a new Mississippi River flood control project against all critics, including some of the most well-respected engineers in the country. In particular, he attacked the rival plan of the Mississippi River Commission, from which he had in fact borrowed some of his ideas-both plans called for a mixture of spillways, floodways, levees, and channel clearing-but Jadwin's plan substantially decreased the amount of federal dollars to be committed to the project.

Congressman Frank R. Reid (R-Illinois), chairman of the House Flood Control Committee, wanted to prepare legislation for a nationwide flood control program, prompted by both the Mississippi River flood as well as a smaller but still devastating November flood in New England that killed 55 people and caused approximately $40 million in damages, primarily in Vermont.25 The Mississippi problem, he said, would be dealt with first, but he would urge the committee to keep the national problem

"constantly in mind."[26] Even the conservative *Baltimore Sun* agreed with Reid, stating that the New England flood seemed to justify Reid's proposal to expand Mississippi River basin protection to other parts of the country "which lie at the mercy of the same uncurbed natural forces."[27]

For reasons that are not clear, no such bill emerged from the committee. Possibly the gigantic costs of the Mississippi flood control program caused Reid and others to shrink from assuming added burdens. Another possibility is that the complex debate that shortly erupted over engineering, financial, and political questions in regard to Mississippi River flood control may have convinced the Mississippi Valley people who dominated the Flood Control Committee that enlarging the bill to address a nationwide program would be futile and only endanger immediate action on the Mississippi. As it turned out, the congressional representatives from New England who appeared before the committee were staunch states' rights conservatives and, unlike their colleagues from the South, could not bring themselves to ask for federal flood control aid.[28]

The nature of the controversies that raged in Congress and in the national press over the Mississippi River question are beyond the scope of this study except for the issue of local contributions. Suffice to say that most of Jadwin's plan was finally adopted, although with the expectation that parts would be modified as more data were obtained. So far as financing was concerned, President Calvin Coolidge continued to insist throughout the congressional debate that local interests pay a portion of the cost of the new flood control projects to be constructed by the Corps of Engineers, just as they had done since the Flood Control Act of 1917. Nevertheless, it was clear that local levee boards had exhausted their financial resources. Many of them had issued bonds far beyond the total assessed valuation of their districts, and financial experts said any further issues would go unsold. Given this incontrovertible evidence, Coolidge relented. As a conciliatory gesture, however, Congress added the following statement during the final drafting of the bill.

> It is hereby declared the sense of Congress that the principle of local contribution toward the cost of flood control work, which has been incorporated in all previous national legislation on the subject, is sound, as recognizing the special interest of the local population in its own protection, and as a means of preventing inordinate requests for unjustified items of work having no material national interest.

The statement went on to say that an exception to the general principle was being made in the present act in view of the major contributions already made by the local levee districts and that flooding on the Mississippi was a problem "far exceeding those of any other river in the United States."[29]

This compromise satisfied all but a small minority firmly committed to the principle of no federal flood control funds without local contributions, regardless of the economic hardship. The final version of the bill sailed through Congress with large bipartisan margins and was signed by Coolidge on 15 May 1928. In the presidential election in November, both the Republicans and Democrats claimed the legislation as their own, but neither party endorsed any wider program of flood control.[30]

With the exception of the laws authorizing certain multipurpose dams in the West, such as Boulder Dam and Bonneville, the Flood Control Act of 1928 was the last major piece of flood control legislation passed by Congress prior to the 1936 Flood Control Act. Its significance is difficult to assess, but three aspects of it are worth noting. First, the long debate over the bill and the various flood control plans considered during the course of debate greatly increased public (and congressional) awareness of the major advances in flood control theory and practice since 1916 and 1917. Also, radio broadcasts and news films showing the destructiveness of floodwaters had an impact on the public that newspaper accounts could not equal.[31] Second, the 1928 act put flood control on a par with other major projects of its time. The act authorized an expenditure of $325 million, the largest public works project appropriation ever authorized by the federal government, even exceeding the construction cost of the Panama Canal, which was $310 million. Finally, the act raised the debate on local contributions to a new level. The issue became one of the central questions surrounding the Flood Control Act of 1936.

President Coolidge, General Jadwin, and key Republicans in Congress were the major architects of the Flood Control Act of 1928, but it fell to Herbert Hoover to undertake its implementation from 1929 to 1933. Hoover, of course, had barely entered upon his duties as President in 1929 when the stock market crashed and the national economy began the long slide into the greatest depression in the country's history. Although Hoover was far more interested in flood control and multipurpose development than any President had been since Theodore Roosevelt,

the nation's economic woes confined him to a small, but nonetheless significant, role in the development of federalflood control activities. He can be credited withadvancing the cause of flood control in the United States in three major ways.

First, Hoover helped initiate some important water resources projects. He worked with political leaders in California to start the Central Valley project, which involved constructing a series of high dams on the Sacramento, Kings, San Joaquin, and American rivers. Of even greater portent, he issued orders in 1930 for the Corps of Engineers to begin detailed engineering studies for the construction of the Cove Creek (later named Norris) dam in the Tennessee Valley as a flood control and hydroelectric power project-the first major reservoir project to be undertaken by the federal government outside of the Bureau of Reclamation dams in the West. If Hoover had been reelected in 1932, he may well have had most of the work undertaken that was eventually done by the TVA. His efforts to construct the Cove Creek dam were blocked by Senator Norris and his allies, who wanted the electric power from the Tennessee Valley dams kept in federal hands rather than being turned over to private companies as Hoover wished, but both men agreed on the flood control aspect of the project and endorsed it as a legitimate federal activity.

Second, Hoover pushed the flood control work on the Mississippi ahead as an unemployment relief measure — uniting work relief with flood control in a manner that the New Deal was to continue doing throughout the 1930s and that became one of the rationales for the 1936 Flood Control Act. Third, through the new Chief of Engineers, Major General Lytle Brown, he directed that the boundaries of the Corps of Engineers' Districts be redrawn to approximate better the major river basin areas of the nation.[32] This can be looked upon as a key administrative change to move the Corps into position to administer multipurpose projects more efficiently. Thus, in the area of flood control, as in a number of other areas, the Hoover administration provided a bridge between the Harding-Coolidge era and the New Deal.

CHAPTER III

The New Deal and Flood Control 1933-1934

A national program of flood control finally emerged during the course of the New Deal. It was part of the profusion of important Depression Era legislation enacted by the 74th Congress in 1935-1936, including. the Social Security Act, the National Labor Relations Act, the Banking Act of 1935, the Wealth Tax Act, the Public Utilities Holding Company Act, the Rural Electrification Act, the Soil Conservation Service Act, and the $4.8 billion Emergency Relief Appropriation Act of **1935.** Out of this last act, designed to create public work relief programs, came the Works Progress Administration (WPA) programs, the National Youth Administration, the Resettlement Administration and, ultimately, the Flood Control Act of 1936.

The flood control act reflected the general tendency of New Deal legislation to amalgamate the concerns of a variety of groups and public constituencies. The final version of the act embodied ideas from at least six different political entities within the federal government which, in turn, represented the larger interests outside the government. These internal forces were the House Committee on Flood Control, the Senate Commerce Committee, the Army Corps of Engineers, the Department of Agriculture, the White House (the President and his chief advisors), and, through the White House, the National Resources Committee. Each of these groups approached the issue differently, and within each group there was disagreement, often minor but sometimes substantial. During 1935, when legislation on the subject first appeared, discord was the rule rather than the exception. No aspect of the question evoked general consensus.

By the spring of 1936, flood control proponents had achieved considerable progress. Primarily as a consequence of the unprecedented floods of that spring, nearly unanimous agreement had been reached in Congress that major floods were indeed a great national menace, that the solution rested with


President Franklin Delano Roosevelt.

some form of nationwide flood control administered by an agency of the federal government, and that it should be financed in some measure by federal funds. This left five specific areas of disagreement: the degree to which the flood control effort should be linked to a larger multipurpose river basin development program; the agency that should administer the program; the proper division of costs between the federal government and the state and local interests; the advisability of combining watershed soil conservation programs with the more traditional structural approaches to flood control, such as levees or, increasingly common, reservoirs; and the specific potential flood control projects that should be recommended for construction.

The attitudes and opinions of President Roosevelt are central to any understanding of the New Deal, and this applies specifically to the evolution of the Flood Control Act of 1936. Even though congressional flood control advocates, rather than the White House, initiated this act, Roosevelt's position on this legislation, although not particularly well understood, generally influenced the tactics of both promoters and detractors of the bill, and FDR's direct influence was important during the final stages of drafting and lobbying in 1936. Those who have written about flood control during the New Deal era have linked the act directly to Roosevelt's conservation program. While this is not entirely correct, no doubt the President, as well as most conservationists, thought of flood control as part of natural resources conservation. Roosevelt was not, as some have thought, a strong advocate of a "planned society," but natural resources conservation, including the multipurpose development of river basins, was one area where he did advocate centralized federal planning.[1] Roosevelt was devoted to the idea of a federal natural resources

planning agency to coordinate all aspects of conservation and resource development. This idea, embodied in the National Resources Committee, nearly derailed the flood control bill in the spring of 1936 because the bill made almost no attempt to coordinate flood control with other aspects of water and land conservation, including multipurpose development.

Roosevelt's attitudes and opinions about flood control, river development, and conservation are difficult to explain. They reflect both pragmatic and romantic qualities. Foremost in FDR's mind was the land itself-the nation's greatest single resource. Soil conservation, reforestation, irrigation, scientific agriculture, and parks were all subjects close to the President's heart and almost continually on his mind. Rural America-its farms, forests, and small towns and its vast, rolling landscapes -had a grip on his imagination that almost no other subject held.[2] His private letters, public speeches, and press conferences all testify to this enduring love affair.

Still, there were purely political calculations to be considered in regard to the 1936 flood control bill. The bill came up for his consideration just as the 1936 presidential campaign opened. This was the first major test of the New Deal, and FDR still felt little assurance that a great electoral victory was at hand. He was clearly unhappy with the flood control bill and was urged by his National Resources Committee to kill it. On the other hand, many important areas of the nation had just suffered severely from disastrous floods in 1935-1936 and there was some intense political pressure on the White House to take action. Thus, the President's views in this matter were motivated by his personal attitudes and preferences toward natural resources development, his response to a national disaster, and the realities of politics in an election year.

Oddly, the "Squire of Hyde Park" did not appear to have quite the same deep feeling about rivers and water resources that he had for the fields and forests. He enjoyed gazing at the Hudson from his estate and was fairly well informed on the subject of waterways development and flood control, but these areas never sparked his interest as did the subject of agriculture or, to be sure, forests.[3] He strongly believed that reforestation could significantly reduce flooding.[4] Roosevelt's attitude partially explains his curiously passive role in the legislative history of the Flood Control Act of 1936. It may also explain why developing a

national flood control policy appears to have ranked below a large number of other natural resource efforts, such as reforestation, on the White House priority list.[5] In 1935 and 1936 Roosevelt was asked about flood control at several press conferences, and his responses indicate that while he had a general idea of how his own National Resources Committee was proceeding in this area, he had not considered the question in detail. He appeared to have even less knowledge of how Congress was proceeding with its own bill until May 1936, when it was almost on his desk.[6]

However, the low priority given flood control in the White House did not mean that the President was necessarily indifferent or opposed to a national flood control program. From his earliest days in politics, Roosevelt had supported flood control as part of a larger program of multipurpose river development. In a 1914 letter, he told a Louisiana engineer that the Mississippi flood problem could probably be solved by more levees, a large number of reservoirs (which could be paid for by selling electric power from them), and, of course, by an ambitious reforestation program.[7] Following the Mississippi flood of 1927, Roosevelt was among those whoimmediately pushed for a special session of Congress to draft flood control legislation, and he questioned senators in the affected states as to what needed to be done.[8] While campaigning for the presidency in 1932, Roosevelt stated that he would support a major expansion of Hoover's reservoir construction program, and he made a specific commitment to build a basin-wide system of dams for the Tennessee Valley for power and flood control.[9]

Upon taking office, Roosevelt appeared to move rapidly in the area of flood prevention. As promised, the Tennessee Valley Authority (TVA) was created. The President's unemployment relief program of 1933, which led to the creation of the Civilian Conservation Corps and the other work relief programs, included projects aimed at flood control. Title II of the National Industrial Recovery Act of 1933 also authorized public funding of flood control projects.[10]

Unfortunately, the TVA work, the Title II Public Works Administration (PWA) dams, and the continuing series of Bureau of Reclamation projects in the West (which had some flood control value) did not add up to anything like a significant flood control program nor were the projects well coordinated with other river basin activities. Much of the flood control money

actually went to reforestation and erosion control activities, which were only indirectly useful for flood control, or for work on the Mississippi and on just a few other rivers.[11] Under Title II of the National Industrial Recovery Act of 1933, large construction programs on the nation's waterways, highways, rural areas, and cities were to be coordinated by the Interior Department's Public Works Administration. When the problems of project coordination became more apparent, the responsibility was given to a national planning board, which Interior Secretary Harold L. Ickes created on 30 July 1933 with Frederic A. Delano, the distinguished planner (and the President's uncle), as chairman. Within this agency, water resources projects were the responsibility of a group called the Mississippi Valley Committee under the direction of Morris L. Cooke, an engineer from Philadelphia. Rather than simply coordinating PWA river project planning, this committee also undertook a very broad study of the entire Mississippi basin. The National Planning Board eventually became the National Resources Committee (NRC), and that committee proposed a detailed, nationwide multipurpose river basin program, including a large flood control component that was embraced by the President. Unfortunately for the NRC, however, its proposal did not appear until six months after passage of the Flood Control Act of 1936.[12]

Frederic A. Delano, Chairman, National Resources Planning Board, 1933-1943.

Congress showed little interest in a coordinated multipurpose water resources program. The rivers and harbors bloc remained suspicious of any tampering with its historic ties to the Corps of Engineers. Flood control advocates, enthusiastic about projects promising both flood protection and unemployment relief, showed little concern over how those projects related to other aspects of waterway development. Until the great floods of 1935 and 1936 galvanized almost the entire Congress behind

Riley J. Wilson, Representative from Louisiana, 1915-1937.

flood control, the chief flood control proponents were from the lower Mississippi and Ohio river valleys, although there were many supporters, mainly Democrats, from other flood-threatened sections of the nation. These congressmen had hoped to see a large program of reservoir and levee construction initiated in the early days of the New Deal and were frustrated by the slow pace of the emergency relief program in this field.[13] The center of congressional interest was the House Committee on Flood Control and its new chairman, Representative Riley J. Wilson.

Wilson has received almost no credit for his role as the original author of the Flood Control Act of 1936. He was born in Winn Parish, Louisiana, which is located in the northern part of the state between the Mississippi and Red river valleys, an area that today is liberally dotted with flood control reservoirs, none of which bear his name. After both of his parents died, he struggled to get an education and to build a career. With a law degree, he was elected to the state House of Representatives and later appointed a judge in Louisiana's 8th Judicial District. In 1914, at the age of 43, he was elected to the U.S. Congress. He entered the 64th Congress in 1915 and began his rise to power on the Flood Control Committee soon after its establishment in 1916. Flood control became the great issue upon which he staked his political career and to which he devoted almost all his efforts. He was a dedicated lobbyist for federal flood control for Louisiana; however, he gradually became determined to extend the generous federal expenditures, such as those Louisiana received, to all areas of the nation that suffered from flood disasters.

By 1933 Wilson was a congressional expert on flood control and one of the few members of Congress to have participated in nearly all the flood control hearings and debates since the

establishment of the Flood Control Committee in 1916 and the passage of the nation's first flood control act in 1917. In 1933 he advanced to the chairmanship of the Flood Control Committee, which should have made him a major power in his home state. However, his opposition to Huey Long, to whom he had lost the governor's race in 1928, made him vulnerable politically. His sponsorship of the Flood Control Act of 1936 was the crowning achievement of his congressional career. Ironically, it was his last achievement, for Wilson was defeated by the Long machine in the 1936 Louisiana Democratic primary and was forced to retire from politics.[14]

Wilson lost no time in doing his duty as chairman of the Committee on Flood Control after Roosevelt took office. In the midst of the "hundred days" when the New Deal public works program was moving rapidly through Congress, Wilson urged the new President to make flood control an important part of the administration's unemployment relief program. Louis Howe, FDR's assistant, cautiously replied, "There is no doubt that flood control will be included, but it is impossible to say at this time just what projects will be considered." Howe urged Wilson to "keep in touch with the program as it develops, so we may have the benefit of your suggestions."[15] Wilson was not alone in seeking public works funds for flood control. Increasing numbers of congressmen requested projects. Others espoused projects of even larger scope. Bills were being prepared to create authorities similar to the TVA to build whole systems of multipurpose reservoirs in other river basins. By the end of 1933, bills had been introduced for TVA-style projects on eight river basins.16

The author of one of these bills (for the Missouri basin) was Senator George W. Norris. The senator was a key figure in prodding the Roosevelt administration to support flood control and comprehensive river basin development. He was also the chief congressional link between the New Deal's water resources program and Francis Newlands' river development proposals of the Wilson era. Norris first grasped the possibilities of multipurpose river development during the debates over the Mississippi flood problem and the more general discussion of the old Inland Waterways Commission. Back in 1916 Norris had suggested that the Mississippi's floodwaters be contained by building dams on the tributaries, with costs shared by the farmers on the tributaries, who gained irrigation water, and those

Harold L. Ickes, Secretary of the Interior, 1933-1946.

on the lower Mississippi, who received flood protection. The theme of multipurpose development was refined by Norris during his long fight in the 1920s to develop the Tennessee Valley.[17] In 1932 Norris left the Republican party to campaign for Roosevelt. The two became good friends and political allies throughout the New Deal, and Norris often served as an administration spokesman in Congress. In January 1933, a short time before his inauguration, Roosevelt announced his support for Norris's Tennessee Valley program. The TVA bill was signed into law on 18 May 1933.[18]

With the establishment of the TVA assured, Norris turned his attention to the larger question of the Mississippi and Missouri valleys. By the time the second session of the 73d Congress opened in January 1934, he had developed an outline of a huge multipurpose river basin plan for the Missouri River Valley, which he introduced into Congress on 4 January.[19] The day before, he sent a long letter to President Roosevelt, with a copy to Secretary Ickes, suggesting that some funds be allocated for "making a survey and study of the possibility of improvement of some of our interior streams" such as the Missouri, Arkansas, and other major rivers in the Mississippi Valley. The survey would examine particularly "the relationship between irrigation, flood control, navigation, power development, reclamation of marginal lands, [and] the reforestation of these lands." He said that much money had been wasted on piecemeal projects that failed to account for the interrelationship of these elements. He also thought the study should determine the manner in which federal and local costs should be divided and the proper apportionment of local costs, according to which population groups received the various benefits of reservoir projects.[20] He offered

this idea as a means to use more efficiently the emergency relief funds that had already been authorized and to avoid duplication of surveys, although he admitted he did not know how much survey work had been done. He made no mention of the Corps' 308 reports.

Ickes and Roosevelt were aware of the problems alluded to by Norris. FDR replied (in a letter probably drafted by Ickes) that a Mississippi Valley Committee (MVC) had recently been created "for the purpose of studying and correlating projects involving flood control, navigation, irrigation, power, reforestation and soil erosion in the Mississippi drainage area." Through the work of the MVC, he concluded, "much will be done to correlate the various independent studies that have hertofore been made."[21] Roosevelt's letter to Norris did not address the question of the increasing number of river basin authority bills being drafted in Congress. On 26 December FDR asked Senator Clarence C. Dill (D-Washington) to talk with Norris and others interested in this river legislation. Dill replied that "we are likely to find ourselves overloaded with bills for the creation of these [river basin] authorities and Congress is likely to drop all of them" unless they could somehow be consolidated into a single piece of legislation.[22]

In spite of the MVC's preliminary work, 1933 ended without any administration policy on flood control, any river basin development, or any clear direction in Congress. Roosevelt limited his mention of flood control in his annual message to Congress on 3 January 1934 to simply hinting that the creation of more projects like TVA was at least being considered.[23] At a press conference held later that day, the President talked about his river basin ideas, but gave few specifics. He said he hoped to get a "complete national picture" of the problems in the river basins of the country and to develop comprehensive plans to solve them. He thought that plans for nearly every major river basin could be fairly well developed by mid-1936. Then the federal government could begin "rebuilding the face of the country ... at a rather definite yearly rate."[24] Exactly how, he did not say.

Apparently, the President and Norris were thinking along the same lines, but the matter went no further than that. On 9 January 1934, Roosevelt asked Dill, Norris, and several other interested congressmen to discuss among themselves the river basin question, then come to the White House "and talk over the

possibility of one piece of legislation to cover the whole thing."[25] The White House meeting was held on 31 January. There is no record of who actually attended, but, in addition to Norris, invitations went to Senators Hubert Stephans (D-Mississippi) and Alva Adams (D-Colorado) of the Senate Commerce Committee and to Senator Hiram Johnson (D-California). Congressmen included Riley Wilson, as chairman of the Flood Control Committee; Joseph J. Mansfield (D-Texas), chairman of the Rivers and Harbors Committee; William Driver (D-Arkansas); E.W. Marland (D-Oklahoma); Conrad Wallgren (D-Washington); Will Whittington (D-Mississippi); and several others -almost all from the South and West. The topic of the meeting was listed as "the discussion of flood control, irrigation, reclamation and waterways."[26] Following this meeting, FDR told reporters that it was just a preliminary discussion of flood control and river basin development.

> We talked about flood control from the point of view of national planning with the general thought that we would try to work out a national plan in the larger aspect that would list the various rivers and flood control projects in the order of their necessity; that is, on the order of damage done, human beings affected, property affected, et cetera. But that is as far as we got, discussing national planning for flood control and all the things that go with it, power, reclamation, submarginal lands and everything else.[27]

Two days after this meeting, Senator Norris introduced a resolution before the Senate requesting the President to submit a report on "a comprehensive plan for the improvement and development of the rivers of the United States, with a view of giving the Congress information for the guidance of legislation which will provide for the maximum amount of flood control, navigation, irrigation, and development of hydroelectric power." Congressman Riley Wilson introduced the same resolution in the House.[28]

To draft this report, the President appointed a Committee on Water Flow composed of the Secretaries of Interior, War, Agriculture, and Labor. The actual study was done by six subcommittees, organized on a regional basis, with members from the Interior, Agriculture, and War Departments represented on each subcommittee. The War Department's representatives were all Corps officers, who served as subcommittee chairmen. The subcommittees began work on 20 February and submitted their reports on 27 March. The Committee on Water Flow sent its

report to the President on 17 April, and FDR presented it to Congress on 4 June 1934. The President asked the committee to report in the manner directed by Congress but supplemented the resolution by asking that the committee include in its report recommendations for the development of ten specific river basins.[29]

This report had five important aspects. First, the committee agreed that comprehensive, long-range basin planning had considerable advantages over less coordinated levels of effort. Second, information required for proper planning was still scattered and often inadequate. Third, any plan would require agreement on cost sharing between federal, state, and local governments. Fourth, agreement was needed on criteria for choosing and setting priorities for projects. Finally, there would have to be a rational division of responsibility among the federal agencies involved in river basin affairs.[30]

The committee selected ten river basins for more detailed analysis. It did so, however, with major disclaimers regarding lack of information and the preliminary and tentative nature of the whole selection process.[31] The first five basins were reasonable enough choices. They were the Tennessee, St. Lawrence-Great Lakes, main stem Mississippi, Missouri-Platte, and Sacramento-San Joaquin basins. The Delaware basin was the sixth choice, largely on the basis of projected use for water supply and power. It outranked both the Colorado and Columbia rivers. The Ohio Valley was ninth (just ahead of the Great Salt Lake basin), and the Susquehanna River basin failed to make it in at all. For those interested primarily in flood control, this was not an encouraging report.

The most significant item in the Water Flow Committee's report, however, was Secretary of War George H. Dern's supplementary letter, which took the entire report to task. First, he said that the attempt to select ten river basins for special study was premature and haphazard and would invite criticism that could be avoided with more study. It gave Congress no direction on how to implement a program and thus "might cause a reversion toward pork barrel and log rolling methods" of authorizing projects. Most important, it "ignores the fact that the data are available right now for the preparation of a comprehensive plan in full compliance with the request of Congress." He referred to the Corps' 308 reports, which had been in process for

the past seven years and which, at a cost of more than $10 million, were now almost complete for every major river basin in the nation. He noted that the Norris-Wilson resolution "is substantially identical" to the 1927 congressional authorization for the 308 survey program. While the 308 reports were restricted to navigation, power, flood control, and irrigation, studies of "stream pollution, soil erosion, reforestation, recreation, and sociological plans .. can be superimposed upon the data already submitted without conflict." The implementation of programs in these areas, Dern maintained, could be done best by existing federal, state, or local agencies. He added that the overall planning had already been accomplished by the Corps of Engineers, which had "a familiarity with water-use problems that could not be acquired by any new group without years of intensive and continuous study."

Dern thought the existing 308 reports, collectively considered, were "sufficient in scope and form... as a comprehensive plan responsive to Senate Resolution 164." Congress could authorize these plans, designate an agency to determine construction priorities, and have them constructed by the Corps (except for irrigation projects, which would stay with the Department of the Interior). Funding for some local-federal cost-sharing plan similar to federally funded highways "would eliminate pork barrel legislation" and "keep river and harbor work out of politics." Placing all this in the War Department, he concluded, would "make it possible to work according to a carefully developed plan and would keep the work in the hands of a closely knit, efficient, and continuing agency of the government, namely the Corps of Engineers of the Army."[32] Dern's view eventually carried the day in the Flood Control Act of 1936.[33] Ickes must have been upset with the Secretary of War, but there is no record of any official reply to Dern's challenge.

