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Small Watershed Projects Under the

WATERSHED PROTECTION AND FLOOD PREVENTION ACT

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

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This publication supersedes PA-298, Facts About
the Watershed Protection and Flood Prevention Act

Small Watershed Projects Under the

WATERSHED PROTECTION AND FLOOD PREVENTION ACT (PUBLIC LAW 566, AS AMENDED)

By Watershed Planning Division, Soil Conservation Service

WHEREVER YOU LIVE, you are within a watershed. Your farm, ranch, home on a townlot, or your business in the city are all within the natural boundaries of some watershed. All the lands and waters of the Nation are bounded by natural drainage divides.

Watersheds are of all sizes. A few acres in a farm field drain into a single gully or grass waterway. Or many small watersheds together may cover nearly half a continent as do those of the Mississippi River and its tributaries.

In your watershed, you may have to share with all others there the tragedies of floods, washed-away land, mud-filled lakes, and water shortages. You also share with others the fruits of watershed protection, development, and flood prevention.

For years we have been moving toward more intensive watershed protection and development. Watershed conservation was a basic idea in the Executive order of 1891 which set aside the National Forest reserves. From its beginning, the Soil Conservation Service has stressed the need for planning and treating entire watersheds. In 1933, as the Soil Erosion Service in the Department of the Interior, its first

erosion-control demonstrations were on a watershed basis. In 1935, Public Law 46 created the Soil Conservation Service in the Department of Agriculture and expanded its responsibility.

Working with individual farmers and ranchers, the SCS early learned the measures needed for good land use and protection and for water conservation and use. But 20 years ago local people were not generally organized for group work and did not have State-given legal authority to plan and carry out their own programs of soil and water conservation.

Beginning in 1937, the States passed laws that authorized farmers and ranchers to organize and govern soil conservation districts. These local districts, now totaling about 2,800 throughout the Nation, are



dedicated wholly to planning and applying soil and water conservation measures to agricultural land. Some districts have watershed boundaries; all have small water-

sheds within their boundaries and are parts of larger watersheds.

Farmers and ranchers in these soil conservation districts are now planning and carrying out complete conservation programs on their own farms and ranches with technical, financial, educational, and other help from State and Federal Governments. Also some group or community work is being done in solving drainage, irrigation, or small watershed problems. Townspeople are helping in many ways, too. At the same time, Federal and State agencies responsible for public lands are carrying out soil and water conservation programs on these lands.

District and other leaders, however, recognized long ago that an unbridged gap existed between the effective conservation work done by individual farmers and ranchers on their own land or by Federal and State agencies on public lands and the large downstream dams and other developments on major rivers. In many cases, landowners were unable to complete their own conservation programs because of flooding and other problems they could not solve as individuals.

Federal legislation to help local organizations bridge the gap between soil and water conservation work on individual farms and the downstream dams has come in three stages.

The Flood Control Act of 1936 was the first Federal law to recognize the need for runoff and water-flow retardation and soil-erosion prevention on watersheds as a principal means of flood prevention. Responsibility for upstream flood

prevention was assigned to the Department of Agriculture. World War II delayed the beginning of operations under this law. Since 1947, however, upstream planning and treatment with all measures needed to conserve soil and water and to reduce flood and sediment damage have been underway in 11 watersheds, covering about 30 million acres.

The second Federal action came in 1953 when Congress appropriated \$5 million with which 60 pilot watershed projects were started. One objective was to demonstrate the benefits of combining soil and water conservation on the land with upstream flood-prevention structures. The other was to find out the best ways to achieve local-State-Federal teamwork in planning and carrying out watershed protection and development.

In 1954 the Watershed Protection and Flood Prevention Act (Public Law 566, 83d Cong.) was passed. It provides for a new project-type approach to soil- and water-resource development, use, and conservation.

In 1956 the act was amended by Public Law 1018, 84th Congress.

In 1958 the act was amended by Public Law 85-624 and Public Law 85-865, 85th Congress.

A NEW APPROACH

Under the Watershed Protection and Flood Prevention Act, each project is a local undertaking with Federal help, not a Federal project with local help.