Insofar as the Ickes-Dern dispute was over jurisdiction as much as philosophy, it had its counterpart in the clash between the Rivers and Harbors and Flood Control Committees of the House of Representatives. Congressman Wilson appears to have ignited the clash with a major speech to the House on 13 April 1934. He stated that the President's annual message in January, the Norris-Wilson resolutions, the work of the Committee on Water Flow and the Mississippi Valley Committee, and the numerous flood control bills pending before his Flood Control

Committee all clearly signaled "a Nation-wide call... for well planned and definite action for the protection of life and property and for the conservation and use of our natural resources." Fortunately, he continued, the Corps of Engineers' 308 surveys provided almost all the data needed to carry out a national program of flood control. The Corps could supply Congress with any additional information so that work could begin as soon as Congress gave its approval. He thought that the final selection of flood control projects should be left to the Committee on Flood Control just as navigation projects were left to the Rivers and Harbors Committee. This procedure was provided for in Section 3 of the Flood Control Act of 1917. He assured the House that there was "no conflict between the work of the Committee on Flood Control and the Rivers and Harbors Committee."[34]

Chairman Joseph Mansfield of the Rivers and Harbors Committee vigorously disagreed. He and others on his committee were already frustrated by the fact that there had been no rivers and harbors bill for the past four years. FDR, he said, was still opposed to any rivers and harbors legislation because of the cost and because the President also contemplated "a new program to be applied to inland waters."[35] Equally aggravating was the expenditure of millions of dollars by the PWA without the approval of the Rivers and Harbors Committee, a situation characterized by Congressman James W. Mott (R-Oregon) as "a complete surrender ... [to] the discretionary jurisdiction of the Secretary of the Interior."[36] Mansfield and several others criticized the Norris-Wilson resolution, claiming they had no knowledge of it before it was rushed through in February. It was, Mansfield said, a usurpation of power by the Flood Control Committee. When the Committee on Water Flow report comes in, he added, it should go to the Rivers and Harbors Committee rather than to the Flood Control Committee. Illinois Democratic Congressman Claude V. Parsons concluded that the entire report was redundant because the Corps' 308 reports provided all the information needed for a comprehensive waterways program.[37]

On 11 May, Mansfield rose again in the House to attack the Flood Control Committee. He reminded the House that, contrary to popular impressions, the Corps' 308 reports, which were authorized under the Rivers and Harbors Act of 1927, came out of his committee, not the Flood Control Committee. It was the Corps and his committee that had, since the establishment of the

Board of Engineers for Rivers and Harbors in 1902, ended the pork barrel abuses of the previous century.[38] Mansfield, along with Congressman P. James Buchanan (D-Texas), anticipated that both the Rivers and Harbors Committee and the Corps' Board of Engineers for Rivers and Harbors were to be removed from most future river improvement work. This fear prompted a strong outpouring of support for both the committee and the Corps. Martin Dies, also a Texas Democrat, said that such an action was "inconceivable," and any attempt to relieve the Rivers and Harbors Committee of its jurisdiction was "going to prove unsuccessful." But he was reminded by Congressman Mott that under the current emergency relief and public works programs, extensive river improvement projects were being carried out by the PWA without the approval of either the Rivers and Harbors Committee or the Corps of Engineers.[39]

Throughout the acrimonious debate in the House, President Roosevelt's statements on water resources development were mentioned only once, by Mansfield, but it seems certain that they caused much of the anxiety expressed by Mansfield and his allies. Probably most disturbing to them were the President's extended remarks to the press on 14 February 1934. When asked by reporters about the Committee on Water Flow, Roosevelt replied that year after year the rivers and harbors bills included projects funded for those congressmen "who could talk the loudest." He hoped to end this situation by issuing a report on waterways and drainage basins that would lead to the establishment of "a permanent planning commission," which would be "non-political, non-partisan" and could plan for 25 or 50 years into the future.[40] Each year, as the President envisioned it,

> the National Government would plan to spend some more or less regular sum which, in a sense, would take the place of the public works money and would be used primarily to relieve unemployment which we will always have with us in one form or another. . . . Of course it would include a great many factors. It would include flood-control, soil erosion, the question of sub-marginal land, reforestation, agriculture and the use of crops, decentralization of industry and, finally, transportation . . . and water power.[41]

When asked where this plan would leave the Board of Engineers for Rivers and Harbors and the House Committee on Rivers and Harbors, the President replied, "Now you are talking about mechanics. I don't know how it would work out. Essentially the Committee is getting all the information from the Board of

Engineers of the Army." Dismissing further questions on specifics, Roosevelt said his plan would convert waterways expenditures into "an orderly process" resulting in "the elimination of the old methods of the rivers and harbors bills."[42] He thought some different arrangement, centered in the Public Works Administration of the Department of the Interior, would do a superior job.[43] Clearly Roosevelt was talking about the establishment of what became, in June 1934, the National Resources Committee. In this amorphous stage, however, the idea must have seemed much more of a threat to established congressional interests than an opportunity from which those interested in waterways improvements could benefit.

The entire squabble between the Rivers and Harbors and Flood Control Committees focused on which congressional committee should oversee the development of the nation's water resources. In this context, the sharp reaction of Mansfield and his supporters becomes understandable. Under the emergency relief program of 1933, rivers and harbors projects were being carried out by the executive branch without the approval of the Rivers and Harbors Committee. Now the Flood Control Committee was seeking a larger role, and the President seemed clearly to be contemplating removal of all river basin development planning to an executive agency or commission. It is possible that Mansfield thought Wilson and his Flood Control Committee were making a veiled bid to become the major multipurpose river development committee – possibly having come to an understanding with the President on this issue. While an interesting speculation, it seems quite unlikely. There is no evidence of any agreement or even much communication between Roosevelt and Wilson at this time or at any time prior to the passage of the Flood Control Act of 1936. One memorandum in the White House flood control files dated 16 February 1934 states that Speaker of the House Henry Rainey informed FDR about the committee rivalry and suggested that the President ask that a new special committee on rivers be created. Roosevelt replied that he was reluctant to get involved in the controversy, but might suggest such a committee when he finally was prepared to give Congress a special message on flood control.[44]

Indeed, Roosevelt did not appear to be very concerned about the whole issue. There were far more important and pressing issues facing the administration at this time. For unknown reasons, he did hold onto the Committee on Water Flow report

for almost seven weeks after receiving it. The "Rainey Memo" of 16 February 1934 indicates that Roosevelt expected to be able to go to Congress with the committee report and to recommend a flood control or multipurpose river program, but this did not happen. When he finally did send the report to Congress on 4 June, his letter of transmittal said nothing about creating a special committee such as Speaker Rainey had suggested. Instead, it stressed the preliminary nature of the findings and asked that the study be developed further so that he could outline a comprehensive plan to the next Congress.[45] Roosevelt reiterated his strategy in a more general address to the Congress on 8 June 1934, in which he stated that he hoped to have ready for the next Congress "a carefully considered national plan, covering the development and human use of our natural resources of land and water over a long period of years."[46] The Water Flow Committee report solved nothing, but it did reveal the deep divisions between the Departments of War and Interior and the parallel cleavage between the Rivers and Harbors and Flood Control Committees. In the Senate, the report went to the Committee on Commerce, but the House dispute prevented the report from being assigned to any committee.[47] It was not a good beginning for the President's water resources development program.

For Riley Wilson and other congressmen from districts where flood control was a major issue, the delay in the administration's flood control program was disappointing—especially in view of the fact that the congressional elections of 1934 were looming ahead. A few days after the President had sent his land and water resources message to Congress, Wilson went to the White House to see if Roosevelt had a more concrete plan for flood control. Apparently, he spoke with one of Roosevelt's aides and was told that there was a program developing similar to that suggested by the Water Flow Committee report (or possibly by the Mississippi Valley Committee). While there would be nothing ready for congressional action for this session, congressmen "will be in a position, particularly those who need it, to go before the people and say 'Here is what we propose to do.'"[48]

CHAPTER IV

The Floods of 1935 and H.R. 8455 Congress Takes the Initiative

During the remainder of 1934, Roosevelt moved ahead with his plans for a water and land planning commission. On 30 June 1934 he created by Executive Order 6777 the National Resources Board (NRB), which replaced the temporary National Planning Board. A year later the name was changed again to the National Resources Committee-the name it retained until 1939. The Mississippi Valley Committee became the Water Planning Committee of the NRC, but soon changed its name to the Water Resources Committee (WRC). In the order creating the new "permanent" agency, the President asked that it prepare for him by 1 December 1934 a comprehensive plan for developing the nation's land and water resources.[1]

Both the Mississippi Valley Committee and its successor, the NRC Water Planning Committee, were chaired by Morris L. Cooke, a wealthy engineer who had dedicated much of his life to progressive reform movements -particularly the effort to make low-cost electricity available to urban and rural Americans. He had fought the private utility companies in Pennsylvania and aided Governor Franklin D. Roosevelt in his struggle with the utilities in New York in the late 1920s. Cooke came to Washington in 1933 intent on developing a huge program of rural electrification through government-built hydroelectric dams and transmission lines. His interest in, and knowledge of, other aspects of water resources development was clearly secondary to his interest in rural electrification, but in 1935-1936 he took an enthusiastic and somewhat naive interest in watershed control—believing that it offered a better solution to flood control than large flood control dams. Cooke was an able and untiring political lobbyist for his causes, and he had considerable influence with many members of Congress and with President Roosevelt. Since Cooke's fundamental interest in water resources lay in hydroelectric power and rural electrification, the report of the

Morris L. Cooke, Chairman, Mississippi Valley Committee of the Public Works Administration, 1933; Director, Water Resources Section, National Resources Board, and Chairman of the NRB Committee on Water Planning, 1934; Administrator, Rural Electrification Administration, 1935-1937.

Mississippi Valley Committee dealt primarily with this issue rather than flood control. The impact of this report, along with Cooke's intense lobbying, led Ickes and Roosevelt to establish a rural electrification program. The Rural Electrification Administration (REA) was created by an executive order in May 1935, and Cooke left the Water Resources Committee to become its first administrator.[2] The report of the Mississippi Valley Committee did present a great deal of information on the entire Mississippi basin and envisioned a program of multipurpose development, but it contained no specific legislative plan that the President could take to Congress.[3]

A much longer report was prepared by Cooke's committee for inclusion in the National Resources Committee report to be sent to the President on 1 December 1934, as provided in Executive Order 6777. But this committee report also failed to include a specific program for flood control or multipurpose projects that could be turned into legislation. The Water Resources Committee produced a third study that did attempt to develop an integrated program for basin-wide resource projects along with a set of priorities for their execution. This 540-page

report finally was given to the President in December 1936.[4] Although there was a wealth of information that Congress could have worked with in the first two reports -both of which were in its hands by January 1935-the plans and recommendations were based on assumptions that many, and perhaps most, congressmen were unwilling to translate into legislation. The Water Resources Committee assumed that the National Resources Committee would do all the research planning and setting of priorities for water resources projects as part of an integrated nationwide program of natural resources development.

Major General Edward M. Markham, Chief of Engineers, 1933-1937.

This assumption was not shared by Major General Edward M. Markham, Chief of Engineers. At the WRC's first meeting on July 1935, Markham, representing the Corps on the committee, said he thought "the committee could do excellent work in developing long-range policies but that it could do little in connection with emergency expenditures; that the latter work would require continuous service." This continuous service, of course, could only be provided by the Corps since the membership of the WRC, scattered all across the nation, could only come together for periodic meetings. Abel Wolman, the distinguished water resources expert from Johns Hopkins University, was chairman of the WRC and had different ideas. Wolman, states the minutes, "emphasized the difference between prompt action and intelligent action," while Markham "emphasized the necessity for individual authority and confidence where immediate decision is imperative." The Chief of Engineers did say that if the WRC, acting as a consultant on the emergency water programs, objected to a specific project within that program, the Corps "would promptly accept the decision and pass on the the next

project on their list." How much this concession to the WRC planning role meant is difficult to assess, but it is worth noting that Markham never again attended a WRC meeting, choosing instead to send Lieutenant Colonel Glen E. Edgerton as his representative.[5]

The President began his campaign to establish a permanent NRC in a message to Congress delivered 24 January 1935. His specific purpose was to transmit to Congress the water and land report of the NRC along with the earlier report of the Mississippi Valley Committee. More generally, however, he wanted to convince congressmen that the authors of these reports should become a permanent research and planning group for both the legislative and executive branches of the government.

> A permanent National Resources [Committee]... would recommend yearly to the President and the Congress priority of projects in the national plan. This will give to the Congress, as is entirely proper, the final determination in relation to the projects and the appropriations involved.

Roosevelt also announced that a "substantial portion" of the $4 billion he had recently asked from Congress for unemployment relief public works projects "will be used for objectives suggested in this report."[6]

After long debate, Congress appropriated $4.8 billion for public works projects for the unemployed in the Emergency Relief Act of 1935. The appropriation touched off a tremendous struggle in Congress and within the executive agencies for a share of these funds. Secretary Ickes and Harry L. Hopkins, the head of the Works Progress Administration (WPA), fought so hard over the money that Ickes almost resigned from his cabinet post.[7] Congress was ready to spend $4.8 billion, but showed little support for the National Resources Committee. A bill (S. 2825) was introduced by Senator Royal S. Copeland on 15 May to establish the NRC as a permanent federal agency, but it failed to pass. In the House, a similar bill (H.R. 10303) was tabled after a closed discussion in the Ways and Means Committee.[8]

Riley Wilson and other Flood Control Committee members were eager to have a large portion of the $4.8 billion. They turned to the Corps of Engineers rather than to the Water Planning Committee of the NRC. Their preference for the Corps was partially dictated by the fact that no navigation or flood control projects could be undertaken except those adopted by Congress upon recommendation from the Chief of Engineers.[9]

Also, it was very natural to turn to the Corps. Ever since the establishment of the Flood Control Committee, the Corps had been the agency on which it relied for advice and direction -just as the Rivers and Harbors Committee had done for over half a century.

Abel Wolman, Chairman, Water Resources Committee of the National Resources Committee, 1935-1939.

Apparently, no one from the NRC's Water Resources Committee advised the Flood Control Committee. Possibly no advice was solicited. It is just as likely that the Water Resources Committee (or probably Charles E. Merriam of the NRC itself) chose not to get involved with a congressional committee. Merriam had, as one author put it, "a conviction, amounting almost to a phobia, that the board must deal only with the president, that it should avoid the Congress as far as it was possible to do so, and that its staff should likewise avoid Congress as far as possible."[10] Gilbert F. White, who was secretary of the Water Resources Committee during this period, recalled that his committee was not encouraged to participate in congressional activities nor did the chiefs of the NRC attempt any lobbying. Consequently, the NRC "had no significant influence on the Hill beyond what the President could claim for them." Morris Cooke at this time was deeply involved in starting up the REA. His replacement on the Water Resources Committee, Abel Wolman, had none of Cooke's influence in Congress.[11] No member of the Water Resources Committee or the NRC ever appeared to testify before the House Flood Control Committee or the Senate Commerce Committee during the deliberations over the Flood Control Act of 1936, whereas the Corps of Engineers' testimony was extensive.

Wilson and the Flood Control Committee began working to secure flood control funds even before Roosevelt signed the $4.8 billion emergency relief bill into law on April 1935. Three

weeks earlier, on 18 March, Wilson had introduced H.R.6803, entitled "A Bill to Authorize Funds for the Prosecution of Works for Flood Control and Protection Against Flood Disasters." It authorized the expenditure of $600 million from the public works funds to be disbursed "under the direction of the Secretary of War" and "under the supervision of the Chief of Engineers." The funds were to be spent on

> projects for flood control and, in emergencies, for protection against floods on streams and watersheds thereof ... where human life and property are endangered and where such emergency work on plans now completed or in stage of completion will coordinate with a comprehensive plan for the improvement and control of such streams and watersheds thereof, for controlling floods, improvement of navigation purposes, the development of hydroelectric power, protection against erosion of soils, and the preservation and use of natural resources.[12]

Hearings on the bill were held before the Flood Control Committee on 22 and 23 March and 2 April 1934. They were relatively brief and revealed that the $600 million package was determined by selecting projects from the Corps' 308 reports and other surveys and simply lumping them together into a single allotment. The Senate had already passed a resolution suggesting that $350 million of the $4.8 billion be used for "sanitation, prevention of soil erosion, reforestation and forestation, flood control, and miscellaneous projects," but Wilson thought that amount was insufficient.[13]

Wilson asked the Corps to give the Flood Control Committee a list of proposed flood control projects it had surveyed with the estimated costs and benefits of each project. The Corps had in fact prepared such a report. It was entitled, "Projects for the Development of Rivers and Harbors, Summarized From Reports by the Corps of Engineers to Congress." More commonly called the "Green Book," this document listed 1,600 projects, drawn primarily from the 308 reports, for flood control, navigation, irrigation, and hydroelectric power. The total cost was $8 billion.[14] The Flood Control Committee asked to see only the flood control projects, and this is what the Corps presented even though some of the dams, it was stated, had "incidental power features." General Markham later stated that the House committee looked over all the projects, selected those "that looked like the best ratios of cost and benefit, and incorporated it [*sic*] into the bill."[15]

Wilson also may have asked the Corps to place its projects in three priority categories. In any case, this is how they were presented to the Flood Control Committee when the hearings opened on H.R. 6803. Captain Lucius D. Clay told the committee that the Corps had selected 479 projects for examination. The total cost was $604 million. The first of the three categories included top priority projects or those "that are particularly for the preservation of life and have a particularly high economic value." In this category were 200 projects at a cost of $244 million [16] In the second category were projects "that are primarily concerned with property values and which are of somewhat less economic merit than those included in group 1." These projects would cost $81 million. Projects in the third category had even lower economic merit and would cost $277 million. Clay made it clear that the Corps still had some streams under study, and further surveys could change the list. He added that these were also only those flood control projects that could be begun immediately as part of the work relief program, even though detailed plans were still lacking. Workers could start at once to prepare the sites and, as the detailed plans developed, more people could be added-as was then being done by the Corps on the Fort Peck dam project, a very large multipurpose project on the Missouri River.[17] The committee decided not to publish the list of the projects presented by the Corps (after an off-the-record discussion), but Congressman Driver accurately summarized their geographic scope when he said they would "blanket the country."[18]

Two of the Republicans on the committee, Congressman Henry Kimball (Michigan) and Robert Rich (Pennsylvania), were concerned about partisan politics influencing the selection of projects. Congressman Rich asked whether "anyone who is not of the house of the faithful" could get the Corps or the President to recommend a specific project. Congressman Driver thought there would be no political favoritism since General Markham, "a very hard-boiled fellow," would not tolerate such a thing. Moreover, Driver maintained that, of all federal departments, the War Department was the one that did not play politics.[19] Nevertheless, Congressman Kimball was uneasy about the degree of authority the Flood Control Committee would be delegating first to the Chief of Engineers and then to the President. He also wondered aloud whether H.R. 6803 was not an exercise in futility

since it amounted to only a congressional suggestion to the President. He thought it particularly questionable to recommend so many flood control projects that the committee had not reviewed and about which it knew very little. Committee members did not yet even have copies of the report brought in by Captain Clay. Kimball then asked the chairman if he thought the committee would "have time to go over the whole United States?"[20] Optimistically, and perhaps not altogether sincerely, Wilson said he believed this could be done. Of course, the committee never did attempt to study in any detail the 479 flood control projects listed in the Green Book. Committee members questioned Clay on specific projects but made no attempt to understand the entire package. With the exception of Kimball and Rich, they all seemed satisfied to let Markham, Clay, Ickes, and Roosevelt decide what should be done. In practical terms, any attempt to go over each project might have taken a great deal of time, and by then the funds could well have been allocated for other activities. In addition, since the committee could not legally force the President to spend or withhold public works relief funds for any particular project, they might just as well have sent the entire package on to him. This was how Congressman Driver, who seemed to be the committeeman with the most information on the pending public works relief bill, summed up the situation.

Congressman Will Whittington questioned Captain Clay thoroughly about the Corps' attitude toward local contributions. The report that Clay brought to the committee recommended that for federal projects "local interests shall provide rights-of-way, assume responsibility for all damage, and shall agree to accept the completed works for operation and maintenance." Clay explained that these three requirements were included in the Flood Control Act of 1917, and the Corps had recommended the same local contributions in subsequent flood control studies. The policy, he stated, had begun with levee construction but was now expanded to all types of flood control projects except some large reservoirs where the benefits "accrue over an extended area." Later in the hearing, Clay was asked again about local contributions for reservoirs. He reiterated that even large reservoirs would require local contributions if "they provide the same sort of immediate protection to the immediately adjacent area as the levees."[21]

HR 6803 was reported out of the Flood Control Committee on 26 March 1935 with no amendments and very little information [22] It never came up for consideration in the House, probably because Wilson and his colleagues on the Flood Control Committee decided to alter their approach. This change may have resulted from discussions between Wilson and the White House in mid-April. On 15 April Wilson sent to the White House a copy of H.R. 6803 and the accompanying committee report and requested an appointment to discuss them.[23] It is not known with whom Wilson spoke at the White House, but the discussions must have led him to move closer to Congressman Rich's position. On 12 June Wilson introduced H.R. 8455, which listed 285 specific flood control projects to be authorized by Congress at a cost of $370 million. Judging from the total cost and the number of projects, the bill must have been based on the projects presented by Captain Clay to the Flood Control Committee in March but with most of the third category of projects removed.

The bill was a traditional authorization, similar to those the Committee on Rivers and Harbors had advanced for navigation projects since the 19th century. However, the bill was exclusively for flood control. It contained no statement of national policy but simply a brief introduction as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the following works of improvement of rivers, harbors and other waterways for flood control purposes are hereby adopted and authorized, to be prosecuted unless herein otherwise provided under the direction of the Secretary of War and supervision of the Chief of Engineers, in accordance with the plans, in the respective reports and records hereinafter designated, that correspond to the costs given herein for each project: *Provided,* that the authorization for each project shall be the cost given herein for each project.[24]

Section 2 contained the now well-known "ABC" requirements for all projects, stipulating that prior to the beginning of construction, states or local interests must provide assurances to the Secretary of War that they would

(a) provide without cost to the United States all rights in land and other property necessary for the construction of the project; (b) hold and save the United States free from damages in connection with the construction works; (c) maintain and operate all the works after completion in accordance with regulations prescribed by the Secretary of War.

However, the Secretary of War, "upon the recommendation of

the Chief of Engineers," could waive these requirements.[25] The most plausible explanation for this exception is that it would allow the Chief of Engineers to waive the local contributions for projects that had few if any local benefits compared to the benefits for larger areas downstream. However, nothing in the Flood Control Committee report on the bill discussed this question directly.[26]

The committee report did suggest that the projects included in H.R. 8455, while of significant value to the areas where they would be constructed, "will be part of a planned network which will greatly reduce and possibly solve one of the most difficult of all flood control problems, that of the Mississippi River."[27] This was somewhat of an overstatement because many projects were on rivers outside the Mississippi basin. However, most were indeed located within the Mississippi's drainage area, which covers 41 percent of the continental United States. How materially these projects would affect the lower Mississippi was not discussed in the committee report.

The debate over the lower Mississippi had been separated from the general discussion of national flood control since June 1934. At that time Roosevelt told Wilson that when the restudy of the 1928 Lower Mississippi River Plan was completed (as requested by the Flood Control Committee back in January of 1932) he would send Congress "recommendations for such additional authorizations and legislative changes as may be necessary and to provide for a fair and equitable adjustment to the property owners and local interests affected by the execution of such a project."[28] The $604 million flood control package put forward by Captain Clay did not include the $181 million estimated by General Markham to be necessary to complete his revised plan for the lower Mississippi.[29] Clay's $181 million figure may have been in error because the Markham plan, submitted to the Flood Control Committee on 12 February 1935, called for an expenditure of $272 million on the lower Mississippi project.[30] The history of this legislation is not within the scope of this study, but it is important to point out that from his first days in office the President supported new legislation on the lower Mississippi regardless of what happened with national water resources legislation – a position similar to the one he took in regard to the St. Lawrence Seaway project. In his February 1935 remarks regarding the incipient National Resources Committee, Roose-

velt had actually excluded both the lower Mississippi and the St. Lawrence from the planning activities of the new agency.[31] Only when the Markham plan was translated into legislation by Democratic Senator John H. Overton of Louisiana (S. 3531) and reached the Senate floor in 1936 did it become, for a time, linked to the larger program in H.R. 8455.

H.R. 8455 provided for a wide variety of flood control projects distributed across much of the nation. The 285 flood control projects were located in 34 states from Vermont to California. These projects ranged from a $10,000 floodway clearing project in Jackson, Mississippi, to the $22 million Wildcat Shoals Reservoir on the White River in Arkansas. Projects included 48 large reservoirs (despite earlier Corps reservations about the effectiveness of such flood control projects) and more than a dozen smaller dams. The rest were levee or floodwall projects.[32] All the proposed reservoirs contained substantial flood control benefits, but a number of them also contained large benefits from power development, consequently greatly improving their cost/benefit ratio.

The major difference between H.R. 6803 and H.R. 8455 was not in the projects proposed but in the means for getting them started. Unlike H.R. 6803, this new bill was a regular authorization similar to traditional rivers and harbors bills or the flood control legislation of 1917 and 1928. This meant that they could be carried out with funds from the $4.8 billion Emergency Relief Act or, if Ickes and the President failed to use this authority, by congressional appropriation. Roosevelt would thus be unable to stop or alter these projects if Congress was determined to carry them out.

H.R. 8455 was an attempt by the Flood Control Committee to press on with a flood control program before the National Resources Committee and FDR had the opportunity to present their own flood control program as part of a larger plan for multipurpose river basin development. The bill did not, however, represent an explicit rejection of multipurpose or comprehensive river basin development. Instead, it attempted to ensure that whatever general development plans were subsequently adopted for the nation's rivers, Congress would possess the authority to carry out 285 specific flood control projects (unless subsequent legislation officially deauthorized any of them). It should also be noted that the statement in H.R. 6803 that flood control projects

would be coordinated with navigation, water power, and soil erosion was dropped from H.R. 8455.

Eventually the bill came to the attention of Acting Budget Director Daniel W. Bell, who wrote to the President on 20 July 1935 alerting him to possible dangers in the bill. First, he thought that, in view of the National Resources Committee's comprehensive river basin development study that was then in progress, H.R. 8455 was concerned almost exclusively with flood control and appeared premature.[33] Additionally, Bell noted that authorization of so many expensive projects "will undoubtedly lead to a substantial appropriation for the fiscal year 1937" and should be viewed "as not in accord with your financial program." Roosevelt replied quickly, asking Bell to take the matter up with House Speaker John O'Connor and Riley Wilson.[34]

Bell obviously had no success with O'Connor or with Wilson. In fact, a delegation of 44 congressmen called on FDR to urge him to support the bill. No record of this meeting exists, but it is doubtful that Roosevelt gave them any encouragement. The President's attitude remained consistent from 1934 to the end of the New Deal. He could be counted on to support recommendations for comprehensive and multipurpose development of river basins. On the other hand, he never stated that he would definitely veto legislation providing for something less than comprehensive development.

Events on a number of the nation's rivers drew attention to the issue by the spring of 1935. In January, floods in the state of Washington killed four people and caused $1.5 million in damages. Early in March, flooding began on the James River in Virginia and on the Kanawha River in West Virginia and soon after spread to rivers in Tennessee, Alabama, and Mississippi. Heavy flooding also occurred in Wisconsin and Missouri. On 30 and 31 May, 18 to 24 inches of rain fell in the Republican and Kansas river basins, resulting in the loss of 110 lives and $18 million in property. The storm moved into Texas, where Austin, Houston, and a number of smaller towns were hit by floods of terrific force that swept away automobiles, houses, and anything else in their paths. During May and June, 23 rivers in Texas overflowed their banks. From 7 to 9 July, torrential rains fell over a wide area of upstate New York and all of the rivers in the area flooded — smashing homes and businesses and leaving a path of death and destruction along 16 rivers, each of which had large

populations living along them. The Ohio-River experienced the worst flooding since 1913 and did an estimated $6 million in damage. The floods that year took 236 lives and caused almost $130 million in property damage-the great majority of the property losses resulting from the New York State flood.[35]

In New York all ten congressmen from the badly stricken upstate area (including staunch anti-New Dealer John Taber) pleaded for immediate federal aid, as did Governor Herbert Lehman.[36] In July Congressman Wilson, accompanied by members of the Flood Control Committee and New York State officials, toured the New York flood area. The group was deeply moved by the extent of the flood losses. At the small industrial town of Hornell, New York, the damage was, said Wilson, "really the worst condition we have seen yet." Public and private property lost in the town amounted to $3.4 million. At a meeting in Binghamton, New York, Wilson pledged that the investigating committee would seek help from the President on behalf of the flood victims. According to the *New York Times*, the longer term problem of flood control "would be placed wholly in the hands of the army engineers," who were ready to begin an emergency survey of the flood region as soon as the President made funds available. To ensure action toward a permanent solution, leaders from the ten flooded counties in the upstate region announced the formation of a "flood control committee" to work for adequate flood protection. This organization, calling itself the Flood Control Council of Central-Southern New York, was soon affiliated with the National Rivers and Harbors Congress and became an effective and vocal flood control lobby in Washington.[37]

Soon after the Wilson delegation returned to Washington, the President allocated $3.5 million to the Reconstruction Finance Corporation for flood loans to New York, made $200,000 available to the Corps of Engineers for an immediate flood control survey of the region, and provided for a large number of relief workers (as many as 12,000 people) to help rehabilitate the flood-ravaged areas. On 1 August he allotted $1 million for additional workers.[38]

The roaring waters of the nation's river basins brought on another flood – an inundation of flood control bills in Congress. By the time Wilson and the Flood Control Committee were back in Washington, well over 100 flood-related bills had been introduced into the House or Senate.[39] Some were flood relief resolutions, others were flood survey requests, and others proposed

authorizations for specific projects. Coming from almost every region in the union, the bills testified to the fact that a nationwide federal flood control system was the clear will of Congress. Compared to the huge patchwork of flood legislation contained in these hundred-odd flood-related bills, Wilson's H.R. 8455 had the merit of consisting entirely of projects that the Corps of Engineers had investigated and that showed a favorable cost/benefit ratio.

The Flood Control Committee hoped that the Corps' excellent reputation would convince skeptical congressmen that H.R. 8455 was a sound and carefully considered piece of legislation and not a gigantic pork barrel bill. When the bill finally reached the floor of the House on 22 August 1934, one of the longest congressional sessions in the nation's history was drawing to a close. Congressmen, suffering through the sweltering Washington summer, were hot, tired, and eager to get home.[40] Congressman Driver opened the debate by asserting that "every project in this bill has received the attention of the Corps of Engineers of the United States Army, under the direction of the American Congress. . . . No one project in this bill is without that expert recommendation."[41]

The debate consisted mainly of an attack on the bill by members of the Republican minority in the House. Congressman Rich, the ranking Republican on the Flood Control Committee, condemned it as "the biggest 'pork barrel' that has come before Congress since I have been a Member." He claimed that 139 projects listed in the bill had in fact not been officially reported to Congress. Therefore, no conclusions could be drawn about the projects' merits. Finally, he noted that any funding of projects in the bill before fiscal year 1937 would require the authorization of the President, who controlled the emergency relief funds. He said that if Congress intended to fund these projects above the $4.8 billion in relief funds, it would be courting financial disaster—"Where are we going to get the money?"[42]

Defenders of the bill countered with a variety of arguments, including the Corps' project recommendations. Congressman Arthur H. Greenwood (D-Indiana) said that he approved of pork barrel bills such as this when they "carry proper projects... all over the United States where the benefits can accrue not to one particular community, but to the various communities."[43] Congressman Dewey Short (R-Missouri), a vice president of the

National Rivers and Harbors Congress, disagreed with a number of his fellow Republicans, saying that perhaps only those congressmen who had actually seen turbulent rivers sweep away human beings, houses, livestock, and soil could "realize the importance and necessity of this legislation. It is not a local matter, but is national in its scope."[44] Congressman Phil Ferguson (D-Oklahoma) went further, saying that the bill had so much merit that he would be willing to see the projects "paid for by future generations if it is not taken out of the work-relief fund." A motion by New York Congressman Taber to limit H.R. 8455's expenditures to work-relief projects was eventually voted down 88 to 85.[45] Clearly, the major fear of the Republicans (no Democrat spoke directly against the bill) was that the $370 million was just the beginning of much larger expenditures, or, as Congressman Earl C. Michener (Michigan) said, it "is simply the nose of the camel getting in under the tent." Congressman Wilson retorted that Congress could "make no better investment which will protect the lives and property of its citizens." Michener said, "To carry out the policy of the gentleman it would seem to me he was going to canalize practically every stream throughout the United States." Wilson replied, "That is what ought to be done.... It can be done."[46]

Unfortunately, a number of congressmen appeared to take Wilson at his word, for as soon as the bill was read, one after another began to add projects onto it. These projects started with a relatively small $285,000 project in Tennessee and Kentucky, but then increased sharply when a $26 million project for the St. Francis River in Arkansas and Missouri was added. Fearing they would be left out of a unique opportunity, congressmen from flood-prone districts lined up to place their projects with the Clerk of the House. Among them was Will Whittington, one of the most able men on the Flood Control Committee. He submitted his long-cherished Yazoo basin project, with a price tag of $48 million-a figure that prompted John Taber to quip, "I should think while the getting was good the gentleman would get $100,000,000."[47] Other projects were added whose cost/benefit ratios had not yet been determined by the Corps or else had been determined to be unfavorable. Whittington, realizing that such amendments were threatening the bill's chance for passage, began to challenge those projects that had not received favorable Corps reports. Sometimes he was

successful; most times he was not.

Wilson tried to block further amendments, but Taber, hoping to defeat the bill, opposed the move. Finally, John H. Hoeppel (D-California) proposed an amendment "to build a dam around the United States Treasury to protect the taxpayers."[48] When the bill came to a final vote, it passed by the narrow margin of 153 to 141, with 136 not voting. The amendments had caused serious problems for the flood control group. The first test of strength on the bill had resulted in a favorable vote of 239 to 112, with 78 not voting. The bill lost 86 supporters after the amendments were added; 29 switched over to vote against it, and the rest decided not to vote at all.[49]

The House passed H.R. 8455 in the early evening of 22 August, and it arrived the next morning in the Senate, where it was referred to the Senate Commerce Committee under the chairmanship of Royal S. Copeland. The bill moved through the committee in record time, but not before half-a-dozen large flood control projects were added. The first amendment was a $30 million series of flood control works in upstate New York, which Senator Copeland himself added. This would authorize the program then being developed from the Corps' emergency survey of the flood-damaged region. Copeland reportedly added the amendment partly to respond to claims by New York Republicans that the federal government was not providing adequate relief in the flood-stricken areas.[50] Subsequent amendments included the $48 million Yazoo River project, a $30 million Brazos River project, a $27 million Atchafalaya floodway and control project, an allocation of $23 million for two projects on the White River in Missouri and Arkansas, and a few smaller items for $2 million to $4 million. The cost of the amendments was slightly over $129 million, bringing the total allocation for H.R. 8455 to approximately $500 million.[51]

When debate began, the first person to gain the floor was Senator Arthur H. Vandenberg (Michigan), one of the leading Republicans in the Senate, who promptly denounced the bill.

> I think it is an outrage that $500,000,000 should be authorized in 10 minutes tonight, in the closing moments of this session, without any more consideration than has been given to it; and, so far as I am concerned, I wish to have the Senate know what it is doing.
>
> In the first place, it is authorizing the expenditures of one-half billion dollars, which is twice the amount which the Senate is about, piously, to raise

with the new tax bill.

Secondly, the bill violates every precedent ever heretofore established in congressional practice in respect to flood control works and river and harbors works, because it makes the authorization without recommendations from the Board of Rivers and Harbors Engineers.[52]

Millard E. Tydings, Senator from Maryland, 1927-51.

Senator Champ Clark admitted that these projects had not been considered by the Board of Engineers for Rivers and Harbors, but, since public works projects had been taken over by the Public Works Administration, the process for authorizing flood control and navigation projects had, de facto, been changed. Congressional authorization now resulted in adding projects to a pool from which the public works or unemployment relief agencies could draw for actual construction. In this regard, he thought flood control projects, such as those being considered in the bill, were excellent "so far as putting men to work is concerned ... because that means 90 percent labor." Senator Copeland added that the projects in H.R. 8455 were all sound ones because "the surveys have been made. On file in the office of the Chief of Engineers, they have the data."[53]

Debate was interrupted by other business for a time, and when it resumed, Senator Millard E. Tydings (D-Maryland) rose and said,

> Mr. President, there is no doubt in the world that many projects in this bill are meritorious, but before the year 1937, when we begin to pay for these things, there is going to be a different atmosphere prevailing in this Chamber from the one that prevails here tonight. ...
>
> Do Senators think that the people of this country have lost their common sense, that each and every poor man does not know that he has to work to raise the money with which to pay this huge debt? I know there is "pork" in the bill. There is some Maryland "pork," and the project in Maryland is a good one, and I should like to see it go into the bill, and I should like to see the work done. But, gentlemen, we have not the money with which to indulge in this

business at this time. Men may throw money away, but oh, there will be a different story when the time comes to write a tax bill.[54]

Thus began one of the most notable speeches of the Maryland senator's career. On and on it went. Tydings began listing the numerous projects, reading the obscure names of small rivers and noting how many millions were going to each. He paid particular attention to Louisiana, because he and Senator Long had clashed often during the session. "Bayou Bodcau, Louisiana Floodway ... the ridiculous sum of $1,825,000; a mere bagatelle; just a drop in the bucket." After citing projects in several states and costing several hundred million dollars, he turned to his own state of Maryland – specifically the Susquehanna River towns of Havre de Grace and Port Deposit. They too flooded in the springtime, said Tydings. "Did those people ever come to Washington and ask for $385,000? It would have been the last thing they ever thought of doing.... They do not ask other people to help them. They stay and take it. ... They do not run to Washington every time they have a little disaster... They stand on their own feet."[55]

For Tydings, this bill raised issues of broad significance. He admitted at the beginning of his speech that many individual projects in the bill were meritorious, but the fundamental philosophy behind the legislation deeply disturbed him. In fact, so deep ran his opposition to the philosophy that he opposed almost everything the New Deal did and stood for. Federal programs such as flood control protected lives and property, and this had an obvious value. That value, however, was greatly outweighed by the financial and moral damage done to the nation, burdening it with debts and sapping individual and local initiative.

The whole tendency today is not to be self-reliant. If a man gets into trouble he wants a bill passed. People want it paid out of the Public Treasury. Oh, it is all right while it is going out. Then everybody is for it. While the money is being handed out nobody must protest. But wait until pay day comes -and it will come, Senators -and we shall squirm here in our seats, not wanting to vote for this tax and that tax, saying that the poor cannot stand any more taxes.[56]

Coming back finally to H.R. 8455 itself, Tydings said it was outrageous that a bill for half-a-billion dollars – a 53-page bill for authorizing hundreds of projects scattered across the entire nation, with huge amendments that had not yet even been printed so that senators could read them-should be pushed through in two or three hours.[57]

Clearly, Tydings' long speech, a deft mixture of humor, irony, and serious purpose, deeply impressed a number of senators.[58] Senator Josiah W. Bailey (D-North Carolina) of the Commerce Committee confessed that he was going to vote to recommit the bill to his own committee. The Senate, he said, owed it to the country to take the time "to discuss and prepare a proper measure." He agreed that there was a great deal of merit in many of the flood control projects but stated that the Commerce Committee simply had not taken the opportunity to give it adequate consideration.[59]

Copeland vainly attempted to save the bill, but it was too late. Tydings had succeeded in making many senators hesitate before appropriating millions of dollars through Congress in a matter of hours, when almost none of them, not even the committeemen who presented the bill, had closely examined it. It was also too late in a more literal sense; at almost midnight Senator Tydings appeared to be ready to talk the bill to death. A filibuster was not necessary. A motion to recommit the bill to the Commerce Committee came up for a vote and passed 29 to 20.[60] H.R. 8455 was dead so far as the first session of the 74th Congress was concerned.

A disappointed Riley Wilson went back to Louisiana to face a strong challenge from Senator Long's forces in the January 1936 primary. Senator Copeland faced the prospect of fighting once more for flood control legislation when the second session of Congress convened. However, in the next round he knew better what to expect — criticism from Tydings, Vandenberg, and possibly even the President. What the senator could not have guessed was that nature itself would provide him with his best argument.

CHAPTER V

The Floods of 1936 and the Copeland Flood Control Bill

On 9 March 1936, a little more than a week before the Senate Commerce Committee was scheduled to begin its hearings on H.R. 8455, rain began falling across a wide area of the Northeast. The first of several enormous storm systems moved from Maryland and West Virginia across eastern Ohio, Pennsylvania, upstate New York, and into New England. The result is best described in the laconic words of U.S. Geological Survey's Water Supply Paper 799.

> During the period March 9-22, 1936 there occurred in close succession over the northeastern United States ... two extraordinarily heavy rainstorms. The depths of rainfall mark this period as one of the greatest concentrations of precipitation, in respect to time and magnitude of area covered, of which there is record in this country. At the time of the rain there were also accumulations of snow on the ground over much of the region that were large for the season. The comparatively warm temperatures associated with the storms melted the snow and added materially to the quantities of water to be disposed of by drainage into the waterways ... the total quantity that had to be disposed of ... ranged between 10 to 30 inches.[1]

The rivers into which this phenomenal amount of water ran were already high from winter rains. Many were clogged with ice. From Maine to Maryland and west to Ohio hundreds of miles of rivers quickly spilled over their banks. Billions of tons of water poured into farmhouses, villages, towns, and large cities. The Connecticut River crested on 19 March at a level 8.5 feet higher than any flood recorded there since the city's settlement in 1639. New Hampshire suffered flood damage in 87 cities, towns, and villages. In Massachusetts, where scores of large cities and small towns were pounded by water and huge chunks of ice, 56,000 people sought Red Cross aid.[2] The upstate New York region again flooded. While not as serious as the year before, the flooding was more widespread, ranging from Buffalo to Rochester.In the region so badly hit in 1935, residents wondered if floods were

Sebago Lake flooding highway in southwestern Maine, March 1936.
Photo by Paul Carter

Johnstown, Pennsylvania, during the 1936 flood.

Duquesne Way and 9th Street, Pittsburgh, Pennsylvania, 18 March 1936.

Allegheny River at Pittsburgh, Pennsylvania, 18 March 1936, viewed from the thirty-eighth floor of the Gulf Building.

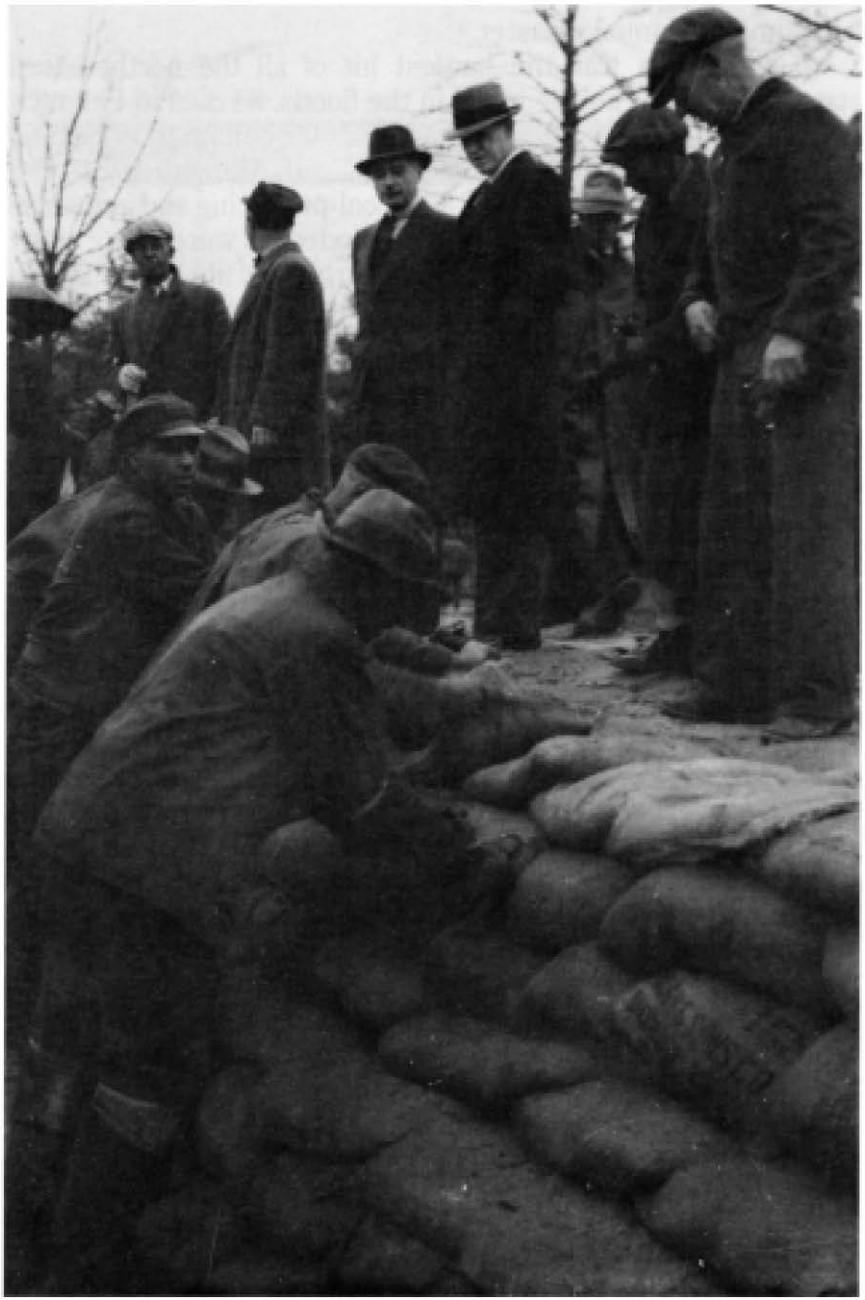
Allegheny River flood wreckage, Pittsburgh, Pennsylvania, 20 March 1936.

Flooded cofferdam at Emsworth Lock, Ohio River below Pittsburgh, 24 March 1936.

becoming an annual disaster.[3]

Pennsylvania was the hardest hit of all the northeastern states. Of the 107 people killed in the floods, 84 died in Pennsylvania. Across the state more than 82,000 buildings (including 38,000 houses) were destroyed or damaged. Altogether, 242,698 people received Red Cross aid. The coal-producing and industrial cities of eastern Pennsylvania were flooded, as were many of the mines. In Allegheny County (Pittsburgh and its suburbs), 46 people died, almost 3,000 buildings were damaged or destroyed, and Pittsburgh's Golden Triangle was for a time under 16 feet of water. On 18 and 19 March, Pittsburgh, one of the nation's great industrial centers, was paralyzed by the lack of water, electricity, or telephone service. Fire burned buildings to the waterline because fire equipment could not get through the flooded streets. The great Pittsburgh flood of 1907 looked modest by comparison. At Johnstown, citizens were terrified by repeated rumors that the large dam just above the city (and recently rebuilt) was about to break and repeat the tragedy of 1889. Many fled to higher ground. The dam held, but the city nevertheless was gradually covered by 12 to 14 feet of water. The Pennsylvania Emergency Council reported that damages in the state totaled $212.5 million.[4]

Even the nation's capital was not spared by the floods. The Potomac rose rapidly on 17 March, and the next day crested at Cumberland at 47.6 feet before moving down toward Washington. Thousands of Civilian Conservation Corps (CCC) personnel worked frantically building sandbag levees around the Lincoln and Washington monuments and the Navy's administration building. At the National Headquarters of the American Red Cross, where the entire flood relief program was being administered, employees began moving files and equipment to upper floors as a precaution. By 19 March, when Senator Copeland opened the hearings on the flood control bill, he noted that "you don't have to go out of the city of Washington" to see the effects of the great floods of March 1936. Two days later, congressmen looked out of the Capitol Building windows and saw the Potomac standing at 19.8 feet above flood stage-with all of the city's beautiful riverfront parks covered by a mantle of dark brown water.[5] The congressmen, as well as the entire population of the northeastern United States, finally saw what residents of the lower Mississippi had talked about for decades-a great flood



Engineer Lieutenant Colonel Francis C. Hawington (above, left center) with the Works Progress Administration, and Harry L. Hopkins (right center), Administrator of the WPA, watching workmen erect an emergency levee in rear of Munitions Building, Washington, DC, March 1936.

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that could cripple an entire section of the nation.

Probably representing the editorial opinion of every newspaper in the Northeast, and perhaps in the nation, the *New York Times* on 22 March published a long editorial entitled "After the Deluge."

> Heavy with moisture from the Gulf of Mexico, storm clouds swept along the Appalachian highlands, hovered over the Virginias and added their torrents to those that had inundated New England the week before ... Villages and towns built on flats were overwhelmed. Old benchmarks were reached and surpassed. ... It is the area affected that appalls. From New England to the Potomac scores of communities stand under water as their inhabitants row in boats past homes submerged to the eaves.
>
> All this is no credit to a country which prides itself on its technical achievement. Here and there sections have been stirred to action. The Mississippi is under better control than it was before the catastrophe of 1927. There are fine works near Dayton, Pueblo, Dallas, Erie. But not yet have we envisaged the problem of curbing and utilizing our water resources as a whole from the Atlantic to the Pacific... . As of yet there are no adequate plans for the prevention of floods and for the associated utilization of excess water... If the floods have taught us anything, it is the need for something more than a dam here and a storage reservoir there. We must think of drainage areas embracing the whole country.6

The great northeastern floods of March 1936 virtually assured the passage of some sort of national flood control legislation during the second session of the 74th Congress. The March floods were remembered long afterward. The Ohio River did not finally return to its channel until 22 April and the next month, as H.R. 8455 was awaiting the President's signature or veto, severe flooding occurred on the Republican and Arkansas rivers, where more than 100 had died in 1935.[7] Even as the Roosevelt administration was directing a force of 275,000 relief workers in the flooded states of the Northeast, congressmen gathered their forces to push through a gigantic flood control bill.[8] On 23 Marcha group of representatives from the ten northeastern states met to discuss a permanent flood control program.[9] A week later, an Associated Press report stated that "scores of aroused Senators and Representatives began to drive today to restore nearly $500,000,000 worth of projects to the omnibus Flood Control bill hastily revamped because of the East's recent floods."[10] At the beginning of April, ***Business Week*** reported that flood control legislation "has tremendous support in Congress." The explanation was that "the East, as the big taxpayer, usually opposes the Western drive for money to control

Swollen mountain stream threatening a valley home in West Virginia, March 1936.
Photo by Arthur Rothstein.

floods with; but now the East has been hard hit and so has joined in the drive."[11]

One of the easterners who had objected to the flood control bill in 1935 – Senator Tydings of Maryland -was now very quiet. An article in the ***Washington Evening Star*** recalled how the senator had ridiculed the idea of flood control money being spent for places such as Williamsport, Sunbury, Lock Haven, and Harrisburg, Pennsylvania, where, he said, there was no real flood danger. The writer then gave statistics on how many feet of water had recently covered those places. The flood control bill, he concluded, "will have no opposition from the Senator."[12] Tydings' own state of Maryland suffered severely from the March floods, and Maryland's T. Alan Goldsborough was one of the leading representatives calling for the 23 March flood control meeting.[13] The question no longer seemed to be whether there

would be a flood control bill, but rather what sort of bill would it be and which projects would be included. This was the task facing Senator Copeland and his Commerce Committee in the latter days of March 1936.