The act places full responsibility for starting small watershed projects

on local people who will act through their own organizations. Only local organizations can initiate a project. Federal help cannot be given



if the project is disapproved by the State.

Under Public Law 566, as amended, the Secretary of Agriculture is authorized to give technical, cost-sharing, and credit aid to local organizations in planning and carrying out works of improvement for (1) flood prevention; (2) agricultural water management, including irrigation and drainage; and (3) nonagricultural water management, including municipal or industrial water supply and fish and wildlife development. The Soil Conservation Service has the primary responsibility for carrying out this act.

Congress in passing the Watershed Protection and Flood Prevention Act made clear—

That the additional authority of this act should be used to supplement both our present soil and water conservation programs and our programs for development and flood protection of major river valleys;

That the act will bridge the gap between these two types of programs and greatly enhance the ultimate benefits of both; and

That Federal help should be made available only to assist local organi-

zations plan and install needed flood-prevention and water-management measures that *cannot* feasibly be installed under other current Federal conservation programs.

GROUP ACTION NECESSARY

Solution of the complex problems requires:

1. Soil and water conservation practices applied as needed on individual farms and ranches and on public land. Wise land use and treatment are the foundation for watershed protection and flood prevention.

2. Teamwork of local organizations to do the *group* or *community* jobs that individual landowners cannot do alone.

Land Treatment

Structures for flood prevention and water management give only partial aid unless soil and water conservation practices are applied on individual farms and ranches and on public lands of the watershed.

For a successful watershed project, land must be used within its capability and soil and water conservation practices applied according to its needs for protection and improvement.

This is why the act or Department policy sets the following minimum conditions for conservation farm and ranch planning and application of land-treatment measures before Federal financial assistance will be provided for construction of structural improvements:

One-half of the land above *floodwater retention* or *retarding* structures *must* be under basic conservation plans.

One-half of the land above all *other* structures *must* be under conservation *plan if* the design, operation, maintenance, or effective use of the structural works would be impaired or made more costly by lack of proper land use and treatment.



Not less than 75 percent of the land-treatment measures *must* be applied or in the process of application in sediment source areas that are a serious hazard to the design, operation, or maintenance of structural works of improvement for flood prevention, irrigation, drainage, and other water-management measures proposed for installation.

The basic conservation plans will be the same type that farmers and ranchers are now making with technical help from the Soil Conservation Service through local soil conservation districts.

Flood-Prevention Measures

One type of measure *prevents the destruction of land* and therefore reduces the movement of huge and damaging amounts of sediment to stream channels and lower land. Where economically justified, large gullies and severely eroding land

may be treated with vegetation or structures. Road banks and fills may be protected. Waterways crossing two or more farms may be improved. Plants needed to keep the soil tied down may be protected from fire. Other measures may include shaping and planting of waterways or drains serving more than one farm; lining channels; and building diversions, chutes, drop inlets, desilting basins and jetties, fire-breaks, and fire towers.

Another type of measure *controls waterflow and sediment* that cause damage to groups of landowners, communities, and the general public.

When exceptionally heavy rainstorms sweep across a watershed, runoff may be great even from conservation-treated farm and ranch lands. This is especially true if the soil is already saturated or frozen. The damage from this surplus water may be controlled by structures to retard floodwater; stream-channel clearing, straightening, and enlarging; levees and dikes; desilting basins; floodways; floodwater diversions; and special water-holding or water-diverting terraces and dikes.

Structures for flood prevention will be located and planned to—

1. Protect the largest possible area of land subject to flooding.
2. Encroach as little as possible on highly productive land.
3. Provide enough protection of land now subject to overflow so that owners will be encouraged to make full and continuous agricultural use of it, although they may have occasional damage from major storms.

4. Provide greater protection from major storms where human life or high nonfarm investments, as well as agricultural land, are at stake.

Agricultural Water-Management Measures

Three types of agricultural water-management measures may be included in watershed work plans as an integral part of the work plan: (1) Drainage, (2) irrigation, and (3) measures to provide a more uniform supply and distribution of water for agricultural use.

Drainage measures provide for more efficient land use on existing farms and ranches. Present drainage systems may be improved. Or new drainage systems may be provided for areas presently used for crops or grazing. The measures include all parts of a group drainage system, such as open ditch or tile, drops, checks, flumes, control gates, manholes, and pumping plants.

Irrigation measures include water-supply reservoirs, diversion dams, pumping plants, sluiceways, canal headworks, canal laterals, and main distribution pipelines to carry water to the farm boundary. They may also include lining canals and sealing storage reservoirs. Help also may be given with measures needed to conserve and use efficiently present and potential water supplies and to carry water to individual farms with the least practical loss.

Under the Department's present policy, drainage or irrigation of land not previously or presently used for

agricultural production must be incidental to, and not a primary purpose of, the measures for which help is provided.

Help may be given to provide a more uniform supply and distribution of water for agricultural use by two or more landowners if the improvements are a part of the watershed plan. These measures will be designed to make annual streamflow more stable; to increase the recharge of ground-water reservoirs; to distribute on a community-wide basis water for livestock, orchards and crops, and other agricultural purposes.

Nonagricultural Water-Management Measures

Works of improvement for non-agricultural water management may be included in watershed work plans providing for the protection and improvement of the interrelated land and water resources of the watershed.

Included are works of improvement for fish and wildlife development such as storage capacity in reservoirs for fish and wildlife development; modification of reservoir structures for fish and wildlife; stream-channel improvement for fish and wildlife development; and marsh and pit development, including facilities such as fencing, to provide breeding and nesting areas for migratory waterfowl and aquatic mammals.

Included also are works of improvement for municipal or industrial water supply, recreation, power, pollution-abatement control

by streamflow regulation, and saline-water-intrusion control.

Ineligible Measures

Federal assistance is not available for the following: (1) Measures that do not provide direct measurable flood-prevention or water-management benefits to two or more beneficiaries; (2) measures for the distribution or use of water stored for nonagricultural purposes; (3) structures or measures for nonagricultural purposes if no works of improvement for flood prevention or agricultural water management are planned for the project; and (4) measures for harvesting or enjoying fish and wildlife.

HOW YOU CAN GET HELP

If your watershed needs more help than can be provided under existing programs, you and your



neighbors as an organized group may get help under the act subject to the following conditions.

Size of Watershed

Your watershed must contain less than 250,000 acres. All of it must be within the boundaries of the qualified sponsoring local organization or combination of organizations.

Two or more watersheds containing less than 250,000 acres may be planned jointly if your local organization requests it in separate applications.

Size of Structures

Your project cannot include structures having a capacity of more than 5,000 acre-feet for floodwater detention or a capacity of more than 25,000 acre-feet for all purposes.

State Authority

Only a local organization having necessary authority under State law can *sponsor* or cosponsor an application requesting Federal help with watershed problems. All other kinds of organizations or groups may *endorse* projects.

In most States, soil conservation districts have authority to sponsor small watershed projects.

State agencies; municipalities; counties; and watershed, flood-control, conservancy, drainage, irrigation, or other special-purpose districts may also have this authority.

State Approval

Your application must be submitted to the State agency to which your Governor or State legislature has given responsibility for watershed work in the State. If no agency has been given this responsibility, your request goes directly to the Governor.

Application forms may be obtained from the State agency or the Soil Conservation Service.

Local Responsibilities

Local organizations or individual land owners and operators within the watershed must:

1. Acquire land, easements, and rights-of-way needed for structures or other improvements on privately owned land. The local organization may acquire them by purchase or gift. Local costs include removal, relocation, or replacement of bridges, roads, railroads, pipelines, buildings, fences, or wells, whether done by the organization or by the owners.

2. Acquire water rights required by State laws.

3. Operate and maintain structures and other improvements on privately owned land. If a structure placed on Federal land benefits local people, they share the maintenance cost to the extent they are benefited.

4. Construct, or let contracts for, improvements on privately owned



property. The Federal Government lets and administers contracts only on Federal land.

5. Obtain agreements from farmers and ranchers to plan and apply soil and water conservation measures and provide assurance of the application of a high percentage of the land-treatment measures.