In many respects, the flood control bill could not have been in more able hands than those of Royal S. Copeland, the senior senator from New York. He was intelligent (his opponents called him cunning) and hard working, a knowledgeable political strategist and a forceful speaker. A native of Michigan, Copeland received a medical degree there in 1889 and taught at the University of Michigan Medical School before moving to New York City in 1908. In New York, he switched from the Republican to the Democratic Party and in 1918 was appointed City Health Commissioner. A friend of William Randolph Hearst and a popular medical columnist for Hearst's newspapers, Copeland ran for the U.S. Senate in 1922. He was popular with the voters, not only in heavily Democratic New York City, but also in the more conservative upstate New York region where the Democrats had always been weak. He was a conservative Democrat, which explains much of his upstate appeal, but he was also deeply committed to national flood control.[14] His strong support for flood control was consistent with his general interest in measures that protected the health and safety of the nation, and the large flood control lobby in upstate New York continually reminded Copeland of the grave problems in this region.

On two flood control issues, however, he remained a conservative. First, he favored local contributions for flood control projects as the only means of preventing undeserving projects from being slipped into authorization bills. Second, and far more significant, he specifically opposed federally constructed reservoirs that required hydroelectric power benefits in order to achieve a favorable cost/benefit ratio. Only if a reservoir could show a favorable cost/benefit ratio for flood control alone would he support it. His basic position was one of opposition to any major federal hydroelectric program. Federally constructed hydroelectric dams put the national government in competition with private interests in Copeland's eyes, and thus he objected to such projects. His fears of federal hydroelectric competition with private utility companies were first aroused during the Senate debate on the Tennessee Valley Authority bill. Copeland thought its provisions for electric power distribution were detrimental to

Royal S. Copeland, Senator from New York, 1923-1938.

the private power companies -many of whose stockholders lived in New York. Again, in the early stages of the Commerce Committee hearings in 1936, Copeland told the *New York Times* that he hoped to exclude all reservoirs that combined hydroelectric production with flood control from the flood control bill. He feared that these multipurpose reservoirs would not only drive the total cost of the program too high, but he "mistrusted putting the Federal Government any further into the business of generating and selling electricity." The TVA and Grand Coulee and Boulder (Hoover) dams had already caused the private utilities to suffer.

When H.R. 8455 was reported out of the Commerce Committee near the end of April 1936, Copeland explained to reporters that projects "which might have merit for preventing soil erosion or for the generation of hydroelectric power have been excluded . . . so they may be advanced in other measures to be judged by Congress on an independent basis."[15] Actually, Copeland was willing to allow soil conservation programs into the bill, but he fought hard to keep hydroelectric projects out. His public position in 1936 was simply that H.R. 8455 should be strictly a flood control bill. He said that hydroelectric power production was incompatible with flood control from an engineering perspective; flood control reservoirs required relatively low water levels in order to accommodate flood waters, whereas hydroelectric dams needed higher water elevations for maximum efficiency. Also, Congress had not established a national policy on hydroelectric power, and to inject that issue into the current debate on an emergency flood control bill was wrong. The Corps of Engineers and a majority on the Commerce Committee shared these viewpoints.[16] Copeland's more fundamental opposition to the

expanding role of the federal government in the area of water power became even clearer in 1937, when he strongly denounced efforts to expand the TVA concept into seven other river basins and to revise the 1936 Flood Control Act to make federal hydroelectric development equal to flood control as a national policy.[17] The real objective of this policy, he believed, was "public ownership of electric utilities."[18]

Copeland dominated the Commerce Committee not only because he was its chairman, but because he was a skillful political leader who grasped well the complex issues surrounding flood control. Other influential members of the committee included Senators Overton, Clark, Vandenberg, Joseph F. Guffey (D-Pennsylvania), Francis T. Maloney (D-Connecticut), and Charles L. McNary (R-Oregon). Of this group, Overton was most experienced in flood control matters. He sponsored the $272 million revision of the lower Mississippi flood control plan of 1928, but his knowledge of flood control really did not extend past the alluvial plain of the Mississippi. He, like most of his colleagues, knew very little about flood problems elsewhere in the country. When the committee began trying to redraft H.R. 8455, they discovered how complex and difficult a job it was. The 14 Democrats and 6 Republicans on the committee often disagreed, and there was no consistent party position insofar as this legislation was concerned. Everyone agreed on the need for a national program of flood control to reduce damage such as had occurred in March 1936. However, questions such as how far the program should go beyond catastrophic flood control and how it should be carried out and financed were difficult and confusing for both Democrats and Republicans.

The committee relied entirely on the information provided by the Corps of Engineers. It also relied on the Corps to provide advice and suggestions on basic policy. As Senator Maloney said at the outset of the hearings, "I do not think the members of this committee or of the Flood Control Committee of the House are anywhere nearly in the position to determine the thing as is [sic] the War Department and General Markham's engineers."[19] Consequently, the committee began its hearings by asking General Markham what should be done in response to these flood disasters. Markham replied that the committee should proceed to draw up a nationwide federal program of meritorious flood control projects based primarily on Corps recommendations

from its 308 reports. Flood control was a regional and national problem; thus, individual states and localities were unable to take effective action. He said the question of who should pay what proportion of the expense was a "matter of great difficulty," but he believed that local interests should pay some part of the cost.[20]

The committee agreed that some immediate action was required and asked Markham to draw up a revised flood control bill to present to the committee on 25 March. The main objective was to determine the actual cost to the federal government of providing some reasonable level of national flood protection. The committee was satisfied that the 308 reports, together with various Corps emergency studies (such as for New York State and New England), would form a list from which it could select those to be put in the final bill.

Exactly how many projects should be placed in the bill was a subject the committee debated intermittently throughout the hearings. Some committee members, led by Senator Vandenberg, wanted to keep the total costs as low as possible, while others thought the magnitude of the flood problem, in the Northeast as well as in many other sections of the nation, required a much larger, permanent, nationwide program. General Markham appears to have thought at first that the committee was interested only in some type of limited emergency program, but when it became clear that the committee was divided on the issue, he said the Corps had over a billion dollars worth of flood projects it could present for their consideration.[21]

When the committee met again on 25 March, the Corps was ready with what amounted to a completely new piece of legislation, since very little of H.R. 8455's language survived and the list of specific projects was substantially altered. The revised bill began with a long declaration stating that flood control was a national responsibility. Copeland read this statement to the Senate on 2 April 1936.

DECLARATION OF POLICY

Section **1.** It is hereby recognized that destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, constitute a menace to national welfare; that it is the sense of Congress that flood control is a proper activity of the Federal Government; that investigations and improvements of rivers and other waterways for flood-control purposes are in the interest of the general

welfare; that the Federal Government should improve or participate in the improvements of streams for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected; and that the interests of the Federal Government are particularly involved in such flood-control improvements as may otherwise be impracticable of initiation or execution on account of complications of relationships between States, their political subdivisions, or local organizations. Section 2. That hereafter Federal investigations and improvements of rivers and other waterways for flood control and other purposes shall be under the jurisdiction of and shall be prosecuted by the War Department under the direction of the Secretary of War and supervision of the Chief of Engineers, except as otherwisespecifically provided by act of Congress; and that in his reports upon examinations and surveys, which so far as possible shall be conducted equally throughout the United States, the Chief of Engineers shall be guided as to flood-control measures by the principles set forth in Section 1 in the determination of the Federal interests involved.[22]

Copeland's purpose in placing this "declaration of policy" before the Senate was threefold. First, he wanted a general statement of the necessity for a national flood control program that would clearly authorize the Corps of Engineers to be the nationwide planning and construction agency. The Corps would henceforward be empowered, with the approval of Congress, to construct flood control works anywhere in the nation, and congressmen were assured that this huge public works program would be in the hands of a familiar and trusted agency--not some recent New Deal creation. Second, the bill required a constitutional basis. At this stage of the bill's evolution that basis was the General Welfare Clause, but the final version was to include a reference to the impact of floods on "obstructing navigation, highways, railroads and other channels of commerce between the states" in order to root the legislation in the Commerce Clause as well. Third, and perhaps most important for Copeland, he wanted the senators to know that this bill was exclusively for sound projects of flood control (and nothing else) approved by the Chief of Engineers under the direction of the Flood Control and Commerce Committees of the Congress. Copeland said he assumed that every senator agreeing to this declaration of policy "will help make this bill what it should be, a constructive bill for the conservation of natural resources, and not in any sense a bill to make votes."[23] At the core of the bill was a list of specific flood control projects drawn from Corps reports and surveys, but now substantially altered from those

contained in the original version of H.R. 8455.

Brigadier General George B. Pillsbury, Assistant Chief of Engineers (Markham's representative on this day), told the committee that the Corps began selecting the new list of projects by first considering all of its flood control projects with favorable cost/benefit ratios. The total cost for these projects was $1.3 billion. The Corps then eliminated "all projects which do not appear to us to be necessary to prevent disaster," which, incidentally, included all those requiring hydroelectric power benefits to reach a favorable cost/benefit ratio. Finally, they added new projects in the northeastern part of the nation because of the flood problem of the previous two weeks. The total cost of these projects came to approximately $500 million. A further assessment by the Corps, probably at Copeland's suggestion, reduced the package of projects to approximately $310 million in direct construction costs, with an additional $85 million in land and damage costs.[24]

The most innovative aspect of this flood control program was that, while the great majority of projects in the bill were for levee construction and stream improvements, the Corps recommended that almost two-thirds of the total expenditures be for reservoir construction, primarily in New England, upstate New York, the drainage basin around Pittsburgh, the Arkansas River basin, and southern California. Exhibiting a belief in reservoirs that the Corps had not shown in previous decades, Pillsbury maintained that a good reservoir system was unquestionably "the best way to provide flood control." The only drawback, he said, was the high construction costs. This seeming departure from previous Corps policy on dams versus levees stemmed mainly from the shift of focus from the lower Mississippi to rivers where flood control dams were far more feasible from both the engineering and economic standpoint. As Markham told the Commerce Committee, the lower Mississippi had too vast a watershed to be controlled exclusively by dams. Building over a hundred huge reservoirs for the lower Mississippi would flood as much land upstream as it would protect downstream. It would, he said, "trade cornlands for cottonlands." Protecting the more narrow and valuable flood plains of Ohio, Pennsylvania, New York, and New England was an entirely different question.[25]

The elimination of all reservoirs with significant power benefits was opposed by a number of congressmen from districts

where this benefit was required to give projects a favorable cost/benefit ratio. Thirty-nine multipurpose flood control/power reservoirs included in the House version of H.R. 8455 were dropped by the Senate committee. Copeland, Guffey, and the Corps agreed that the flood control bill should ensure that every dollar spent under its authority be for flood control alone. Powerful senators such as Burton K. Wheeler (D-Montana) were angry at Copeland and the Corps for rejecting their pet multipurpose projects, but the committee held fast and eventually voted 8 to 5 to exclude all multipurpose reservoirs that could not show a favorable cost/benefit ratio on flood control alone.

The committee made two small concessions to hydroelectric power development. The first was to allow construction of penstocks in flood control dams having hydroelectric potential, but only if approved by the Secretary of War. Copeland said he was concerned over the expense of even this small step in the direction of multipurpose development, but when General Markham told the committee it would add "very little" to construction costs, penstocks were allowed into the bill. Markham also emphasized that very few reservoirs were involved and that most reservoirs, to be used effectively for maximum flood control, would be too empty to generate much electric power. The second concession was the authorization in Section 7 of the flood control act for the continuation of surveys, studies, and reports on ten reservoir projects that had future possibilities for hydroelectric development in addition to their already established flood control benefits. As of spring 1936, the flood control benefits were insufficient to warrant inclusion in the bill, and there was yet no market for their hydroelectric potential. Two of these dams were in Montana and seem to have been put in to satisfy Senator Wheeler, but Senator Bailey was the committee member most interested in this section and was responsible for its final wording. Three of the ten dam sites were in Bailey's home state of North Carolina.[26]

The federal construction of penstocks was certainly not intended by the Commerce Committee to indicate an endorsement of federal power development at flood control reservoirs. In fact, the Federal Power Commission could not have developed hydroelectric projects at any of the reservoirs authorized under the 1936 Flood Control Act since the projects remained in state and local ownership. The ABC requirements were similar to

those the Corps had used on flood control projects as far back as the 1917 Flood Control Act. They called for state and local interests to "provide" land and easements for the projects, but not to "convey" the title to the federal government. Aside from one brief allusion to land title and power production by General Pillsbury, the issue never arose during Commerce Committee hearings. Copeland may very well have understood that this provision prohibited federal hydroelectric development at the reservoir sites, but never brought it to the committee's attention even though it appears that some committee members believed the federal government was to begin "acquiring land" under the act. General Markham undoubtedly understood the connection between federal ownership and hydroelectric power, but never mentioned it, assuming perhaps that the committee knew what it was doing in the area. The War Department never kept it a secret that the 1936 Flood Control Act prohibited federal hydroelectric development at all dams constructed under its authority. Oswald Ryan, the general counsel to the Federal Power Commission (FPC), brought the problem to the attention of the White House. FDR asked Attorney General Homer Cummings for his view. Cummings said it did not seem clear to his office exactly who would have title to the dams. The FPC believed the federal government held title, but the War Department held that ownership rested with the state and local interests. In the face of this dilemma, the Attorney General thought it would be unsafe for the federal government to undertake any hydroelectric projects at these dams until clarifying legislation had been passed. The 1938 Flood Control Act corrected this "oversight," much to Copeland's disgust, by excluding reservoirs from the ABC requirements.[27]

Another major question was who would pay the costs. It took the committee weeks to resolve this problem, and no one was happy with the solution. General Markham believed local interests should pay the land and damage costs and operate the projects when they were completed, but had no idea what percentage each party should pay. These ABC requirements had been placed in H.R. 8455 by the House Flood Control Committee, and the Corps wanted them includedin the Senate revision. When several committee members objected to the requirements, the Corps suggested some possible solutions. It proposed that in areas where the land and damage costs were low com-

pared to the benefits, such as in the West and in remote rural areas, local interests should pay some part of the construction costs. Conversely, in areas such as the Pittsburgh region or New England, where the land and damage costs would sometimes exceed the construction costs, the federal government should pay a portion.[28] The Corps gave the committee a variety of formulas and proposals, but each seemed too complex or inequitable to one area of the country or another. Both the Corps and the committee failed to resolve the question of who actually receives the benefits from large reservoirs on a tributary of a major river basin. Senator Guffey, fearful that the huge land and damage costs for Pittsburgh flood control projects would put too heavy a financial burden on the Pennsylvania taxpayers or make them reluctant to build the reservoirs, moved that the bill be amended to provide that the federal government would pay the total cost of the flood control projects-lands, damages, and construction. By a 9 to 4 vote, the amendment passed. Copeland, Vandenberg, Wallace H. White (R-Maine), and Vic Donahey (D-Ohio) voted against it.[29]

The vote was taken at the end of the 15 April hearing. The next day Senator Overton and several other members expressed reservations about their votes. Copeland told the committee that he had heard a rumor that the President would veto the bill if the federal government was required to pay all the costs. He also reminded the committee that its action conflicted with the recommendation of Generals Markham and Pillsbury. As a result, the committee voted 9 to 6 to put the ABC requirements back into the bill.[30]

The restoration of local contributions forced the committee to struggle again with the cost-sharing issue. Eventually, a series of complex provisions were agreed upon and are found in Sections 3(c) and 4 of the act. The situation in the Pittsburgh area convinced the committee that local interests should not be expected to pay all land_ and damage costs in every instance. In cases where the land and damage costs exceeded the total construction costs, the federal government would pay 50 percent of the costs beyond that point. In addition, the act provided that, whenever more than 75 percent of the estimated benefits of a project lay outside the state in which a project was located, the federal government would operate the project, and the state would be required to pay only 50 percent of the cost of land and

damages. The committee thought this was to apply largely to the Pittsburgh area. These percentages were not debated by the committee. It simply accepted the Corps' suggestions, which General Markham told them were "perfectly arbitrary and only for your consideration."[31] In order to allow further adjustments in cost sharing, the committee drafted a provision authorizing interstate compacts to apportion nonfederal costs. Several committee members were very skeptical that voluntary interstate compacts would actually work, but the committee at least voted to provide the opportunity. This provision became Section 5 of the act and was similar, but not identical, to House Joint Resolution 377 introduced by Representative William M. Citron (D-Connecticut), which became law on 8 June 1936. For a variety of reasons having to do more with the Roosevelt administration's slowly evolving hydroelectric power policies than with flood control, the interstate compact drawn up by the New England states never received federal approval. The necessity for interstate compacts and other cost-sharing devices for flood control reservoirs was finally obviated by the Flood Control Act of 1938, which authorized the federal government to pay all land, damage, construction, and maintenance costs for flood control reservoirs and channel improvements.[32]

The confusion over local contributions and the disagreements regarding the total number of projects that should be authorized made it difficult for General Markham to present an appropriate package of projects to the committee. When he included expensive projects for the Northeast while removing a number of combined flood control/power reservoirs, committee members from the West questioned the elimination of many of their dams simply because they required additional water power benefits to obtain a favorable cost/benefit ratio. Until the land and damage costs issue was resolved, the Corps did not know whether the government would be asked to pay $310 million or $395 million for the same group of projects.

Senator Vandenberg suggested several times that the whole question was too complex to be settled by the committee at this time. He recommended that they authorize only a few flood control projects for the Northeast, which was the most threatened area. The broader issues could be discussed at the next congressional session as part of the comprehensive development plan for all aspects of river development. The senator seems to

have had in mind the work of the National Resources Committee, because earlier in the hearings he asked Senator Joseph T. Robinson, the Senate majority leader, if he knew what the NRC might be able to contribute to the committee's deliberations. Robinson said, "I cannot give a reliable answer to that. I do not know what work the National Resources [Committee] would be expected to perform, but I gather that the President's idea is that the subject of flood control is inseparably associated with reforestation and with soil conservation." Copeland, who strongly supported the NRC, said nothing at all about it in committee. The brief reference by Vandenberg and Robinson was the only mention of the NRC during the entire hearings.[33]

Markham was patient throughout the hearings, but it became increasingly obvious that the committee really wanted the Chief of Engineers to come up with an agreeable flood control bill. Whenever he had a new idea, the committee divided its opinions a different way. At one point Markham said,

> It seems to me that the Corps of Engineers cannot recommend anything here very intelligently until the committee itself, or the Congress itself, tells us what line to pursue. Other than that, and up until this minute, we have simply been working mechanically to assist the committee on our understanding of what the committee desired in the way of devising a measure for this particular year. ... It is difficult for us to recommend what ought to be done in a given instance, because we have no compass, Mr. Chairman.[34]

The chief difficulty was the committee's attempt to push through a bill in an "emergency" atmosphere, while at the same time devising a basic long-range national policy for a complex and controversial subject. Senator Guffey recognized that the committee's vacillating from a total package of $300 million to $400 or $500 million and back to $300 million made it impossible for the Corps to give good advice. "I do not think we are being fair to the engineering department," said Guffey, "unless we establish some limitation." Markham heartily agreed, saying that if the committee could concur on how much they wanted to spend and how much the federal government would have to spend, he could provide the committee with a specific package of projects in 48 hours, "but we must have some directive."[35]

Because the committee was so divided and so many members failed to understand all the issues involved, little direction was ever given to Markham except that the federal appropriation should stay around $300 million. Furthermore, multipurpose

projects should be kept out, and local interests should pay the ABC costs except in those cases provided for in Section 3(c). On 24 April Copeland told the committee to stop debating and take some action. "We have to do something very soon ... if we expect to pass a bill we have got to get it on the floor."[36]

Near the very end of the hearings, the question of soil erosion projects and their relationship to flood control arose. The committee, or at least Copeland, was aware of Secretary of Agriculture Henry A. Wallace's interest in including a soil erosion program in the flood control bill. In addition, Senator Robinson had told the committee that the President wished to tie soil erosion and reforestation to any flood control program. Secretary Wallace and General Markham had discussed the matter briefly in the early days of the hearings, but Markham said he had seen no specific bill or amendment. When Copeland had asked Markham if he intended to bring a soil conservation proposal to the committee to make a "composite bill," the general replied, "right now I am sticking really with our own views in pursuing this matter."[37] Neither Copeland nor anyone else on the committee pursued the matter until 24 April, the next to the last day to get the bill finalized and out to the Senate. A project on the Gila River in Arizona came up, one that had been planned by the Soil Conservation Service of the Agriculture Department for both flood control and soil conservation. There was no discussion of it, and Copeland summarily deleted it from the bill.[38] The following day Senator Carl Hayden tried to save his project but was unsuccessful because, as Copeland told him, "I am unwilling to have included in the bill any project which has not been given the endorsement of the Army Engineers."[39]

Finally finished with debate over multipurpose reservoirs, cost sharing, and the list of specific projects to be authorized, the committee on its last day attempted to address all remaining issues. Even at this late date, Senator Vandenberg continued to worry over the breadth of federal responsibility assumed under the bill. He asked Copeland if the declaration of policy in Section 1 could be altered to limit federal flood control activities to navigable streams and their tributaries. This would, he hoped, relieve the government of responsibility for controlling floods on "all the creeks in Michigan." Copeland said he had no objection and the words "on navigable streams and their tributaries" were inserted in Section 1. Whether this actually limited the scope of

the bill is debatable, since General Markham had stated earlier in the hearings that almost any stream on which something of commercial value can be floated for any distance is "susceptible of navigation" in legal terms.[40] This whole discussion, coming in the final hours of the hearings, reflected the tentative and hasty process that marked the drafting of the flood control act.

The best defense that can be made for the committee's actions was that it worked under difficult circumstances. It was charged with redrafting a very imperfect flood control bill in a limited amount of time with the entire northeastern United States demanding immediate and sweeping action. Flood control was, and is, an extremely complex technical and financial issue, and framing a nationwide policy challenged the experienced senators from the lower Mississippi region. President Roosevelt had not yet offered any national flood control program or river basin development plan, and his National Resources Committee, for whatever reasons, chose not to advise the Commerce Committee. This left only the Corps of Engineers to aid the senators. The Corps believed it could execute an effective flood control program immediately, so long as they were not required to integrate that program with other water resource uses. That was a far more complex issue and would obviously have required more time than seemed politically realistic. This narrow approach appeared to suit the committee, especially Copeland. The immediate crisis could be attacked, while other aspects (like hydroelectric power) could be put off and debated openly on their own merits later.

As the Commerce Committee struggled with H.R. 8455 in late April to report a completely revised flood control bill out to the Senate floor, many other people became active behind the scenes. Word of the committee's success moved quickly in official circles. The bill's progress was widely covered in the press, because the March floods, and thus flood control, were now front page news. While the Commerce Committee hearings were closed, newspapers reported the latest news, basing their stories mainly on Senator Copeland's regular series of public statements.

The two federal agencies that responded most actively to the resurrection of the flood control bill were the newly created Soil Conservation Service of the Agriculture Department and the National Resources Committee. Both agencies sought President

Roosevelt's aid in influencing the bill. Secretary Wallace and Morris L. Cooke contacted the President, who was spending the last week of March and first week of April fishing in the Caribbean, to state that they had just read Senator Copeland's policy statement declaring flood control a national responsibility and giving agency authority exclusively to the Army Engineers. They "urgently" suggested broadening the statement to declare that the nation was threatened not only by floods, but by "land misuse, erosion and accelerated run off of rain water in the drainage basins." They asked Roosevelt to consider allowing the Soil Conservation Service to make surveys and approve projects in upstream areas just as the Corps of Engineers was authorized to do under the Copeland bill.[41] The President radioed back the next day that flood control was only one phase of a much larger subject, and the Copeland declaration of policy "should include all forms of land misuse covering erosion, reforestation, aforestation, water storage, irrigation and drainage." He suggested that the Corps and the Department of Agriculture make such studies jointly and that the National Resources Committee, the Resettlement Administration, and the Rural Electrification Administration be called in to cooperate.[42]

The NRC's Water Resources Committee quickly took issue with Roosevelt's message. The committee passed a resolution requesting that the President designate it as having "primary responsibility" for flood control and all related basin-wide programs. Charles W. Eliot, one of the three leading officials on the National Resources Committee, relayed this information to the President on 28 March.[43] Arriving the same day was a radiogram from one of Roosevelt's chief White House aides, Stephen Early, telling the President that there was growing sentiment in Congress to pass a flood control bill at this session in response to the recent floods in the Northeast. He also told FDR that Secretary of War Dern thought the President should give the Copeland bill careful consideration.[44] Apparently Dern, Ickes, and Wallace then decided the whole flood issue was too difficult to resolve until the President returned to Washington. The matter rested until 10 April.[45]

The Water Resources Committee, encouraged by the President's apparent approval of its role as the primary agency in flood control studies, immediately began drafting a memorandum indicating the improvements needed in flood control studies and the

manner in which the committee, as a component of the NRC, would distribute flood investigation funds among the various relevant agencies, such as the Corps of Engineers, Soil Conservation Service, Geological Survey, and the Weather Bureau. This memorandum, dated 2 April 1936, clearly implied that current flood studies were too fragmentary and imprecise to serve as a basis for a sound flood control program. To begin with, they asserted that the data were quite incomplete on the relationship between forest and grass cover, soil erosion, and flooding. Therefore, it would be very difficult to decide how large a role reforestation and soil erosion control should play in a flood control program. Second, the whole area of costs and benefits from flood control projects was poorly understood. Finally, the recent floods "may warrant numerous changes in estimates, plans, and specifications included in such previous reports as have been made. The Corps of Engineers' '308 Reports' are the chief sources of flood control programs and they should be kept up to date." The document was signed by the WRC's executive committee, composed of Abel Wolman, Chairman; John C. Page, Bureau of Reclamation; Thorndike Saville, Associate Dean of Engineering, New York University; and Colonel Edgerton, Corps of Engineers.[46] Edgerton's signature on the memorandum may reflect some internal disagreement within the Corps, for both Markham and Pillsbury agreed that the 308 reports were perfectly adequate for an immediate program of flood control. They also thought that forest and soil programs were not significant enough to warrant inclusion in the Commerce Committee's flood control bill, and the cost/benefit question could be adequately resolved without further study. While such matters were of concern to Markham, they were not worrisome enough to cause him to recommend to the Commerce Committee that the flood control program await their resolution.

The National Resources Committee met on 11 April to discuss the WRC memo of 2 April and recommend to the President that it serve "as a clearing house for information on flood studies" and that the WRC receive an allocation of $500,000 for further flood studies, which it would spend itself or would reallocate to other federal or state agencies.[47] By this time, Markham and Secretary of War Dern had become aware of the 2 April memo, and Secretary Dern opposed the whole idea. In his view, the flood situation "from an investigation standpoint would

appear to be well in hand." The expenditure of another $500,000, he said, would "represent almost entirely a duplication of both effort and funds."[48] Dern was the lone dissenter on the NRC. Secretary Ickes reported the NRC decision to the President, who sent it to Acting Director of the Budget Bell. Bell thought the use of the NRC as a clearinghouse for flood information was useful and suggested issuing a budget circular to this effect. Following Roosevelt's approval, Bell's recommendation was implemented with the issuance of Budget Circular 338 on 14 May 1936. The proposal to conduct further flood control studies under the direction of the Water Resources Committee of the NRC seemed unnecessary to Bell, and no funds were allocated to the NRC for this purpose.[49]

The NRC's attempt to play a larger part in flood control did not improve its visibility or its popularity in Congress. Public and congressional attention focused on Senator Copeland, the Commerce Committee, and the "Copeland flood control bill," as it had come to be called. The nation's newspapers carried long articles on the flood problem and the Copeland bill. It was reported at various times in late March and early April that a bill involving the expenditure of $300 million, $500 million, or $800 million was about to be reported out of the committee. Occasionally, the papers briefly noted that the National Resources Committee would have a comprehensive river basin development plan, including flood control, ready for the President by 1 December 1936.[50] In the flood emergency atmosphere of April 1936, this announcement appeared to impress no one except, possibly, the President.

The President's first public statement on flood control legislation after his return to Washington was at his 15 April press conference. He said that he knew nothing yet about the Copeland bill but would probably support flood control projects of some sort, especially if "they put people to work right away." He reiterated that linking flood control to multipurpose river basin development was the administration's goal.[51] When asked how he felt about local interests paying the costs of land and damages for projects, Roosevelt replied, "I don't know. I haven't given that any consideration."[52] It appears, therefore, that FDR was inclined toward approval of a flood control bill but was not ready to commit himself publicly until the cost-sharing issue had been resolved. His denial of giving any consideration to cost sharing

could be true, but the question seems too important for him to have totally ignored it. This was not the first (or last) time FDR feigned ignorance of a subject he did not wish to discuss.

The President clearly wanted multipurpose river basin development but did not rule out a separate flood control bill. His chief concerns at the time seemed to be the escalating costs of the flood control program, the lack of a soil erosion component, and the absence of any role for the National Resources Committee. Roosevelt, as well as many Republicans, seemed to think the National Resources Committee would provide an effective brake on congressional public works projects. On 20 April, Roosevelt sent a note to Senator Robinson asking if he could get a bill to establish a permanent National Resources Committee through the Senate "in order to stop wild raids for Public Works at the next session."[53] During the debate on the Overton bill, which revised the 1928 lower Mississippi flood control program, Senator Vandenberg and other Republicans vainly urged delay on the measure until the National Resources Committee could present a more comprehensive national flood control plan.[54]

In the course of these arguments, Louis Howe, Roosevelt's lifelong friend and chief advisor, died. The President went to Massachusetts on 22 April for the funeral and stayed away until 28 April, by which time the Copeland bill had reached the floor of the Senate. On the same day, hundreds of members of the Rivers and Harbors Congress descended on the capital to plead for flood control funds -- urging passage of both the Overton and Copeland bills. At his 28 April press conference, Roosevelt was again asked about the Copeland bill. The President said the flood problem could not be solved by "Army engineering only," that is, by large reservoirs and levees. Soil erosion and reforestation were needed also. Asked specifically about his role in developing the bill, he said, "No, I have not been consulted on it at all. All I know is what I read in the paper."[55] On the same day Senator Copeland was telling the Senate that he had "a good, broad hint" that unless the land and damage costs were to be paid by local interests, the President would veto the bill.[56]

The President finally gave some study to the Copeland bill on 1 May. He was prompted by a memo from his uncle, Frederic A. Delano, chairman of the National Resources Committee, who passed to him a scathing denunciation of the bill by three members of the NRC's Water Resources Committee. Chairman

Wolman, along with WRC members from the Forest Service and the Soil Conservation Service, denounced the bill as "thoroughly rotten." Specifically, the WRC group claimed that the bill, without sufficient study, would establish a basic philosophy for the distribution of project costs that might prove impractical or cause unforeseen problems in the future. Moreover, the bill included a number of "pork barrel" projects that were still being studied by various federal agencies and might turn out to be unsound. The three members also complained about the draft legislation specifying the need to have interstate compacts approved by the Secretary of War. This "intrusion of the War Department into the picture seems likely to set a dangerous precedent for other types of interstate cooperation."[57]

Accompanying the WRC communication was a memorandum from Charles Eliot to Delano setting forth his views of the situation. He said it was essential to get the National Resources Committee established on a permanent basis by Congress, but he was frustrated. "Here is Copeland," he said, "who sponsored our bill [to establish the NRC], also sponsoring the new flood control bill." Eliot thought that "a word from the President to Vice President Garner or Senator Robinson" would clarify the situation and get the NRC bill passed. If the NRC could gain permanence through congressional approval, "there would be no question of our right, even with the present wording of the flood control bill, to go ahead with coordination of flood control studies."[58] However in anticipation that congressional approval might not be forthcoming, Eliot was working with people from the Department of Agriculture and the Water Resources Committee to draft amendments to the Copeland bill. These amendments would provide for participation of all appropriate federal agencies in flood studies and would tie reforestation, soil erosion control, grazing controls, and other land programs into flood control. The key amendment was a substitute for Section 1, the major policy statement, in the Copeland bill. The amendment contained the following passage:

> . . . that the flood problem of any area should be handled in the relationship to any associated problems in the use of land and water, not as an isolated problem; that investigation looking to the prevention or control of floods and to corollary benefits from the conservation of land and water resources constitute a proper activity of the federal government; and that such investigations should involve the joint activities of all federal agencies concerned with the various types of problems in question, in cooperation with appropriate

state and local agencies.[59]

Hugh Bennett, Director, Soil Conservation Service, 1935-1951.

All the chief land and soil conservation people who opposed the Copeland bill were not agreed that a series of amendments to the bill was really necessary or feasible. Hugh Bennett, head of the Soil Conservation Service, told Eliot and the others drafting the amendments that another way of approaching the problem was "to let the Copeland bill go," hoping it would be killed or vetoed, and to push for a concurrent resolution of the two houses to appropriate $5 million for a large interdepartmental flood study to resolve the whole issue of water and land program coordination.[60]

The whole packet of memos from Delano, Eliot, and the WRC, along with the amendments and Hugh Bennett's joint resolutions, was sent to the White House by Ickes on 30 April. The next day, Roosevelt notified Senate Majority Leader Robinson that he found the Copeland bill to be "thoroughly unsound" and supported his view with long passages from the WRC communication. He suggested to Robinson that the bill not be allowed to go through and in its place Congress should pass a joint resolution to undertake a $5 million interdepartmental study of the whole flood control subject and have the report back to him by January 1937. He made no mention of the NRC and its efforts to gain congressional recognition.[61]

Roosevelt's letter had no major effect on the Senate. Robinson introduced no resolution to recommit or table the bill. On the other hand, when news of the letter reached upstate New York, people there reacted quickly. The mayor of Binghamton sent a telegram telling the President "our people fully expect, based on communications from you and from our senators and congressmen, that the federal program of flood control will be passed at this congress. Another flood would be disastrous to our business and industrial structures and to a large

number of home owners."[62] Roosevelt told reporters on 5 May that he was not in favor of the bill in its original form, but did not know what form it was in at present. He understood that some amendments were to be made and said that Senator Hayden had seen him that day with some amendments. The President commented no further on the bill.[63] Hayden, it appears, had met with members of the Department of Agriculture and possibly also Morris Cooke. The result of this meeting was an amendment, dated 1 May 1936, that added the soil conservation work of the department to the bill and expanded the statement of policy in Section 1 to include soil erosion control along with flood control as the goal of the bill. An earlier version of the amendment had included reforestation and made the Forest Service a third agency involved in flood control; however, this was dropped from the printed amendment that Hayden sent to the White House on 1 May.

Hayden's accompanying letter, written to FDR's assistant, Marvin M. McIntyre, states that the amendments should bring the bill into conformity "with the President's message on Little Waters."[64] This passing reference may offer a partial key to Roosevelt's increasingly positive attitude toward the Copeland bill. *Little Waters* was a short polemic written by H.S. Person, E. Johnston Coil, and Robert T. Beall in the fall of 1935. In emphasized the values of controlling runoff in small headwater streams as a supplement or alternative to large dams for flood control, hydroelectric power development, navigation, and irrigation. Ickes sent a copy to the President on 19 December 1935, but it does not appear that FDR gave it any attention at this time.[65] Hugh Bennett and Morris Cooke were particularly struck with the implications of the report, and Cooke sent another copy to Roosevelt on 22 January along with an enthusiastic endorsement. The President now read the report, was delighted with it, and asked Cooke for additional copies "for personal distribution." Always on the lookout for ways to expand federal hydroelectric power production, Cooke began to lobby for the ideas embodied in *Little Waters,* coining his own term for the program— "upstream engineering." FDR immediately liked the term and said he would try to use it in some speeches. The Water Resources Committee was quite skeptical of many of the ideas in *Little Waters* but Cooke was convinced of its soundness and wrote to Roosevelt on 5 May 1936 to keep upstream engineering

in mind "as you scrutinize legislation," assuring the President that it would not only win "half the battle" against flood control, but would also "stabilize the flow for a hydroelectric power plant downstream." The following day Cooke again sent a note to FDR saying he had just heard that an interagency agreement had been reached on the flood control bill. "In the opportunity it affords Agriculture (Soil Erosion and Forestry) to experiment 'upstream' it looks like a considerable step forward." He added that "Senator Norris thinks it is okay."[66]

By 12 May the President appeared to be on the verge of endorsing the Copeland bill. When asked if he expected a flood control bill at that session, he said, "I suppose there will be some kind of flood legislation. I do not know what kind." He added, "Of course I believe we should have some flood legislation and, especially, to start work this coming year on the most urgent cases," but he also reiterated his support for comprehensive basin development.[67] The *New York Times* ran the remarks under the headline "President Favors Flood Legislation."[68]

Even more significant was Senator Robinson's statement that flood control legislation was one of the "must" bills for the remaining days of the session.[69] Obviously, Robinson ignored Roosevelt's suggestion of 1 May about waiting for another study. Furthermore, there is no record that the President ever again communicated his original suggestion, which may indicate that the addition of upstream engineering by the Soil Conservation Service may have changed his mind. When the flood bill came up for full debate on 20 May, Copeland added the Hayden amendment to it which gave the Department of Agriculture (actually the Soil Conservation Service) the right to plan projects for watershed flood control in upstream areas.[70] Another amendment, also introduced by Copeland, was probably part of a compromise with the White House. It sought to establish the National Resources Committee as an official advisor to the President on all river basin and watershed matters as well as other areas related to natural resources. This amendment was to be taken up, however, only after the rest of the bill had been voted upon -- a clear indication that Copeland expected it to lose and did not want it to jeopardize the main bill.[71]

The Senate debate, while lengthy, was anticlimactic. Opponents of the bill, who had been swayed by Senator Tydings the year before, were not very vocal, and Tydings himself took no

part in the debate. The chief controversy centered around the attempts of a group of senators from the lower Mississippi Valley (plus Pennsylvania's two senators) to delete the section that required local interests to pay for land and damages. There was considerable public support for this position. As debate on the bill opened, more than 500 people from *22* states, calling themselves the United States Flood Control Association, arrived in Washington wearing badges saying "Flood Control Now" and doing everything they could to promote the Copeland bill. The federation had an effective leader in Tom R. Hutton, who was editor of the *Binghamton Press*. Many members of the federation favored 100 percent federal financing of flood control projects—particularly those from the Northeast, where costs for land and damages would be high compared to other parts of the nation. Copeland told the federation, though, that eliminating local contributions might kill the bill. "We must get a bill signed as well as passed."[72]

The first attempt to eliminate the land and damages payments came in an amendment by Senator Theodore G. Bilbo(D-Mississippi), which was strongly supported by Senator Guffey. Guffey believed that the excessive costs to Pennsylvania would prevent any effort to construct the series of reservoirs to protect Pittsburgh. However, when the vote came, the Bilbo amendment lost 55 to 15. Guffey tried next to eliminate local payment of damages because, again, in Pennsylvania costs would be high due to the numerous railroad tracks that would need to be moved. This amendment was defeated 52 to 11.[73]

Attempts to load up the bill with projects that had not been recommended by the Chief of Engineers were also defeated easily. One reason was that the majority of new projects in the bill were for the populous Northeast and the majority of those eliminated were large reservoirs chiefly for the Arkansas and White river basins, an area which did not have enough senators to form a significant bloc. Senator Robinson as majority leader was the most powerful senator from this area, but he was satisfied with assurances from Copeland that the studies authorized in Section 6 of the bill would ultimately result in the authorization of the reservoir projects.[74] Therefore, the bill moved along without a major problem. On 21 May, it passed by a voice vote.[75] Only after the bill had passed did Copeland attempt to add the National Resources Committee to the act (as Title II).

He spoke at some length on the virtues of comprehensive planning, but when it became clear, as he undoubtedly thought it would, that the proposal had no real support, he withdrew it.[76]

The bill then went back to the House. There it received some rough treatment from congressmen in Missouri, Oklahoma, Arkansas, and Louisiana, where flood control reservoirs offering primarily water power benefits had been eliminated. But basically there was little opposition. On the final vote the House endorsed Copeland's revised H.R. 8455 by a vote of 297 to 51.[77] It was engrossed and sent to the President on 15 June.[78]

By this time all the available information indicates that Roosevelt had decided to sign the bill. In fact, it appears that the decision may have been made in late May just after it passed the Senate. Three pieces of evidence lead to this conclusion. The first is an exchange of letters between FDR and New York's Governor Lehman. Lehman had written the President on 8 May urging him once again to press Congress for passage of the bill. FDR did not reply until the twenty-third, two days after the Senate passed the amended bill. He apologized to Lehman for the delay in his response, explaining that he had been "waiting a bit on developments on the Hill with respect to the flood control measure." Now he could reply to the governor that he was "very hopeful that adequate steps will be taken before the Congress adjourns."[79]

Second, on 27 May the White House approved a request from General Markham to increase the number of Army officers in the Corps of Engineers in order to administer the expanded rivers and harbors work, as well as to plan the vast program contemplated in the Copeland flood control bill.[80] It seems doubtful that this expansion would have been approved by the President if he had planned to veto the bill.

Third, and most telling, Roosevelt sent a note to Budget Director Daniel W. Bell on 2 June. FDR attached a memo he had received from Morris L. Cooke expressing fears that the final version of the Copeland bill (which had to go back to the House and was at this time under debate there) might leave out the soil conservation amendments and endanger the future of *Little Waters*. The President asked Bell to "do the best you can" to assure that soil conservation remained in the bill.[81]

As soon as the President received the engrossed bill from Congress, he asked White House Staff Director Rudolph Foster

to find out the last day he could sign the flood control bill in order to get funds for it into the final deficiency bill for emergency relief expenditures. Budget Director Bell told him it was 24 June, and FDR told Foster to have all the flood control papers ready on the twenty-second. In addition, he wanted to meet with Markham, Henry Wallace, Cooke, Hugh Bennett, Frederic Delano, and Abel Wolman to discuss which projects to undertake.[82]

If the President had any remaining thoughts of vetoing the bill, he may have been persuaded otherwise by a well-organized barrage of telegrams from the city councils, chambers of commerce, and citizens of almost every flood-stricken region of upstate New York.[83] Such last-minute pressure was probably unnecessary. Congress had declared itself ready to take action on flood control, and it made little political sense to deny the decision. The bill had passed by overwhelming majorities in both houses -far more than the two-thirds that would have been required to pass it over a veto. For the President to have vetoed a measure so earnestly desired by both flood victims and the unemployed on the eve of a national presidential election would have been very out of character for FDR.

On 22 June the President signed H.R. 8455 without any public ceremony. Two days later he received a letter from the Flood Control Committee of the Binghamton Chamber of Commerce congratulating him on signing the bill. "With one stroke of your pen, you have eased the minds of thousands of farmers, industrialists and home owners."[84] A national program of flood control had become, finally, the official policy of the federal government.

CHAPTER VI

Conclusion

The Flood Control Act of 1936 established an enormous commitment by the federal government to protect people and property on approximately 100 million acres. The only limitations on federal flood control projects were that the economic benefits had to exceed the costs, and localinterests had to meet the ABC requirements for local projects. Since 1936, Congress has authorized the Corps of Engineers to construct hundreds of miles of levees, flood walls, and channel improvements and approximately 375 major reservoirs. These remarkable engineering projects today comprise one of the largest single additions to the nation's physical plant -rivaled only by the highway system. They have saved billions of dollars in property damage and protected hundreds of thousands of people from anxiety, injury, and death. They stand today as one of the more significant marks of our technical skill and humane spirit.

It was that faith in technology and intensity of humanitarian spirit, exhibited especially during the catastrophic floods of 1936, that explains congressional willingness to adopt such sweeping legislation without examining its implications more thoroughly. Hundreds of determined citizens came to Washington in the spring of 1936 demanding "Flood Control Now." Congress and the President gave them what they wanted, hoping that in the future all the intertwined elements of America's river basins could be tied together in some acceptable fashion. President Roosevelt thought this could be accomplished in a year or two through the National Resources Committee. But in Congress the rivers-harborsflood control bloc, as it came to be called, hesitated to turn such politically sensitive questions over to a new and relatively unknown agency steadfastly linked to the President and distant from the legislative branch. The NRC's recommendation that Roosevelt veto the Wilson-Copeland flood control bill was certainly justified on administrative and technological grounds, but it was poor political advice. Frederic A. Delano and

One result of the 1936 Flood Control Act: a concrete flood control channel to help prevent the Los Angeles River from flooding metropolitan Los Angeles. The city hall is in the background at the left. This picture was taken in 1941.

Charles E. Merriam were men of vision and intelligence who should have accepted the fact that pork barrel legislation was a factor in the American democratic political process – especially in a presidential election year. President Roosevelt's public statements about using the NRC to scrutinize the pork barrel projects on rivers, harbors, and (after 1936) flood control legislation only stiffened congressional resistance to the agency. By the end of the 1930s, even the Republicans had abandoned the NRC, seeing it more as an example of presidential authority than as a deterrent to irresponsible spending. Its elimination by Congress in 1943 was part of a general reaction against the whole concept of centralized federal planning in which the rivers-harbors-flood control bloc was only one factor.[1]

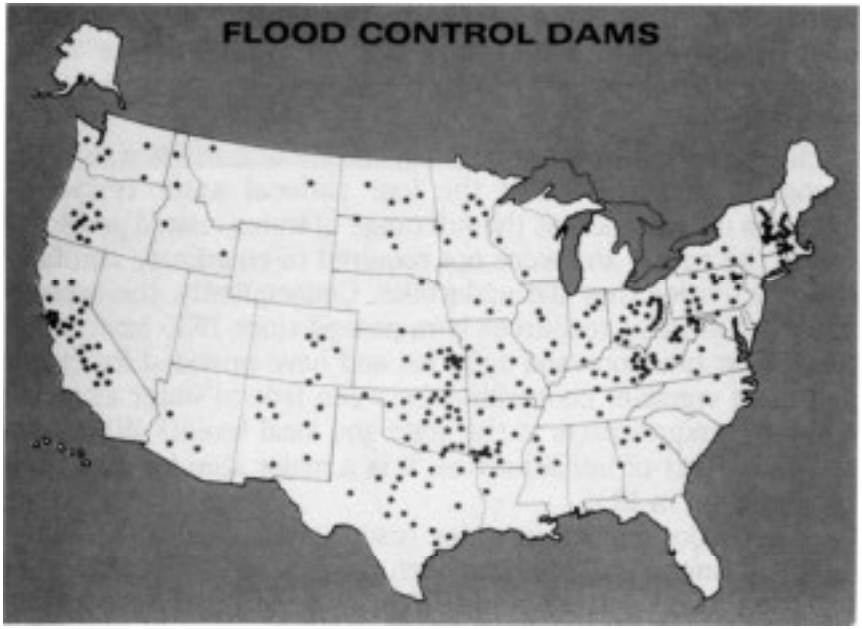
The long struggle between Roosevelt and Congress over the National Resources Committee had very unfortunate consequences for the development of the nation's water resources. It left this complex task in the hands of four independent federal agencies: the Corps of Engineers, the Federal Power Commission, the Reclamation Bureau, and the Soil Conservation Service. For two decades or more, there was relatively little coordination between these agencies except for establishing

administrative boundaries. Only the Tennessee Valley Authority could claim it was engaged in unified multi-purpose water resources development; however, this was limited to the Tennessee River basin.

Fortunately, an increasing number of congressmen came to recognize after 1936 that the four national water resources agencies did not address the full range of water-related problems facing the nation and were not required to coordinate carefully those activities they did undertake. Consequently, the approximately 100 water resources laws passed since 1936 have added many new functions and agencies and have provided for closer and more constant cooperation between federal water agencies and their counterparts at the state and local levels.[2] While this still falls short of unified action, it is a major step forward from the situation in 1936.

The major agency in water resources is clearly the Army Corps of Engineers. This had been the case in the 19th century, and the Flood Control Act of 1936 assured that its role would be greatly enlarged during the balance of the 20th century. The 1936 Flood Control Act was also an important turning point in the scope of the Corps' water resources activities. From 1824 to 1936 the civil works program of the Corps consisted almost exclusively of navigation improvements. Even the vast lower Mississippi program of the 1879-1936 era contained a large navigation component. In the years after 1936, however, the Corps steadily widened its array of water resources activities. Much of this has resulted from legislation that has modified and enlarged the huge program of flood control reservoir construction. For example, one consequence of the 1936 Flood Control Act, which removed the ABC requirements from reservoirs, was that the federal government remained the operator as well as builder of flood control dams. While this was a welcome relief to local interests faced with financing, operation, and maintenance under the 1936 Flood Control Act, it also purposely allowed the federal government to develop hydroelectric power at reservoir sites. The Flood Control Act of 1944 provided for the establishment of park and recreation areas at Corps reservoirs and authorized the sale of "surplus" water for domestic and industrial use. Two years later, fish and wildlife protection in connection with flood control projects was authorized.

Water resources program coordination between the Corps of



Subsequent to passage of the 1936 Flood Control Act, hundreds of flood control dams were built throughout the United States.

Engineers and other relevant federal, state, and local governments has slowly evolved. Beginning with the Flood Control Act of 1944, coordination and consultation between the Corps and other federal agencies and affected states and localities have been mandated for the development and planning of projects. However, the final decision making still rests with Congress. The Water Resources Council (WRC), authorized in the Water Resources Planning Act of 1965, was as close as Congress ever came to creating the type of water resources coordination agency envisioned by the National Resources Committee, but the powers and activities of the WRC were far more modest than the old NRC or Franklin Roosevelt would have wished.[3] President Reagan transferred the council's activities and personnel to other parts of the Executive Branch in 1982. In today's Corps of Engineers, water resources planning and coordination proceeds under the authority of approximately 100 pieces of federal legislation, 22 executive orders, over 50 interagency agreements, and more than 60 Office of Management and Budget circulars.[4] Such a jerry-built legislative and administrative structure is a clear improvement over the previous tradition of uncoordinated action,

but it still falls short of a fully integrated water resources administrative framework.

Within the broad area of water resources development, the Corps' flood control program has changed dramatically over the past 50 years. A significant manifestation of this is the changing definition of the term "flood control" as contemplated in the 1936 act. This term has been enlarged to encompass the concepts of "flood damage reduction" and "optimum flood plain management." This conceptual change has been accompanied by a 'noticeable shift away from the almost exclusive use of large, expensive, and environmentally intrusive physical structures toward smaller ones and/or a wide range of nonstructural programs such as flood warning systems, flood insurance, flood plain information programs, and procedures to discourage new building development on flood plains. Neither Congress nor the Corps paid much attention to these alternative approaches until the 1950s and 1960s, when the TVA undertook a very successful flood plain management program, and the reports of water resources experts such as Gilbert White (who had begun his career in the 1930s with the National Resources Committee) gradually convinced Congress and the Corps that this was an important alternative to traditional structural solutions.[5]

It is unfortunate that the research on floods and flood control carried out mainly since World War II by both government and academic investigators was not available in 1936. If so, millions of taxpayers' dollars might have been more effectively spent. On the other hand, it is not at all certain that Congress, in its haste to respond to an emergency, would have listened carefully to the full range of expert testimony even then available or that the exigencies of the pork barrel legislative process would have been overcome by rational inquiry. As a result, the flood control act that emerged in 1936 largely ignored multipurpose development and nonstructural alternatives. It sought to solve flood problems through vast construction projects that have in a number of cases been questioned by water resources experts. Nevertheless, the decisive step toward a remarkably sophisticated and imaginative flood plain management program was taken with the Flood Control Act of 1936, though few who supported it could possibly have foreseen where it would eventually lead. It speaks well of our political process that this emergency-born and single-minded flood control act has been gradually merged with rivers and

harbors legislation to form the basis of a very successful multi-purpose water resources program. In terms of flood control alone, the present system provides a far more rational and equitable way of designing projects than the act provided in 1936. The fact that it took almost half a century to achieve is part of the price we pay for a free democratic society. On balance, it seems a price well worth paying.