6. Comply with State laws governing watershed improvements,

water rights, or specifications for structures.

7. Submit a satisfactory plan of repayment for any loan or advancement obtained under the act.

Benefits Must Exceed Costs

Benefits must be greater than costs for all independent structural



measures or groups of measures for which the Federal Government shares in the cost.

Monetary evaluations are *not* required for benefits from soil and water conservation measures applied to the land, however. Long experience shows that private and public benefits from land-treatment measures are greater than costs.

Benefits both within the watershed project and downstream may be evaluated.

Agreement on Work Plan

The act specifies that the Secretary of Agriculture, representing the Federal Government, and the interested local organization agree on a plan before Federal help is given.

Federal Approval

When your plan is approved by the Secretary of Agriculture, work may begin at once, if funds are avail-

able, provided (a) the Federal contribution to estimated construction costs does not exceed \$250,000 and (b) your plan does not contain any single structure having a total capacity of more than 2,500 acre-feet.

If your plan exceeds either of these limitations, it is (a) reviewed by other interested Federal agencies within 30 days, (b) transmitted to



the Congress through the Bureau of the Budget, (c) approved by resolutions of the Senate and House Committees on Agriculture unless it contains any single structure having a total capacity of more than 4,000 acre-feet. Such a plan must be approved by the Senate and House Public Works Committees instead of the Committees on Agriculture.

Federal Funds

Federal funds for technical-planning assistance, cost sharing, and credit in carrying out a project must be appropriated before they can be obligated.

Obligations for planning watersheds *cannot* at any time exceed the available funds of the Soil Conservation Service for this purpose. This ordinarily means that planning obligations cannot exceed 12 months.

It also means that some watersheds will have to wait their turn to be designated for planning.

Federal assistance in carrying out works of improvement after the projects have been planned and approved also is limited to the funds available. No aid can be given on new projects until available funds are more than sufficient to meet current-year Federal obligations on projects already started.

HANDLING YOUR APPLICATION

After receiving your application for watershed assistance, the Soil Conservation Service makes a fact-finding examination of the watershed. This includes an inventory of the physical and economic resources of the watershed and a study of the specific land and water problems and their possible solutions. SCS asks the responsible State

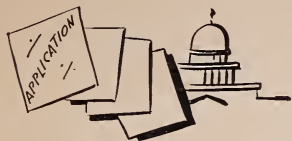


agency and concerned Federal agencies to participate.

As a part of this first examination, representatives of the State and Federal agencies meet with your local organization. At that time you will have an opportunity to discuss in detail your problems, how you propose to solve them, the technical and financial help that may be needed, and your ability to share in the costs.

The State agency sends your approved application to the State Con-

servationist of the Soil Conservation Service. He sends the application, the State agency's recommended priority, and a report of the field study with his own recommenda-



tions to the Soil Conservation Service Administrator in Washington.

Planning help then will be authorized according to (1) State-recommended priorities and (2) an equitable national distribution of assistance within the funds available to SCS for this assistance.

PLANNING YOUR WATERSHED

Your watershed has its own combination of problems. So do all the other watersheds of the Nation. And solutions must fit the problems in each. This is watershed planning. In many ways it is similar to soil and water conservation planning for individual farms and ranches.

A sound watershed work plan provides for the conservation, use, and development of land and water within the drainage area. It meshes with the goals, abilities, and desires of the local people. It provides financial help for needed structures and other improvements any one member of the group cannot be expected to build.

Your watershed work plan is a guide for your local organization to use in protecting and developing the land and water resources of your

watershed. It is a basis for all Federal help.

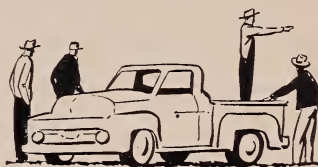
Your plan gives information on—

1. The problems in your watershed.
2. Your needs and desires.
3. The planned land-treatment measures and structures.
4. Estimated costs and benefits of the project.
5. Proposed expenditures of local, State, and Federal funds.
6. Explanation of cost sharing.
7. Provisions for maintaining the planned measures and structures.
8. Timetable for completing the project.