Appendix A

EXCERPTS From THE **FLOOD CONTROL ACT** OF 1936

The following excerpts are taken from *Laws of the United States Relating To the Improvement of Riveys and Harbors From August 11, 1790 To January 2, 1939, 3* vols. (Washington, **DC**: Government Printing Office, 1940), 3:2404-07, and 2438-39. The only excerpted portions of Sections 1-4 are those dealing with the establishment of policy, and Sections 8 and 9 are copied in their entirety. The first paragraph of Section 5 is reproduced because it authorizes the Secretary of War to approve the installation of penstocks "or other similar facilities" to allow for future possible hydroelectric power generation. The parts of the act authorizing specific projects and studies are omitted.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

DECLARATION OF POLICY

SECTION 1. It is hereby recognized that destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the States, constitute a menace to national welfare; that it is the sense of Congress that flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities thereof; that investigations and improvements of rivers and other waterways, including watersheds thereof, for flood-control purposes are in the interest of the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.

SEC. 2. That, hereafter, Federal investigations and improvements of rivers and other waterways for flood control and allied purposes shall be under the jurisdiction of and shall be prosecuted by the War Department under the

direction of the Secretary of War and supervision of the Chief of Engineers, and Federal investigations of watersheds and measures for run-off and waterflow retardation and soil erosion prevention on watersheds shall be under the jurisdiction of and shall be prosecuted by the Department of Agriculture under the direction of the Secretary of Agriculture, except as otherwise provided by Act of Congress; and that in their reports upon examinations and surveys, the Secretary of War and the Secretary of Agriculture shall be guided as to flood-control measures by the principles set forth in Section 1 in the determination of the Federal interests involved: *Provided,* That the foregoing grants of authority shall not interfere with investigations and river improvements incident to reclamation projects that may now be in progress or may be hereafter undertaken by the Bureau of Reclamation of the Interior Department pursuant to any general or specific authorization of law.

SEC. *3.* That hereafter no money appropriated under authority of this Act shall be expended on the construction of any project until States, political subdivisions thereof, or other responsible local agencies have given assurances satisfactory to the Secretary of War that they will (a) provide without cost to the United States all lands, easements, and rights-of-way necessary for the construction of the project, except as otherwise provided herein; (b) hold and save the United States free from damages due to the construction works; (c) maintain and operate all the works after completion in accordance with regulations prescribed by the Secretary of War: *Provided,* That the construction of any dam authorized herein may be undertaken without delay when the dam site has been acquired and the assurances prescribed herein have been furnished without awaiting the acquisition of the easements and rights-of-way required for the reservoir area: *And provided further,* That whenever expenditures for lands, easements, and rights-of-way by States, political subdivisions thereof, or responsible local agencies for any individual project or useful part thereof shall have exceeded the present estimated construction cost therefor, the local agency concerned may be reimbursed one-half of its excess expenditures over said estimated construction cost: *And provided further,* That when benefits of any project or useful part thereof accrue to lands and property outside of the State in which said project or part thereof is located, the Secretary of War with the consent of the State wherein the same are located may acquire the necessary lands, easements, and rights-of-way for said project or part thereof after he has received from the States, political subdivisions thereof, or responsible local agencies benefited the present estimated cost of said lands, easements, and rights-of-way, less one-half the amount by which the estimated cost of these lands, easements, and rights-of-way exceeds the estimated construction cost corresponding thereto: *And provided further,* That the Secretary of War shall determine the proportion of the present estimated cost of said lands, easements, and rights-of-way that each State, political subdivision thereof, or responsible local agency should contribute in consideration for the benefits to

be received by such agencies: *And provided further*, That whenever not less than 75 per centum of the benefits as estimated by the Secretary of War of any project or useful part thereof accrue to lands and property outside the State in which said project or part thereof is located provision (c) of this section shall not apply thereto; nothing herein shall impair or abridge the powers now existing in the Department of War with respect to navigable streams: *And provided further*, That nothing herein shall be construed to interfere with the completion of any reservoir or flood control work authorized by the Congress and now under way.

SEC. *4.* The consent of Congress is hereby given to any two or more States to enter into compacts or agreements in connection with any project or operation authorized by this Act for flood control or the prevention of damage to life or property by reason of floods upon any stream or streams and their tributaries which lie in two or more such States, for the purpose of providing, in such manner and such proportion as may be agreed upon by such States and approved by the Secretary of War, funds for construction and maintenance, for the payment of damages, and for the purchase of rights-of-way, lands, and easements in connection with such project or operation. No such compact or agreement shall become effective without the further consent or ratification of Congress, except a compact or agreement which provides that all money to be expended pursuant thereto and all work to be performed thereunder shall be expended and performed by the Department of War, with the exception of such reasonable sums as may be reserved by the States entering into the compact or agreement for the purpose of collecting taxes and maintaining the necessary State organizations for carrying out the compact or agreement.

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SEC. 5. That pursuant to the policy outlined in Sections 1 and 3, the following works of improvement, for the benefit of navigation and the control of destructive flood waters and other purposes, are hereby adopted and authorized to be prosecuted, in order of their emergency as may be designated by the President, under the direction of the Secretary of War and supervision of the Chief of Engineers in accordance with the plans in the respective reports and records hereinafter designated: *Provided*, That penstocks or other similar facilities, adapted to possible future use in the development of adequate electric power may be installed in any dam herein authorized when approved by the Secretary of War upon the recommendation of the Chief of Engineers ....

SEC. 8. Nothing in this Act shall be construed as repealing or amending any provision of the Act entitled "An Act for the control of floods on the Mississippi River and its tributaries, and for other purposes," approved May 15, 1928, or any provision of any law amendatory thereof. The authority conferred by this Act and any funds appropriated pursuant thereto for

expenditure are supplemental to all other authority and appropriations relating to the departments or agencies concerned, and nothing in this Act shall be construed to limit or retard any department or agency in carrying out similar and related activities heretofore or hereafter authorized, or to limit the exercise of powers conferred on any department or agency by other provisions of law* carrying out similar and related activities.

SEC. 9. The sum of $310,000,000 is authorized to be appropriated for carrying out the improvements herein and the sum of $lO,OOO,OOO is authorized to be appropriated and expended in equal amounts by the Departments of War and Agriculture for carrying out any examinations and surveys provided for in the Act and other Acts of Congress: *Provided,* That not more than $50,000,000 of such sum shall be expended during the fiscal year ending June 30, 1937: *Provided further,* That for the relief of unemployment, in addition to the regular appropriation, persons may be employed on such works of improvement and the compensation of said persons when so employed shall be paid from the funds available to the Works Progress Administration for the continuance of relief and work relief on useful projects.

*So in original.

Notes

Author's Note

1. Flood Control Act of 1936, 22 June 1936, in *U.S. Statutes at Large,* vol. 49, p. 1570 (hereafter cited as 49 *Stat.* 1570).

2. Robert de Roos and Arthur A. Maass, "The Lobby That Can't Be Licked," *Harpers* 199 (August 1949): 23; William E. Leuchtenburg, *Flood Control Politics: The Connecticut River Valley Problem, 1927-1950* (Cambridge: Harvard University Press, 1953), pp. 96-105.

Chapter I

1. The *Gibbons* v. *Ogden* case and the whole issue of internal improvements are discussed in George Dangerfield, *The Awakening of American Nationalism, 1815-1828* (New York: Harper & Row, 1965), pp. 6-7, 16-20, 196-200. The role of the Corps of Engineers in these activities is described in W. Stull Holt, *Office of the Chief of Engineers of the Army: Its Non-Military History, Activities, and Organization* (Baltimore: Johns Hopkins University Press, 1923); and Edward L. Pross, "A History of Rivers and Harbors Appropriations Bills, 1866-1933," Ph.D. dissertation, Ohio State University, 1938.

2. See the statement of Royal Copeland in U.S., Congress, *Congressional Record* (hereafter cited as *Cong. Rec.*), 74th Cong., 2d sess., 28 April 1936, p. 6290.

3. Frank J. Trelease, "Water Law," in Ven T. Chow, ed., *Handbook of Applied Hydrology: A Compendium of Water-Resources Technology* (New York: McGraw-Hill Book Co., 1983), sect. 27, p. 22.

4. The most extensive discussion of these acts is found in Robert W. Harrison, *Alluvial Empire: A Study of State and Local Efforts Toward Land Development in the Alluvial Valley of the Lower Mississippi River* (Little Rock, AR: Delta Fund in cooperation with Economic Research Service of U.S. Department of Agriculture, distributed by Pioneer Press, 1961), pp. 67-70.

5. Ibid., p. 59; Richard K. Cralle, ed., *Reports and Public Letters of John C. Calhoun* (New York: Russell & Russell, 1968 [1856]), pp. 273-283; Clyde N. Wilson, ed., *The Papers of John C. Calhoun,* 18 vols. (Columbia, SC: University of South Carolina Press and South Carolina Department of Archives and History, 1983), 15: 444.

6. Martin Reuss, "Andrew A. Humphreys and the Development of Hydraulic Engineering: Politics and Technology in the Army Corps of Engineers, 1850-1950," *Technology and Culture* 26 (January 1985): 1-33.

7. William G. Hoyt and Walter B. Langbein, *Floods* (Princeton, NJ: Princeton University Press, 1955), pp. 228-230; Pittsburgh Flood Control Commission, *Report of the Flood Control Commission of Pittsburgh, Pennsylvania* (hereafter cited as *Report*) (Pittsburgh: The Commission, 1912), pp. 6-15.

8. Arthur D. Frank, *The Development of the Federal Program of Flood Control on the Mississippi River* (hereafter cited as *Flood Control on the Mississippi)* (New York: Columbia University Press, 1930), pp. 45-74.

9. Ibid., pp. 28-44.

10. Ibid., pp. 140-141, 143.

11. Ibid., p. 143.

12. U.S., Congress, *Cong. Rec.,* 64th Cong., 1st sess., 10 May 1916, p. 7764.

13. Ibid., p. 7768.

14. Frank, *Flood Control on the Mississippi,* pp. 147-153; Harrison, *Alluvial Empire,* pp. 129-131.

Chapter II

1. Pittsburgh Flood Control Commission, *Report*, pp. 11-13; Maurice Knowles, "Flood: Pittsburgh's Problem and Its National Significance," *The Survey* 27 (3 February 1912): 1699-1705.

2. Hoyt and Langbein, *Floods*, pp. 359-360; Leland R. Johnson, *The Headwaters District: A History of the Pittsburgh District, U.S. Army Corps of Engineers* (Pittsburgh: U.S. Army Engineer District, 1979), pp. 187-196.

3. Samuel P. Hays, *Conservation and the Gospel of Efficiency: The Progressive Conservation Movement, 1890-1920* (Cambridge: Harvard University Press, 1959), pp. 91-121.

4. Ibid., pp. 105-108.

5. Ibid., pp. 109-114, 203-205.

6. U.S., Congress, *Cong. Rec.*, 64th Cong., 1st sess., 3 February 1961, pp. 2068-90.

7. Ibid., p. 2073.

8. Ibid., p. 2090.

9. Ibid., 10 May 1916, p. 7779.

10. Congress regarded the Sacramento River problem as another special case, and in 1893 the California Debris Commission was created to provide federal aid. See Joseph L. Hagwood, *The California Debris Commission* (Washington, DC: U.S. Army Corps of Engineers, 1981), pp. 28-30.

11. Martin Reuss and Paul K. Walker, *Financing Water Resources Development: A Brief History* (Washington, DC: U.S. Army Corps of Engineers, 1983), pp. 14-15; Hays, *Conservation and the Gospel of Efficiency,* pp. 92-94.

12. U.S., *An Act to Provide for the Control of the Floods of the Mississippi River and of the Sacramento River, California, and for Other Purposes*, 39 *Stat.* 948, 1 March 1917; Harrison, *Alluvial Empire*, pp. 132-133.

13. U.S., *An Act to Provide for the Control of Floods on the Mississippi River*, 39 *Stat.* 950.

14. Donald B. Johnson and Kirk H. Porter, eds., *National Party Platforms, 1840-1972* (Urbana: University of Illinois Press, 1973), pp. 149, 160, 171, 181, 186, 200.

15. Hays, *Conservation and the Gospel of Efficiency*, pp. 81, 239-240; Beatrice H. Holmes, *A History of Federal Water Resources Programs, 1800-1960*, Miscellaneous Pubs no. 1233 (Washington, DC: U.S. Department of Agriculture Economic Research Service, June 1972), pp. 8-9, 11.

16. U.S., Congress, *Cong. Rec.*, 68th Cong., 2d sess., 27 February 1925, pp. 4803-09.

17. U.S., Congress, House, *Estimate of Cost of Examinations, Etc., of Streams Where Water Power Appears Feasible*, House Doc. 308, 69th Cong., 1st sess., 1926, pp. 3-4. The report was authorized by Section 3 of the Rivers and Harbors Act of 3 March 1925, 43 *Stat.* 1186.

18. U.S., Army, Corps of Engineers, *Annual Report of the Chief of Engineers, Fiscal Year 1927* (Washington, DC: Government Printing Office, 1927), part 1, p. 6.

19. Leuchtenburg, *Flood Control Politics*, p. 31.

20. U.S., Army, Corps of Engineers, *Annual Report of the Chief of Engineers, Fiscal Year 1929* (Washington, DC: Government Printing Office, 1929), part 1, p. 1885.

21. Major F.S. Besson, "Maximum Flood Control Prediction," *The Military Engineer* 25 (September-October 1933): 423-426.

22. U.S., Congress, House, *Tennessee River and Tributaries, North Carolina, Tennessee, Alabama, and Kentucky*, House Doc. 328, 71st Cong., 2d sess., 1930; Preston J. Hubbard, *Origins of the TVA: The Muscle Shoals Controversy, 1920-1932* (Nashville: Vanderbilt University Press, 1961), pp. 173-174, 251-252, 275-276, 291-295; Herman Pritchett, *The Tennessee Valley Authority* (Chapel Hill: University of North Carolina Press, 1943), pp. 11-29.

23. Frank, *Flood Control on the Mississippi*, p. 192.

24. Pete Daniel, *Deep'n as It Come: The 1927 Mississippi River Flood* (New York: Oxford University Press, 1977); American Red Cross, *The Mississippi Valley Flood Disaster of 1927* (Washington, DC: American Red Cross, 1928), pp. 1-21; Frederic A. Delano, "The Report of the Committee on Mississippi Flood Control Appointed by the United States Chamber of Commerce," *Annals of the American Academy of Political and Social Science* 135 (January 1928): 25-33.

25. Leuchtenburg, *Flood Control Politics*, pp. 27-29; Hoyt and Langbein, *Floods*, pp. 327-373.

26. *New York Times*, 7 November 1927, p. 1.

27. *Baltimore Sun*, 7 November 1927.

28. Leuchtenburg, *Flood Control Politics*, pp. 30-32.

29. Section 2, Flood Control Protection Act of 1928, 15 May 1928, 45 *Stat.* 534; Frank, *Flood Control on the Mississippi*, pp. 206-243.

30. Johnson and Porter, *National Party Platforms*, pp. 274-275, 287.

31. Frank, *Flood Control on the Mississippi*, pp. 180-181.

32. Herbert Hoover, *The Memoirs of Herbert Hoover: The Cabinet and the*

Presidency, 1920-1933 (New York: Macmillan, 1952), pp. 226-234; Edgar E. Robinson and Vaughn D. Bornet, *Herbert Hoover: President of the United States* (Stanford, CA: Hoover Institution Press, 1975), pp. 59-63; Richard Lowitt, *George W. Norris: The Persistence of a Progressive* (Urbana: University of Illinois Press, 1971), p. 458.

Chapter III

1. William E. Leuchtenburg, *Franklin D. Roosevelt and the New Deal* (New York: Harper & Row, 1963), pp. 11-12, 164-165, 339-340; James M. Burns, *Roosevelt: The Lion and the Fox* (New York: Harcourt, Brace and World, 1956), pp. 142-143, 171-185, 242-246.

2. The two best works on Roosevelt's attitudes toward natural resources and conservation are A.L. Riesch Owen, *Conservation Under FDR* (New York: Praeger Publishers, 1983); and Edgar B. Nixon, ed., *Franklin D. Roosevelt and Conservation,* 2 vols. (Hyde Park, NY: Franklin D. Roosevelt Library, 1957).

3. Owen, *Conservation Under FDR*, pp. 5-12, 15-16, 106-112, 128-135.

4. Franklin D. Roosevelt, *Looking Forward* (New York: John Day Co., 1933), p. 64.

5. Reforestation projects could be started quickly and were thus better suited to the temporary nature of the New Deal's early work relief program.

6. Franklin D. Roosevelt, *The Complete Presidential Press Conferences of Franklin D. Roosevelt* (hereafter cited as *Presidential Press Conferences*), 16 vols. (New York: DeCapo Press, 1972).

7. Nixon, *FDR and Conservation*, 1: 32-33.

8. Frank Freidel, *Franklin D. Roosevelt: The Ordeal* (Boston: Little, Brown & Co., 1953), pp. 225-226.

9. Nixon, *FDR and Conservation*, 2: 132-133; Lowitt, *George W. Norris*, pp. 567-568.

10. Samuel Rosenman, ed., *The Public Papers and Addresses of Franklin D. Roosevelt*, 13 vols. (New York: Random House, 1938-1945), 2: 80, 122, 297.

11. In 1933, 1934, and 1935 the federal government spent $111.3 million on flood control and $39.0 million on the TVA, compared to $261.2 million on rivers and harbors navigation. The Departments of Interior and Agriculture spent $192.9 million on conservation programs during this same three-year period, and $1.1 billion was spent on roads and highways. Figures from Owen, *Conservation Under FDR*, tables B-1a, B-1b, and B-3, pp. 242-247.

12. Marion Clawson, *New Deal Planning: The National Resources Planning Board* (Baltimore: Johns Hopkins University Press, 1981), pp. 42-43.

13. See, for example, the correspondence between the White House and the congressmen from the Wabash River basin in Indiana, in Official File (OF) 132, Franklin D. Roosevelt Papers, Franklin D. Roosevelt Library, Hyde Park, NY (hereafter cited as FDR Papers).

14. There is no book or scholarly article on Wilson. T. Harry Williams' discussion of him focuses only on the 1928 election. His obituary in the *New York Times* never mentioned the 1936 Flood Control Act, and the *New Orleans*

Times-Picayune said only that "he was an advocate of flood control and drainage measures." T. Harry Williams, *Huey Long* (New York: Alfred A. Knopf, 1969), pp. 248-250, 275-278; *New York Times,* 25 February 1947, p. 25; *New Orleans Times-Picayune,* 24 February 1947.

15. Louis M. Howe to Honorable Riley J. Wilson, 23 May 1933, OF 132, FDR Papers.

16. Colonel Marvin McIntyre to President, 12 Dec. 1933, OF 132, FDR Papers.

17. Lowitt, *George W. Norris,* pp. 34-35, 190-216, 260-271, 396-397.

18. Tennessee Valley Authority Act of 1933, 18 May 1933, 48 *Stat.* 58.

19. U.S., Congress, *Cong. Rec.*, 73d Cong., 2d sess., 4 January 1934, p. 56; Richard Lowitt, *George W. Norris: The Triumph of a Progressive, 1933-1944* (Urbana: University of Illinois Press, 1978), pp. 44-45, 48-49.

20. Nixon, *FDR and Conservation*, 1: 238-239.

21. Ibid., pp. 240-241.

22. Senator Clarence Dill to President Franklin D. Roosevelt, 29 Dec. 1933, OF 132, FDR Papers; Nixon, *FDR and Conservation*, 1: 234-235.

23. Rosenman, *Public Papers of FDR*, 3: 11.

24. Nixon, *FDR and Conservation*, 1: 237.

25. Franklin D. Roosevelt to Senator Clarence Dill, 9 Jan. 1934, in ibid., p. 240.

26. H.M. Kannee to Colonel McIntyre, 26 Jan. 1934, OF 132, FDR Papers.

27. Roosevelt, *Presidential Press Conferences*, 3: 120.

28. U.S., Congress, *Cong. Rec.*, 73d Cong., 1st sess., 1 February 1934, p. 1737, and 2 Feb. 1934, p. 1854.

29. U.S., Congress, House, *Development of Rivers in the United States: Preliminary Report of the President's Committee on Water Flow*, House Doc. 395, 73d Cong., 2d sess., 1934.

30. Ibid., p. 9.

31. Ibid.

32. Ibid., pp. 10-13.

33. For a somewhat different and more critical perspective on Dern's letter, see Arthur Maass, *Muddy Waters: The Army Engineers and the Nation's Rivers* (Cambridge: Harvard University Press, 1951), pp. 72-74.

34. U.S., Congress, *Cong. Rec.*, 73d Cong., 1st sess., 13 April 1934, p. 6603.

35. Ibid., 17 April 1934, p. 6741.

36. Ibid., p. 6743.

37. Ibid., p. 6747.

38. Ibid., 11 May 1934, p. 8611.

39. Ibid., p. 8612.

40. Roosevelt, *Presidential Press Conferences*, 3: 150-151.

41. Ibid., p. 151.

42. Ibid., pp. 151-152.

43. Ibid., pp. 152-154.

44. Memo for the President, 16 Feb. 1934, subj.: Representative Henry T. Rainey, Speaker of the House, OF 132, FDR Papers.

45. Nixon, *FDR and Conservation*, 1: 286-287.
46. Ibid., p. 287.
47. Maass, *Muddy Waters*, pp. 76-77; Nixon, *FDR and Conservation*, 1: 287*n*.
48. Memo for the President, 11 June 1934, OF 132, FDR Papers.

Chapter IV

1. Executive Order 6777, 30 June 1934, in Rosenman, *Public Papers of FDR*, 3: 335-336.
2. Jean Christie, *Morris Llewellyn Cooke: Progressive Engineer* (New York: Garland Publishing, 1983), pp. 141-180. On Cooke's plan for rural electrification, see Morris L. Cooke to Secretary Harold L. Ickes, 12 Dec. 1933, Ickes File, Box 263, Morris L. Cooke Papers, Franklin D. Roosevelt Library. Arthur M. Schlesinger, Jr., *The Age of Roosevelt: The Politics of Upheaval* (Boston: Houghton Mifflin Co., 1960), pp. 380-383; Clawson, *New Deal Planning*, p. 115; Interview, Martin Reuss with Gilbert F. White, University of Colorado, 25 June 1985, Oral History Archives, Office of History, U.S. Army Corps of Engineers, Fort Belvoir, VA (hereafter cited as White interview), p. 13.
3. U.S., Public Works Administration, *Report of the Mississippi Valley Committee of the Public Works Administration* (Washington, DC: Government Printing Office, 1934); Christie, *Morris Llewellyn Cooke*, pp. 145-160.
4. U.S., National Resources Committee, *Drainage Basin Problems and Programs* (Washington, DC: Government Printing Office, 1937).
5. U.S., National Resources Board, *A Report on National Planning and Public Works in Relation to Natural Resources and Including Land Use and Water Resources With Findings and Recommendations* (Washington, DC: Government Printing Office, 1934), pp. 2-5; Minutes of First Meeting of the Water Resources Committee, 24 July 1935, pp. 4-6, Records of the National Resources Planning Board, Frederic A. Delano Files, Box 3, Record Group (RG) 187, National Archives and Records Administration (NARA), Washington, DC.
6. Rosenman, *Public Papers of FDR*, 4: 61.
7. Leuchtenburg, *FDR and the New Deal*, pp. 124-125; Schlesinger, *The Politics of Upheaval*, pp. 343-351.
8. U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 22 August 1934, pp. 14086-87. The House action particularly galled the NRC's Charles W. Eliot, who said that only two Ways and Means Committee members voted for the NRC. He later received letters from six members, each one assuring him that they were one of the two supporters. Charles W. Eliot to Joseph P. Harris, 25 June 1936, Records of the National Resources Planning Board, Frederic A. Delano Files, Box 1, RG 187, NARA.
9. National Industrial Recovery Act of 1933, 48 *Stat.* 200, Title II, sect. 202.
10. Clawson, *New Deal Planning*, p. 6; Barry D. Karl, *Charles E. Merriam*

and the Study of Politics (Chicago: University of Chicago Press, 1971), pp. 241, 252-253.

11. White interview, pp. 19, 23.

12. U.S., Congress, House, *Report on H.R. 6803, Funds for the Prosecution of Works for Flood Control and Protection Against Flood Disasters*, House Doc. 486, 74th Cong., 1st sess., 1935, p. 1.

13. U.S., Congress, House, Committee on Flood Control, *Hearings Before the Committee on Flood Control on H.R. 6803: A Bill to Authorize Funds for the Prosecution of Works for Flood Control and Protection Against Flood Disasters, March 22 and 23, and April 2, 1935* (Washington, DC: Government Printing Office, 1935), p. 1.

14. The Corps report contained a map of the United States showing the location of all 1,600 projects, which so impressed Senator Huey Long (D-Louisiana) that he had it reprinted in the *Congressional Record*. See U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 4 April 1934, p. 5016.

15. U.S., Congress, House, Committee on Flood Control, *Hearings Before the Committee on Flood Control on H.R. 6803*, p. 27.

16. Ibid., pp. 14-15. The priority group 1-3 figures add up to only $602 million, but the figure used by Congressman West in the hearings was $604 million.

17. Ibid., pp. 16, 18.

18. Ibid., p. 5.

19. Ibid., pp. 5, 18.

20. Ibid., p. 9.

21. Ibid., pp. 19, 24.

22. U.S., Congress, House, *Report on H.R. 6803*, House Doc. 486, pp. 1-2.

23. Riley J. Wilson to Honorable Franklin D. Roosevelt, 15 Apr. 1935, OF 132, FDR Papers.

24. U.S., Congress, House, *H.R. 8455, A Bill Authorizing the Construction of Public Works on Rivers and Harbors for Flood Control and for Other Purposes*, 74th Cong., 1st sess., 1935, p. 2, sect. 2.

25. Ibid.

26. U.S., Congress, House, Committee on Flood Control, *Report on H.R. 8455, Construction of Certain Public Works on Rivers and Harbors for Flood Control*, House Doc. 1223, 74th Cong., 1st sess., 1935.

27. Ibid., p. 2.

28. Franklin D. Roosevelt to Honorable Riley J. Wilson, Chairman, Committee on Flood Control, 16 June 1934, OF 132-A, FDR Papers.

29. U.S., Congress, House, Committee on Flood Control, *Hearings Before the Committee on Flood Control on H.R. 6803*, p. 21.

30. U.S., Congress, Senate, Committee on Commerce, *Report on S. 3531, To Amend the Flood Control Act of May 15, 1928*, S.R. 1662, 74th Cong., 2d sess., 1936, pp. 3-4.

31. Roosevelt, *Presidential Press Conferences*, 3: 150-151.

32. A complete list of the projects appears in U.S., Congress, *Cong. Rec.*, 22 August 1935, pp. 14181-86.

33. Under Executive Order 7065 (7 June 1935), the National Resources Board was reconstituted as the National Resources Committee and the Water Planning Committee was renamed the Water Resources Committee. See Clawson, *New Deal Planning*, pp. 46-47.

34. Memorandum, Daniel W. Bell, Acting Director, Bureau of the Budget, to the President, 20 July 1935; and attached Memorandum, FDR to Acting Director of the Bureau of the Budget, 22 July 1935. Both in OF 132, FDR Papers.

35. Hoyt and Langbein, *Floods*, pp. 379-382. The *New York Times* ran approximately 200 articles between January and August 1935 describing floods in Arkansas, Colorado, Connecticut, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Mississippi, Missouri, Nebraska, New Jersey, New Mexico, New York (71 articles), Ohio, Pennsylvania, Texas, Vermont, Virginia, West Virginia, and Wisconsin. See *New York Times Index for Year 1935* (New York: New York Times Co., 1936), pp. 988-989.

36. Congressman James B. Duffy et al., to the President, 9 July 1935, New York Flood File, OF 83, FDR Papers.

37. *New York Times*, 20 July 1935, p. 14; 22 July 1935, p. 6; 23 July 1935, p. 3; and 29 April 1936, p. 4.

38. Harry Hopkins to the President, 13 August 1935, OF 83, FDR Papers; *New York Times*, 27 July 1935, p. 14, and 2 August 1935, p. 15.

39. All the bills are listed in the U.S., Congress, *Cong. Rec., Index*, 74th Cong., 1st sess., pp. 225-226.

40. Schlesinger, *The Politics of Upheaval*, pp. 291-336; Leuchtenburg, *FDR and the New Deal*, pp. 143-162; *New York Times*, 28 August 1934, p. 1; *Washington Post*, 27 and 28 August 1934.

41. U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 22 August 1934, p. 14151.

42. Ibid., pp. 14152-54, 14179.

43. Ibid., p. 14154.

44. Ibid., p. 14177-78. Congressman Short's reference to rag doll makers and toe dancers probably refers to some of the unemployment relief projects carried out by the Roosevelt administration and Harry Hopkins' WPA theater project.

45. Ibid., pp. 14178-93.

46. Ibid., pp. 14175-76.

47. Ibid., pp. 14186-87.

48. Ibid., pp. 14188-94.

49. Ibid., pp. 14155, 14198-99.

50. *New York Times*, 24 August 1934, p. 2.

51. U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 22 August 1934, p. 14287.

52. Ibid., p. 14288.

53. Ibid., p. 14290.

54. Ibid., p. 14291.

55. Ibid., p. 14296.
56. Ibid.
57. Ibid., p. 14303.
58. Ibid. According to the *New York Times*, many of Tydings' colleagues later said the speech "attained the topmost heights of congressional humor" and by the end of the three-hour address "senators whose claims were being ridiculed made humorous interruptions and sped Mr. Tydings along." *New York Times*, 26 August 1934, p. 2.
59. U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 22 August 1934, p. 14303.
60. Ibid., 23 August 1934, p. 14305.

Chapter V

1. U.S., Department of the Interior, Geological Survey, *The Floods of March 1936: Water Supply Paper 799* (Washington, DC: Government Printing Office, 1937), p. 1.
2. American National Red Cross, *Spring Floods and Tornadoes, 1936* (Washington, DC: American Red Cross, 1938), pp. 11-15.
3. *New York Times*, 12 March 1936, p. 5; 13 March 1936, p. 3; 19 March 1936, pp. 14-15; 20 March 1936, p. 15; 26 March 1936, p. 12; 27 March 1936, p. 8; 28 March 1936, p. 6; and 29 March 1936, p. 7.
4. American National Red Cross, *Spring Floods and Tornadoes, 1936*, pp. 17-21; *New York Times*, 18 March 1936, pp. 1-2; 19 March 1936, p. 1; 20 March 1936, p. 1; 21 March 1936, p. 1; 25 March 1936, p. 8; and 28 March 1936, p. 12.
5. American National Red Cross, *Spring Floods and Tornadoes, 1936*, pp. 20-27, 162; U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936, H.R. 8455, March 19 and 25, 1936* (Washington, DC: Government Printing Office, 1936), p. 11; *Washington Post*, 18 March 1936, p. 1; 19 March 1936, p. 1; 20 March 1936, p. 1; and 21 March 1936, p. 1; *Washington Sunday Star*, 29 March 1936, Gravure sect. pp. 1-2.
6. *New York Times*, 22 March 1936, sect. IV, p. 8.
7. *Washington Evening Star*, 23 April and 31 May 1936.
8. *New York Times*, 30 March 1936, p. 8.
9. Ibid., 24 March 1936, p. 13.
10. Ibid., 30 March 1936, p. 8.
11. "Mopping Up the Flood," *Business Week*, 4 April 1936, p. 20.
12. *Washington Evening Star*, 24 April 1936, p. A2.
13. *Washington Evening Star*, 23 March 1936, p. A1.
14. No biography was written about Copeland. For a detailed obituary, see *New York Times*, 18 June 1938, p. 1.
15. An unflattering portrait of Copeland as a "cunning" servant of "the vested interests in business and politics" appears in Max Lerner, "Tammany's Last Stand," *The Nation* 199 (11 September 1937): 255-257. U.S., Congress, *Cong. Rec.*, 73d Cong., 1st sess., 2 May 1933, p. 2679; *New York Times*, 26 April 1936, p. 12.

16. *New York Times*, 26 April 1936, p. 30; U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 86-87, 210-211, 304-305.

17. Leuchtenburg, *Flood Control Politics*, pp. 67, 94-95, 97.

18. U.S., Congress, *Cong. Rec.*, 75th Cong., 3d sess., 9 June 1938, p. 8619. For a discussion of the New Deal era electric power controversy, see Philip J. Funigiello, *Toward a National Power Policy: The New Deal and the Electric Utility Industry, 1933-1941* (Pittsburgh: University of Pittsburgh Press, 1973).

19. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, p. 6.

20. Ibid., pp. 7-10.

21. Ibid., pp. 11, 22, 34, 54, 62, 195-198.

22. U.S., Congress, *Cong. Rec.*, 74th Cong., 2d sess., 2 April 1936, p. 4780.

23. Ibid.

24. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 22-23, 35, 62, 87-88, 90-91.

25. Ibid., pp. 27, 200.

26. Ibid., pp. 22, 27, 122-126, 210-211, 237, 240, 242, 304-305, 336. The provision for penstocks appears in Section 5 of the act.

27. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 40, 230-231; Leuchtenburg, *Flood Control Politics*, pp. 54, 92-94, 98-99; Homer Cummings, Attorney General, to FDR, 2 Aug. 1937, with attached memo and report from Oswald Ryan, 30 July 1937, OF 132, FDR Papers.

28. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 11, 25, 44, 83-86, 100, 119, 209.

29. Ibid., pp. 231-234.

30. Ibid., pp. 264-265, 276-277.

31. See Section 3(c) of the 1936 Flood Control Act. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 28-29, 38, 84-85, 323.

32. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 333-334; Leuchtenburg, *Flood Control Politics*, pp. 49-50, 82-109.

33. U.S., Congress, Senate, Committee on Commerce, *Confidential Hearings on Flood Control Act of 1936*, pp. 60-61.

34. Ibid., pp. 196-197.

35. Ibid., p. 201.

36. Ibid., p. 298.

37. Ibid., pp. 55-57, 89.

38. Ibid., p. 312.

39. Ibid., p. 321.

40. Ibid., pp. 8, 334.

41. Telegram, H.A. Wallace and M.L. Cooke to the President (through White House), 25 Mar. 1936, OF 132, FDR Papers.

42. Radio Message (from USS *Dickerson*), Roosevelt to White House, 26 Mar. 1936, OF 132, FDR Papers.

43. Radiogram, Eliot to Frederic A. Delano (c/o USS *Potomac*), 28 Mar. 1936; and Radiogram, Roosevelt to Secretaries of War, Interior, and Agriculture, 29 Mar. 1936. Both in OF 132, FDR Papers.

44. Telegram, Early to the President, 28 Mar. 1936, OF 132, FDR Papers.

45. Naval Message, George H. Dern, Harold L. Ickes, and Henry A. Wallace to the President, 31 Mar. 1936, OF 132, FDR Papers.

46. Water Resources Committee to Mr. Delano, 2 Apr. 1936, OF 132, FDR Papers.

47. Charles W. Eliot to the President, 13 Apr. 1936, OF 132, FDR Papers.

48. Secretary of War to Chairman, National Resources Committee, quoted in Maass, *Muddy Waters*, p. 83.

49. Nixon, *Roosevelt and Conservation*, 1: 516-517.

50. *New York Times*, 26 March 1936, p. 12; 27 March 1936, p. 11; 29 March 1936, part IV, p. 7; 31 March 1936, p. 1; 1 April 1936, p. 18; 2 April 1936, p. 12; and 3 April 1936, p. 1.

51. Roosevelt, *Presidential Press Conferences*, 7: 215-217.

52. Ibid., p. 216.

53. U.S., Congress, *Cong. Rec.*, 74th Cong., 1st sess., 26 March 1935, p. 4389; Memorandum, FDR for Senator Robinson, 20 Apr. 1936, OF 1092, FDR Papers.

54. U.S., Congress, *Cong. Rec.*, 74th Cong., 2d sess., 12 April 1936, p. 7051; ibid., 21 April 1936, pp. 5774, 5776; and 21 May 1936, pp. 7732-35.

55. Roosevelt, *Presidential Press Conferences*, 7: 228.

56. U.S., Congress, *Cong. Rec.*, 74th Cong., 2d sess., 28 April 1936, p. 6290.

57. Abel Wolman to Mr. Delano, 29 Apr. 1936, OF 132, FDR Papers.

58. Memorandum, Charles W. Eliot for Mr. Delano, 29 Apr. 1936, OF 132, FDR Papers.

59. Draft Amendments—H.R. 8455 attached to Memorandum, Eliot to Delano, 29 Apr. 1936, OF 132, FDR Papers.

60. Memorandum, Eliot for Delano, 29 Apr. 1936.

61. Memorandum, Frederic A. Delano for Secretary Ickes, 30 Apr. 1936, with accompanying memos and draft amendments (President's copy), OF 1092; and FDR to Senator Robinson, 1 May 1936, OF 132. Both in FDR Papers.

62. Mayor of Binghamton to Franklin D. Roosevelt, 5 May 1936, OF 132, FDR Papers.

63. Roosevelt, *Presidential Press Conferences*, 7: 236-237.

64. Carl Hayden to Marvin H. McIntyre, 1 May 1936; and M.H. McIntyre to Sen. Carl Hayden, 11 May 1936. Both in Little Waters File, OF 2450, FDR Papers.

65. Ickes letter to FDR, which accompanied a copy of *Little Waters*, appears in Nixon, *Roosevelt and Conservation*, 1: 460-461. This publication appeared as *Little Waters: A Study of Headwater Streams and Other Little Waters, Their Use and Relations to the Land*, U.S., Congress, Senate, 74th

Cong., 2d sess., Sen. Doc. 198. On Cooke's interest in *Little Waters*, see Morris L. Cooke to the President, 16 Jan. 1936, and Henry Kannee to Cooke, 10 Feb. 1936, both in Little Waters File, OF 2450, FDR Papers.

66. Morris L. Cooke to the President, 5 May 1936; FDR to Cooke, 6 May 1936; and Cooke to the President, 6 May 1936. All in Rural Electrification-1936, OF 1570, FDR Papers.

67. Roosevelt, *Presidential Press Conferences*, 7: 250-251.

68. *New York Times*, 13 May 1936, p. 5.

69. *New York Times*, 16 May 1936, p. 1.

70. U.S., Congress, *Cong. Rec.*, 74th Cong., 2d sess., 20 May 1936, p. 7574.

71. Ibid., pp. 7575, 7577-78.

72. *New York Times*, 19 May 1936, p. 19.

73. U.S., Congress, *Cong. Rec.*, 74th Cong., 2d sess., 21 May 1936, pp. 7696, 7703.

74. Ibid., pp. 7680-81.

75. Ibid., p. 7705.

76. Ibid., pp. 7706-10.

77. Ibid., 3 June 1936, pp. 8851-60, 8862-63.

78. Ibid., 15 June 1936, p. 9443.

79. Herbert H. Lehman to the President, 8 May 1936; and FDR to Hon. Herbert H. Lehman, 23 May 1936. Both in OF 132, FDR Papers.

80. Gen. E.M. Markham to M.H. McIntyre, 27 May 1936; and M.H.M., Memo for the Files, 27 May 1936. Both in War Department Files, OF 25n, FDR Papers.

81. FDR to Director of the Budget, 2 June 1936, Little Waters File, OF 2450, FDR Papers.

82. FDR to R.F. [Rudolph Foster], 16 June 1936, with undated attachments, OF 132, FDR Papers.

83. Telegrams, dtd 19-22 June 1936, OF 132, FDR Papers.

84. F.H. Truitt, Chairman, Flood Control Committee, Binghamton Chamber of Commerce, to Honorable Franklin D. Roosevelt, 23 June 1936, OF 132, FDR Papers.

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1. Clawson, *New Deal Planning*, pp. 203-204, 225-226, 237-242.

2. The most current summary compendium of water resources legislation and policies is U.S. Army Corps of Engineers, *Digest of Water Resources and Authorities* (Washington, DC: U.S. Army Corps of Engineers, 1983).

3. The most comprehensive discussion of water resources legislation and programs since 1936 can be found in Holmes, *A History of Federal Water Resources Programs, 1800-1960*, pp. 13-43; and her companion volume, *History of Federal Water Resources Programs and Policies, 1961-70*, Miscellaneous Pubs no. 1379 (Washington, DC: USDA, Economics, Statistics, and Cooperatives Service, Government Printing Office, 1979).

4. John R. Mather, *Water Resources: Distribution, Use, and Management*

(New York: John Wiley and Sons, 1984), pp. 301-302.

5. See for example, Commission on Organization of the Executive Branch of the Government, *Task Force Report on Water Resources Projects* (Washington, DC: Government Printing Office, 1949), pp. 10-20; and President's Water Resources Policy Commission, *A Water Policy for the American People*, vol. 1, *General Report* (Washington, DC: Government Printing Office, 1950), p. 147.

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HQ AR003101-HQ AR003128

DEPARTMENT OF THE ARMY
U. S. Army Corps of Engineers
Washington, D. C. 20314-1000

CECW-ON

ER 1130-2-435

Regulation
No. 1130-2-435

30 December 1987

Project Operation
Preparation of Project Master Plans

Supplementation of this regulation is permitted but not required by divisions. If supplements are prepared, the DIVCDR will furnish one copy to CDRUSACE (CECW-ON) WASH DC 20314-1000 for review and comment at least 30 days prior to issuing the supplement.

1. Purpose. This regulation provides policy and guidance for the preparation of Master Plans for the U. S. Army Corps of Engineers Civil Works.

2. Applicability. This regulation is applicable to all HQUSACE elements and all field operating activities having Civil Works responsibilities.

3. References. See Appendix A.

4. Definitions. The following definitions are to be consistently applied throughout the master plan preparation. Use of unique terms applicable to a particular master plan will be defined in that report.

a. Master Plan. The document guiding the use and development of the natural and manmade resources of a given project or group of projects.

b. Operational Management Plan (OMP). A management action document that describes in detail how resource objectives and concepts prescribed in the master plan will be implemented and achieved. (ER 1130-2-400).

c. General Plan. The plan required, pursuant to the Fish and Wildlife Coordination Act (reference Appendix A, paragraph 5) for lands and waters where the fish and wildlife resources are to be developed and managed by another agency, and for authorized mitigation lands managed by the Corps. Plans will be approved jointly by the Secretary of the Army, the Secretary of the Interior, and the head of the State Fish and Wildlife agency. A General Plan is not necessary when operation and management of the project provides for fish and wildlife incidental to other Corps activities.

d. Land Allocation. The identification and documentation of lands at Civil Works projects in accordance with the authorized purposes for which they were or are to be acquired. There are four primary land allocation categories applicable to Corps projects; (1) operations (i.e. flood control, hydropower, etc.), (2) recreation, (3) fish and wildlife, and (4) mitigation.

This regulation supercedes ER 1120-2-400, 1 Nov 71 and ER 1105-2-167, 12 Apr 78.

e. Land Classification. All lands are acquired for authorized project purposes and allocated for these uses. The classification process is a further distribution of project lands by management categories which, based upon resources available and public needs, will provide for full utilization while protecting project resources.

f. Resource Plan. A narrative and graphic description which provides guidance for development and management of project resources.

g. Resource Objectives (RO). Clearly written statements that are specific to a project, or group of projects. They specify the attainable options for resource development and/or management. They must be consistent with authorized project purposes, Federal laws and directives, regional needs, resource capabilities, and expressed public desires.

h. Reevaluation. The review of an existing master plan by an interoffice/interdisciplinary team to determine if it requires supplementation or updating.

i. Project. Water resource development lands and waters for which the Corps of Engineers has administrative responsibility.

j. Supplement. An approved change to a master plan.

k. Update. A major revision of a master plan. The term "update" should not be used in the title of the new master plan. It is used in this regulation to distinguish between levels of change.

5. Policy. It is the policy of the Corps of Engineers that:

a. Master plans be developed and kept current for all Civil Works projects and other fee owned lands for which the Corps has administrative responsibility for management;

b. The master plan be an essential element in fostering an efficient and cost-effective project natural resources management program;

c. The master plan provides direction for project development and use and as such is a vital tool for the responsible stewardship of project resources for the benefit of present and future generations; and,

d. The master plan promotes the protection, conservation and enhancement of natural, cultural, and man-made resources.

6. Goals. The primary goals of the master plan are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which:

a. Provides the best possible combination of responses to regional needs, resource capabilities and suitabilities, and expressed public interests and desires consistent with authorized project purposes;

b. Contributes towards providing a high degree of recreation diversity within the region;

c. Emphasizes the particular qualities, characteristics, and potentials of the project;

d. Exhibits consistency and compatibility with national objectives and other state and regional goals and programs.

7. General.

a. Discussion. The master plan is the basic document guiding Corps of Engineers responsibilities pursuant to Federal laws (See Appendix A) to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. The master plan is a continuing and dynamic document unlike the feasibility study and the general design memorandum, which also plan for the development of resources. The master plan is a planning document anticipating what could and should happen and is flexible to changing conditions. Design functions are handled in the feature design memorandums and in contract plans and specifications. The master plan deals in concepts, not in details of design or administration. Detailed management and administration functions are handled in the operational management plan, which translates the concepts of the master plan into operational terms.

b. Requirement. Master plans are required for Civil Works projects and other fee owned lands for which the Corps of Engineers has administrative responsibility for management of natural and manmade resources. Lands may be exempted from this requirement where there is no demonstrated need or opportunity to manage them, with the division commander approval. Master plans may be prepared for projects not managed by the Corps of Engineers, such as local protection projects, at the discretion of the division commander. A current, approved master plan is necessary before any action can be taken which may restrict the range of future options. All actions by the Corps of Engineers and outgrantees must be consistent with the master plan. Prior to facility construction, renovation, or consolidation, whether to be accomplished with O&M, General, Construction, General, or SRUF accounts, such activities must be included in an approved Master Plan. These activities will not be included in budget submissions unless they are included in an approved master plan or in a master plan submitted to division for approval. Exceptions for special situations may be granted prior to the approval of a master plan following full coordination within the district and with division approval. The resulting changes will be incorporated into the master plan.

c. Scope of The Master Plan. The master plan may cover a single project or several, depending on what is the best for management of the resources involved. The scope, content, and organization of master plans may vary considerably from project to project depending upon a number of factors including the complexity of the project, whether a new or updated master plan, the particular needs of management personnel, innovations developed to improve utility, and other factors. Each division should coordinate with their respective districts on the scope, content, and organization of each master plan to ensure its utility and to promote cost-effectiveness in terms of initial preparation and subsequent maintenance. The master plan shall cover all resources including but not limited to fish and wildlife, vegetation, cultural, aesthetic, recreational, mineral, commercial, and outgranted lands, easements, and water.

d. Preparation. The interoffice/interdisciplinary team approach will be used for the development, reevaluation, and supplementation or updating of master plans. Teams should consist of representatives from operations (including project personnel), planning,real estate and/or other elements as appropriate. The team should also be interdisciplinary, as required by the National Environmental Policy Act, including representatives of various science and design disciplines depending upon the resources involved. Coordination with other agencies and the public shall be an integral part of the master planning process. The process shall be conducted in a manner which maximizes long term cost effectiveness of the preparation, maintenance, and implementation.

8. Planning Procedures and Requirements.

a. Conceptual Framework. The master planning process encompasses a series of interrelated and overlapping tasks involving the examination and analysis of past, present, and forecasted future environmental, socio-economic conditions and trends. Within a generalized conceptual framework, the process focuses on three primary components: (1) regional needs, (2) project resource capabilities and suitabilities, and (3) expressed public interests and desires. Within this conceptual framework, the process is directed towards achievement of the goals described in paragraph 6 of this regulation.

b. Plan of Study. To ensure that a master plan will be developed in an efficient and cost-effective manner, a plan of study will be formalized at the outset by the master plan study team. As a minimum, the plan shall identify information needs and means for obtaining, study costs, schedules, tasks, and responsibilities.

c. When to Prepare, Supplement, or Update a Master Plan.

(1) New Projects. Preparation of the master plan will be initiated as soon as possible after approval of the general design memorandum (GDM) so that approved recreation and other feature developments will become available as the project becomes operational.

(2) Existing Projects.

(a) Reevaluation. Existing project master plans will be periodically reevaluated by an interoffice/interdisciplinary team to assess the extent to which the document serves its intended purpose. The reevaluation team should examine and assess the master plan to determine if it is up-to-date, responsive to current and foreseeable regional needs, public interests and desires, communicates direction and intent, and is actually being used and followed by project management personnel.

(b) Supplementation. Master plans in need of only minor revisions and modifications will be supplemented to include corrected drawings as required. Supplements should be prepared as often as necessary to assure that the master plan continues to serve its intended purpose.

(c) Update. Master plans which no longer serve their purpose will be updated as soon as possible.

d. Coordination and Public Involvement.

(1) In-house. Draft master plans, supplements, and updates shall be coordinated with those elements which have responsibility for planning, design, development and/or management of the project.

(2) Interagency. Coordination with some agencies is required by law, executive order, or memorandum of agreement. Some of the common requirements are listed in Appendix B. Early and thorough coordination with other Federal, state, regional, and local agencies is encouraged.

(3) Public. Coordination with the general public is required in some circumstances and can be very important in identifying resources and determining public needs and desires. Public involvement and coordination should be included in the plan of study (see para 8.b). Consideration should be given not only to formal public meetings but to informal workshops, mailed brochures, and other techniques to achieve maximum coordination with a reasonable expenditure of time and funds.

(4) Congressional. Notification of congressional interests is an important part of public coordination and public involvement. They should be given early notification of formal and informal meetings as well as the availability of draft and final master plans and other master planning documents.

e. Cost Effectiveness.

(1) The Plan. The master planning process will be implemented in a manner which maximizes cost effectiveness in the preparation and maintenance of master plans. Toward this end the master plan should be concise and designed to be easily prepared, supplemented, and updated. Project field personnel, in addition to serving as team members, will be fully utilized for data collection and recommendations. Materials previously assembled for feasibility reports, environmental impact statement, the OMP or other documents will be used to the maximum extent possible to minimize effort and redundancy.

(2) The Document. The finished master plan will be a usable document. The text should be typewritten on 8 1/2 x 11" white paper when feasible with all maps, aerial photographs, or plates folded to the 8 1/2 x 11" size. The document will be assembled in a looseleaf format with the title on the front cover and the binding. Data, aerial photographs, maps, or other exhibits used in development of the master plan should be available for development of the OMP. Pages and plates changed as a result of supplementation shall be marked with the date of the revision and distributed to all holders of the master plan.

9. Master Plan Content. The following elements, at a minimum, will be included in each master plan.

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listing of pertinent project information should be provided to assist in the evaluation of future decisions concerning management of project resources. Items which may be included in the project description, if applicable, are project location, climatological data, drainage area, water storage pools, hydropower facilities, main dam, spillways, outlet works, subimpoundments, lake regulation, project visitation, summary of recreation development, etc. A description of regional influences shall be provided including a discussion of the relationship of the project to other projects and programs of other agencies.

b. Resource Objectives. Resource objectives are developed to guide future design, development and management of the resource base, natural and manmade, to obtain the greatest possible benefit through meeting the needs of the public and protecting and enhancing environmental quality. Resource objectives shall, at a minimum, consider authorized project purposes, applicable Federal laws and directives, regional needs, resource capabilities and expressed public desires.

c. Resource Analysis. Project resource analysis shall provide a review of natural resource data to determine the suitability of project lands and waters for the significant natural resource related management activities. Inventories for development of master plans, through land satellite images or other means, should identify broad categories of natural features. The features will be further defined in the OMP process. The inventories may include forest or vegetative covers, rangelands, water, environmentally sensitive areas or species and cultural, historic or archeological conditions. Only a summary of resource suitability for potential uses will be presented. Care should be taken not to violate public disclosure restrictions on archeological resources. The analysis shall provide sufficient detail to serve as the basis for subsequent land classification decisions and the development of resource objectives consistent with resource capabilities. The use of automated geographic information systems is encouraged to perform resource analysis and mapping tasks as a method of increasing efficiency and reducing long term costs.

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(4) Mitigation. Land acquired or designated in accordance with authorizing documents to off set losses associated with development of the project.

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i. Special Programs. Programs or situations not covered in other parts of the plan such as off-road vehicle use or feasibility studies for future concession developments may be identified and discussed.

10. Responsibilities.

a. Schedules. District Commanders are responsible for assuring that master plans are current. Master plans will be completed for all projects which do not have an approved master plan or for which the master plan is in need of revision within 5 years of the date of this regulation.

(1) Master plans will be reevaluated on a continuing basis to avoid

costly future updates.

(2) District 5-year schedules for master plans, supplements, and updates will be included in the annual update of the Natural Resources Management System which begins 1 December each year (ER 1130-2-414). Each annual report will include the status of plans scheduled.

b. Approval. Division Commanders are authorized to approve master plans, supplements and updates. One copy of the approved document will be submitted to CDR, USACE (CECW-ON) WASH DC 20314-1000. Normally, if the CDR USACE wishes to comment on the master plan or the division commander's endorsement, these comments will be furnished to the division commander within 30 days of receipt of the division commander's endorsement.

FOR THE COMMANDER:

Charles L. Thomas, CTC, CE

ROBERT C. LEE
Brigadier General, USA
Chief of Staff

2 Appendixes

APP A - References and
Summary of Selected Authorities

APP B - Interagency
Coordination Requirements

APPENDIX A
REFERENCES and Summary of Selected Authorities

1. Flood Control Act of 1944, Section 4, as amended (16 USC 460d). Authorizes providing facilities for public use, including recreation and conservation of fish and wildlife.

2. Public Law 86-717 (16 USC 580m and n). States a policy to develop and maintain reservoir lands so as to encourage future resources of readily available timber and to increase the value of such areas for conservation.

3. Federal Water Project Recreation Act, as amended (P.L. 89-72) (16 USC 4601-)12)et seq). Requires that full consideration be given to opportunities for recreation and fish and wildlife enhancement; that recreation planning be based on coordination of use with existing and planned Federal, state, and local recreation; and that non-Federal administration of recreation and enhancement areas be encouraged. Requires that, without cost-sharing, no facilities for recreation and fish and wildlife enhancement be provided except those justified to serve other project purposes or as needed for public health and safety. If, in the absence of a local sponsor, lands are acquired to preserve the recreation and fish and wildlife potential of the project, and if 10 years after the initial project operation there is still no loccal sponsor, the lands may be sold or used for other purposes. The views of the Secretary of the Interior on the extent to which the proposed recreation and fish and wildlife development conforms to and is in accord with the state comprehensive plan shall be included in any project report.

4. Water Resources Planning Act, as amended (42 USC 1962 et seq.). Declares a policy of encouraging the conservation, development, and utilization of water and related land resources.

5. Fish and Wildlife Coordination act, as amended (16 USC 661) et seq.). Requires that wildlife conservation receive equal consideration with other features of water-resource development programs; that proposals for work affecting any body of water be coordinated with the Fish and Wildlife Service (FWS) and the state wildlife agency; that recommendation of the FWS and the state agency be given full consideration; and that justifiable means and measures for wildlife purposes, including mitigation measures, be adopted. Requires that adequate provision be given for the use of project lands and waters for the conservation, maintenance, and management of wildlife resources, including their development and improvement. Provides that the use of project lands for wildlife management be in accordance with general plans approved jointly by Army, Interior, and the state wildlife agency.

6. Endangered Species Act, as amended (16 USC 1531 and 1536). Requires that Federal agencies shall, in consultation with FWS (or the National Marine Fisheries Service), utilize their authorities in furtherance of conserving endangered and threatened species and take such action as necessary to assure that their actions are not likely to jeopardize such species or destroy or modify their critical habitat. Sets up a procedure of coordination, assessment, and consultation.

7. National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq). Declares a national environmental policy and requires that all Federal agencies shall to the fullest extent possible use a systematic, interdisciplinary approach which integrates natural and social sciences and environmental design arts in planning and decision making; study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources; utilize ecological information in the planning and development of projects; and include an environmental impact statement in every recommendation or report on proposals for major Federal actions significantly affecting the quality of the human environment.

8. Archeological and Historic Preservation Act, as amended (16 USC 469 et seq.), ("Reservoir Salvage Act"). Provides for the preservation of historical and archeological data which might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any Federal construction projects; for coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistorical, historical or archeological data; and for expenditure of funds for recovery, protection and data preservation.

9. National Historic Preservation Act, as amended (42 USC 470 et seq.), States a policy of preserving, restoring, and maintaining cultural resources and requires that Federal agencies take into account the effect of any undertaking on any site on or eligible for the National register of Historic Places; afford the Advisory Council on Historic Preservation opportunity to comment on such undertaking; nominate eligible properties to the National Register; exercise caution in disposal and care of Federal property which might qualify for the National Register; and provide for the maintenance of Federally owned and registered sites.

10. Archeological Resources Protection Act of 1979 (16 USC 470 aa-11), Protects archeological resources and sites which are on public lands and Indian land, and fosters increased cooperation and exchange of information between governmental authorities, the professional community, and private individuals. Establishes requirements for issuance of permits by Federal land managers to excavate or remove any archeological resource located on public or Indian lands.

11. ER 200-2-2. Policy and Procedures for Implementing NEPA.

12. ER 1130-2-400. Management of Natural Resources and Outdoor Recreation at Civil Works Water Resources Projects.

13. ER 1130-2-414. Natural Resource Management System.

14. ER 1105-2-20. Project Purpose Planning Guidance.

15. ER 1165-2-400. Recreation Planning, Development, and Management Policies.

16. EM 1110-1-400. Recreation Planning and Design Criteria.

APPENDIX B
Interagency Coordination Requirements

The following table shows some of the common legal requirements for interagency coordination which may be applicable in the preparation, approval, and implementation of a master plan. It should be noted that this is not a complete list, as there are numerous other requirements which might apply in particular situations or to particular projects. Also, this list defines only minimum requirements and should not be construed to limit coordination.

SITUATION WHICH TRIGGERS THE NEED FOR COORDINATION	AGENCY OR AGENCIES INVOLVED	REFERENCES/DISCUSSION
1. Environmental Impact Statement or supplement to an EIS is prepared.	Federal, state and local government agencies.	National Environmental Policy Act (para 6); ER 200-2-2.
2. Significant changes are proposed to recreation.	National Park Service	Under the Federal Water Project Recreation Act (appendix A, para. 3) the views of Interior are incorporated into project planning. If there is a subsequent change it should be recoordinated.
3. Significant changes are proposed to fish and wildlife.	Fish and Wildlife Service and State Fish Wildlife	Same as above under the Federal Water Project Recreation Act. Also, under the Fish and Wildlife Coordination Act (appendix A, para. 5), coordination with FWS and the state agency is required. ER 1105-2-50.
4. An endangered or threatened species or designated critical habitat may be affected by a proposed action.	Fish and Wildlife Service and/or National Marine Fisheries Service	Endangered Species Act (appendix A, para 6); ER 1105-2-50.
5. An action is proposed which will result in flooding of archeological data.	National Park Service	Archeological and Historic Preservation Act (appendix A, para. 8); ER 1105-2-50.
6. An activity may cause loss or destruction of important scientific, historical, or archeological data.	National Park Service	Same as above.

7. An action that may effect any district, site, building, structure, or object that is on or is eligible for the National Register of Historic Places.	Advisory Council on Historic Preservation and State Historic Preservation Officer	National Historic Preservation Act (appendix A, para. 8); ER 1105-2-50.

DEPARTMENT OF THE ARMY
U. S. Army Corps of Engineers
Washington, D. C. 20314-1000

ER 1130-2-435

CECW-ON

Regulation
No. 1130-2-435

30 December 1987

Project Operation
Preparation of Project Master Plans

Supplementation of this regulation is permitted but not required by divisions. If supplements are prepared, the DIVCDR will furnish one copy to CDRUSACE (CECW-ON) WASH DC 20314-1000 for review and comment at least 30 days prior to issuing the supplement.

1. Purpose. This regulation provides policy and guidance for the preparation of Master Plans for the U. S. Army Corps of Engineers Civil Works.

2. Applicability. This regulation is applicable to all HQUSACE elements and all field operating activities having Civil Works responsibilities.

3. References. See Appendix A.

4. Definitions. The following definitions are to be consistently applied throughout the master plan preparation. Use of unique terms applicable to a particular master plan will be defined in that report.

a. Master Plan. The document guiding the use and development of the natural and manmade resources of a given project or group of projects.

b. Operational Management Plan (OMP). A management action document that describes in detail how resource objectives and concepts prescribed in the master plan will be implemented and achieved. (ER 1130-2-400).

c. General Plan. The plan required, pursuant to the Fish and Wildlife Coordination Act (reference Appendix A, paragraph 5) for lands and waters where the fish and wildlife resources are to be developed and managed by another agency, and for authorized mitigation lands managed by the Corps. Plans will be approved jointly by the Secretary of the Army, the Secretary of the Interior, and the head of the State Fish and Wildlife agency. A General Plan is not necessary when operation and management of the project provides for fish and wildlife incidental to other Corps activities.

d. Land Allocation. The identification and documentation of lands at Civil Works projects in accordance with the authorized purposes for which they were or are to be acquired. There are four primary land allocation categories applicable to Corps projects; (1) operations (i.e. flood control, hydropower, etc.), (2) recreation, (3) fish and wildlife, and (4) mitigation.

This regulation supercedes ER 1120-2-400, 1 Nov 71 and ER 1105-2-167, 12 Apr 78.

e. Land Classification. All lands are acquired for authorized project purposes and allocated for these uses. The classification process is a further distribution of project lands by management categories which, based upon resources available and public needs, will provide for full utilization while protecting project resources.

f. Resource Plan. A narrative and graphic description which provides guidance for development and management of project resources.

g. Resource Objectives (RO). Clearly written statements that are specific to a project, or group of projects. They specify the attainable options for resource development and/or management. They must be consistent with authorized project purposes, Federal laws and directives, regional needs, resource capabilities, and expressed public desires.

h. Reevaluation. The review of an existing master plan by an interoffice/interdisciplinary team to determine if it requires supplementation or updating.

i. Project. Water resource development lands and waters for which the Corps of Engineers has administrative responsibility.

j. Supplement. An approved change to a master plan.

k. Update. A major revision of a master plan. The term "update" should not be used in the title of the new master plan. It is used in this regulation to distinguish between levels of change.

5. Policy. It is the policy of the Corps of Engineers that:

a. Master plans be developed and kept current for all Civil Works projects and other fee owned lands for which the Corps has administrative responsibility for management;

b. The master plan be an essential element in fostering an efficient and cost-effective project natural resources management program;

c. The master plan provides direction for project development and use and as such is a vital tool for the responsible stewardship of project resources for the benefit of present and future generations; and,

d. The master plan promotes the protection, conservation and enhancement of natural, cultural, and man-made resources.

6. Goals. The primary goals of the master plan are to prescribe an overall land and water management plan, resource objectives, and associated design and management concepts, which:

a. Provides the best possible combination of responses to regional needs, resource capabilities and suitabilities, and expressed public interests and desires consistent with authorized project purposes;

b. Contributes towards providing a high degree of recreation diversity within the region;

c. Emphasizes the particular qualities, characteristics, and potentials of the project;

d. Exhibits consistency and compatibility with national objectives and other state and regional goals and programs.

7. General.

a. Discussion. The master plan is the basic document guiding Corps of Engineers responsibilities pursuant to Federal laws (See Appendix A) to preserve, conserve, restore, maintain, manage, and develop the project lands, waters, and associated resources. The master plan is a continuing and dynamic document unlike the feasibility study and the general design memorandum, which also plan for the development of resources. The master plan is a planning document anticipating what could and should happen and is flexible to changing conditions. Design functions are handled in the feature design memorandums and in contract plans and specifications. The master plan deals in concepts, not in details of design or administration. Detailed management and administration functions are handled in the operational management plan, which translates the concepts of the master plan into operational terms.

b. Requirement. Master plans are required for Civil Works projects and other fee owned lands for which the Corps of Engineers has administrative responsibility for management of natural and manmade resources. Lands may be exempted from this requirement where there is no demonstrated need or opportunity to manage them, with the division commander approval. Master plans may be prepared for projects not managed by the Corps of Engineers, such as local protection projects, at the discretion of the division commander. A current, approved master plan is necessary before any action can be taken which may restrict the range of future options. All actions by the Corps of Engineers and outgrantees must be consistent with the master plan. Prior to facility construction, renovation, or consolidation, whether to be accomplished with O&M, General, Construction, General, or SRUF accounts, such activities must be included in an approved Master Plan. These activities will not be included in budget submissions unless they are included in an approved master plan or in a master plan submitted to division for approval. Exceptions for special situations may be granted prior to the approval of a master plan following full coordination within the district and with division approval. The resulting changes will be incorporated into the master plan.

c. Scope of The Master Plan. The master plan may cover a single project or several, depending on what is the best for management of the resources involved. The scope, content, and organization of master plans may vary considerably from project to project depending upon a number of factors including the complexity of the project, whether a new or updated master plan, the particular needs of management personnel, innovations developed to improve utility, and other factors. Each division should coordinate with their respective districts on the scope, content, and organization of each master plan to ensure its utility and to promote cost-effectiveness in terms of initial preparation and subsequent maintenance. The master plan shall cover all resources including but not limited to fish and wildlife, vegetation, cultural, aesthetic, recreational, mineral, commercial, and outgranted lands, easements, and water.

d. Preparation. The interoffice/interdisciplinary team approach will be used for the development, reevaluation, and supplementation or updating of master plans. Teams should consist of representatives from operations (including project personnel), planning,real estate and/or other elements as appropriate. The team should also be interdisciplinary, as required by the National Environmental Policy Act, including representatives of various science and design disciplines depending upon the resources involved. Coordination with other agencies and the public shall be an integral part of the master planning process. The process shall be conducted in a manner which maximizes long term cost effectiveness of the preparation, maintenance, and implementation.

8. Planning Procedures and Requirements.

a. Conceptual Framework. The master planning process encompasses a series of interrelated and overlapping tasks involving the examination and analysis of past, present, and forecasted future environmental, socio-economic conditions and trends. Within a generalized conceptual framework, the process focuses on three primary components: (1) regional needs, (2) project resource capabilities and suitabilities, and (3) expressed public interests and desires. Within this conceptual framework, the process is directed towards achievement of the goals described in paragraph 6 of this regulation.

b. Plan of Study. To ensure that a master plan will be developed in an efficient and cost-effective manner, a plan of study will be formalized at the outset by the master plan study team. As a minimum, the plan shall identify information needs and means for obtaining, study costs, schedules, tasks, and responsibilities.

c. When to Prepare, Supplement, or Update a Master Plan.

(1) New Projects. Preparation of the master plan will be initiated as soon as possible after approval of the general design memorandum (GDM) so that approved recreation and other feature developments will become available as the project becomes operational.

(2) Existing Projects.

(a) Reevaluation. Existing project master plans will be periodically reevaluated by an interoffice/interdisciplinary team to assess the extent to which the document serves its intended purpose. The reevaluation team should examine and assess the master plan to determine if it is up-to-date, responsive to current and foreseeable regional needs, public interests and desires, communicates direction and intent, and is actually being used and followed by project management personnel.

(b) Supplementation. Master plans in need of only minor revisions and modifications will be supplemented to include corrected drawings as required. Supplements should be prepared as often as necessary to assure that the master plan continues to serve its intended purpose.

(c) Update. Master plans which no longer serve their purpose will be updated as soon as possible.

d. Coordination and Public Involvement.

(1) In-house. Draft master plans, supplements, and updates shall be coordinated with those elements which have responsibility for planning, design, development and/or management of the project.

(2) Interagency. Coordination with some agencies is required by law, executive order, or memorandum of agreement. Some of the common requirements are listed in Appendix B. Early and thorough coordination with other Federal, state, regional, and local agencies is encouraged.

(3) Public. Coordination with the general public is required in some circumstances and can be very important in identifying resources and determining public needs and desires. Public involvement and coordination should be included in the plan of study (see para 8.b). Consideration should be given not only to formal public meetings but to informal workshops, mailed brochures, and other techniques to achieve maximum coordination with a reasonable expenditure of time and funds.

(4) Congressional. Notification of congressional interests is an important part of public coordination and public involvement. They should be given early notification of formal and informal meetings as well as the availability of draft and final master plans and other master planning documents.

e. Cost Effectiveness.

(1) The Plan. The master planning process will be implemented in a manner which maximizes cost effectiveness in the preparation and maintenance of master plans. Toward this end the master plan should be concise and designed to be easily prepared, supplemented, and updated. Project field personnel, in addition to serving as team members, will be fully utilized for data collection and recommendations. Materials previously assembled for feasibility reports, environmental impact statement, the OMP or other documents will be used to the maximum extent possible to minimize effort and redundancy.

(2) The Document. The finished master plan will be a usable document. The text should be typewritten on 8 1/2 x 11" white paper when feasible with all maps, aerial photographs, or plates folded to the 8 1/2 x 11" size. The document will be assembled in a looseleaf format with the title on the front cover and the binding. Data, aerial photographs, maps, or other exhibits used in development of the master plan should be available for development of the OMP. Pages and plates changed as a result of supplementation shall be marked with the date of the revision and distributed to all holders of the master plan.

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i. Special Programs. Programs or situations not covered in other parts of the plan such as off-road vehicle use or feasibility studies for future concession developments may be identified and discussed.

10. Responsibilities.

a. Schedules. District Commanders are responsible for assuring that master plans are current. Master plans will be completed for all projects which do not have an approved master plan or for which the master plan is in need of revision within 5 years of the date of this regulation.

(1) Master plans will be reevaluated on a continuing basis to avoid

costly future updates.

(2) District 5-year schedules for master plans, supplements, and updates will be included in the annual update of the Natural Resources Management System which begins 1 December each year (ER 1130-2-414). Each annual report will include the status of plans scheduled.

b. Approval. Division Commanders are authorized to approve master plans, supplements and updates. One copy of the approved document will be submitted to CDR, USACE (CECW-ON) WASH DC 20314-1000. Normally, if the CDR USACE wishes to comment on the master plan or the division commander's endorsement, these comments will be furnished to the division commander within 30 days of receipt of the division commander's endorsement.

FOR THE COMMANDER:

Charles L. Thomas, CTC, CE
for ROBERT C. LEE
Brigadier General, USA
Chief of Staff

2 Appendixes

APP A - References and
Summary of Selected Authorities

APP B - Interagency
Coordination Requirements

APPENDIX A
REFERENCES and Summary of Selected Authorities

1. Flood Control Act of 1944, Section 4, as amended (16 USC 460d). Authorizes providing facilities for public use, including recreation and conservation of fish and wildlife.

2. Public Law 86-717 (16 USC 580m and n). States a policy to develop and maintain reservoir lands so as to encourage future resources of readily available timber and to increase the value of such areas for conservation.

3. Federal Water Project Recreation Act, as amended (P.L. 89-72) (16 USC 4601-)12)et seq). Requires that full consideration be given to opportunities for recreation and fish and wildlife enhancement; that recreation planning be based on coordination of use with existing and planned Federal, state, and local recreation; and that non-Federal administration of recreation and enhancement areas be encouraged. Requires that, without cost-sharing, no facilities for recreation and fish and wildlife enhancement be provided except those justified to serve other project purposes or as needed for public health and safety. If, in the absence of a local sponsor, lands are acquired to preserve the recreation and fish and wildlife potential of the project, and if 10 years after the initial project operation there is still no loccal sponsor, the lands may be sold or used for other purposes. The views of the Secretary of the Interior on the extent to which the proposed recreation and fish and wildlife development conforms to and is in accord with the state comprehensive plan shall be included in any project report.

4. Water Resources Planning Act, as amended (42 USC 1962 et seq.). Declares a policy of encouraging the conservation, development, and utilization of water and related land resources.

5. Fish and Wildlife Coordination act, as amended (16 USC 661) et seq.). Requires that wildlife conservation receive equal consideration with other features of water-resource development programs; that proposals for work affecting any body of water be coordinated with the Fish and Wildlife Service (FWS) and the state wildlife agency; that recommendation of the FWS and the state agency be given full consideration; and that justifiable means and measures for wildlife purposes, including mitigation measures, be adopted. Requires that adequate provision be given for the use of project lands and waters for the conservation, maintenance, and management of wildlife resources, including their development and improvement. Provides that the use of project lands for wildlife management be in accordance with general plans approved jointly by Army, Interior, and the state wildlife agency.

6. Endangered Species Act, as amended (16 USC 1531 and 1536). Requires that Federal agencies shall, in consultation with FWS (or the National Marine Fisheries Service), utilize their authorities in furtherance of conserving endangered and threatened species and take such action as necessary to assure that their actions are not likely to jeopardize such species or destroy or modify their critical habitat. Sets up a procedure of coordination, assessment, and consultation.

7. National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq). Declares a national environmental policy and requires that all Federal agencies shall to the fullest extent possible use a systematic, interdisciplinary approach which integrates natural and social sciences and environmental design arts in planning and decision making; study, develop and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources; utilize ecological information in the planning and development of projects; and include an environmental impact statement in every recommendation or report on proposals for major Federal actions significantly affecting the quality of the human environment.

8. Archeological and Historic Preservation Act, as amended (16 USC 469 et seq.), ("Reservoir Salvage Act"). Provides for the preservation of historical and archeological data which might otherwise be lost or destroyed as the result of flooding or any alteration of the terrain caused as a result of any Federal construction projects; for coordination with the Secretary of the Interior whenever activities may cause loss of scientific, prehistorical, historical or archeological data; and for expenditure of funds for recovery, protection and data preservation.

9. National Historic Preservation Act, as amended (42 USC 470 et seq.). States a policy of preserving, restoring, and maintaining cultural resources and requires that Federal agencies take into account the effect of any undertaking on any site on or eligible for the National register of Historic Places; afford the Advisory Council on Historic Preservation opportunity to comment on such undertaking; nominate eligible properties to the National Register; exercise caution in disposal and care of Federal property which might qualify for the National Register; and provide for the maintenance of Federally owned and registered sites.

10. Archeological Resources Protection Act of 1979 (16 USC 470 aa-11). Protects archeological resources and sites which are on public lands and Indian land, and fosters increased cooperation and exchange of information between governmental authorities, the professional community, and private individuals. Establishes requirements for issuance of permits by Federal land managers to excavate or remove any archeological resource located on public or Indian lands.

11. ER 200-2-2. Policy and Procedures for Implementing NEPA.

12. ER 1130-2-400. Management of Natural Resources and Outdoor Recreation at Civil Works Water Resources Projects.

13. ER 1130-2-414. Natural Resource Management System.

14. ER 1105-2-20. Project Purpose Planning Guidance.

15. ER 1165-2-400. Recreation Planning, Development, and Management Policies.

16. EM 1110-1-400. Recreation Planning and Design Criteria.

APPENDIX B
Interagency Coordination Requirements

The following table shows some of the common legal requirements for interagency coordination which may be applicable in the preparation, approval, and implementation of a master plan. It should be noted that this is not a complete list, as there are numerous other requirements which might apply in particular situations or to particular projects. Also, this list defines only minimum requirements and should not be construed to limit coordination.

SITUATION WHICH TRIGGERS THE NEED FOR COORDINATION	AGENCY OR AGENCIES INVOLVED	REFERENCES/DISCUSSION
1. Environmental Impact Statement or supplement to an EIS is prepared.	Federal, state and local government agencies.	National Environmental Policy Act (para 6); ER 200-2-2.
2. Significant changes are proposed to recreation.	National Park Service	Under the Federal Water Project Recreation Act (appendix A, para. 3) the views of Interior are incorporated into project planning. If there is a subsequent change it should be recoordinated.
3. Significant changes are proposed to fish and wildlife.	Fish and Wildlife Service and State Fish Wildlife	Same as above under the Federal Water Project Recreation Act. Also, under the Fish and Wildlife Coordination Act (appendix A, para. 5), coordination with FWS and the state agency is required. ER 1105-2-50.
4. An endangered or threatened species or designated critical habitat may be affected by a proposed action.	Fish and Wildlife Service and/or National Marine Fisheries Service	Endangered Species Act (appendix A, para 6); ER 1105-2-50.
5. An action is proposed which will result in flooding of archeological data.	National Park Service	Archeological and Historic Preservation Act (appendix A, para. 8); ER 1105-2-50.
6. An activity may cause loss or destruction of important scientific, historical, or archeological data.	National Park Service	Same as above.

7. An action that may effect any district, site, building, structure, or object that is on or is eligible for the National Register of Historic Places.	Advisory Council on Historic Preservation and State Historic Preservation Officer	National Historic Preservation Act (appendix A, para. 8); ER 1105-2-50.

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