Planning Federal Lands

Work plans also include needed measures and improvements on Federal lands within your watershed.

The Soil Conservation Service arranges for the field office of each



Federal agency administering land in the watershed to assist in preparing the work plan.

Federal Help on Work Plan

The Soil Conservation Service may provide, without cost to the local organization, planning services which include all help given for surveys and investigations and for

preparation of work plans before Federal aid is authorized for improvements. Planning services also include costs for collecting and analyzing basic data needed to develop a sound work plan. State and local agencies may help by providing or financing these same services without reimbursement from the Federal Government.

Teamwork in Planning

During all planning stages, Soil Conservation Service technicians work closely with your local organization and all others concerned.

Leaders of the local organization will be called on at every stage of



planning to make decisions based on the facts gathered by the technicians and on the provisions of the act.

Timetable for Your Project

Most projects will be planned for completion within 5 years after installation funds become available.

Unusual conditions or circumstances may warrant a longer period.

Cost Sharing

Cost-sharing arrangements must be included in the watershed work plan.

Local organizations or land owners and operators are required to bear certain costs, either in cash or



the equivalent in labor, services, and materials.

Some costs, including costs for certain services, are borne entirely by the Federal Government.

The local organization shares in the cost of installing works of improvement for irrigation, drainage, and other agricultural water management and for fish and wildlife development having public benefits. Cost sharing is determined by the Secretary of Agriculture on the basis of direct identifiable benefits.

The Federal Government pays all the construction costs (including engineering costs) of installing works of improvement applicable to flood prevention.

The local organization pays for installing works of improvement for all other purposes.

Loans to Local Organizations

To help a local organization pay its share of the project cost, the Secretary of Agriculture may make loans or advancements to the organization. The loans or advancements can be made for periods up to 50 years at the Federal long-term borrowing rate with a limit of \$5 million for one project.

The Farmers Home Administra-

tion administers the loan or advancement provisions of the act.

Reviewing the Work Plan

When you and the Soil Conservation Service tentatively agree on a watershed work plan, all others with a direct interest in or responsibility for carrying out or maintaining some part of the project must have an opportunity to review the plan.

The State Conservationist arranges for reviews within SCS and by other Federal or State agencies that will help to carry out the plan. Any changes they suggest will be discussed with your group.

CARRYING OUT YOUR PLAN

When you begin your watershed project, your work plan becomes the overall guide and timetable for conservation, development, and better use of all land and water in your watershed. In the plan are your answers to these important questions about each problem you want to solve:

What will be done? Who will do it? Where? When? How? And why?

Information and Education

To carry out the plan, all people in the watershed must be fully informed about what is being done and why and what each group's responsibilities are. This calls for a continuing program of information and education.

Help With Land Treatment

The Soil Conservation Service will give technical assistance to landowners who plan and apply soil and water conservation measures on their farms and ranches. Farmers and ranchers receive this assistance



through soil conservation districts. Additional technical assistance may be given from funds appropriated under the Watershed Protection and Flood Prevention Act *only* as they are required to complete land-treatment measures within the agreed-upon period for project installation.

The Soil Conservation Service will give technical assistance by—

1. Making an inventory of the land according to its capability for use.

2. Assisting in planning farms and ranches in accordance with this inventory.

3. Aiding farmers and ranchers to plan and apply—

- Terraces, dams, diversions, waterways, contour farming, stripcropping, and the growing of green-manure cover crops and other vegetation needed to protect the soil from wind and water erosion and to restore, improve, and maintain soil productivity.

- Irrigation, chiseling, subsoiling and pitting, contour furrowing, water spreading, drainage, wells,

ponds, and other improvements to provide and conserve water for crops, livestock, fish and wildlife, and forage production.

- Stocking rates, reseeding, erosion control, and other practices necessary to restore and improve range and permanent pastures *not* in national forests nor managed in conjunction with national forests.

- Woodland-conservation practices that can be applied with general technical help.

The Forest Service provides the specialized technical assistance that farmers and ranchers need to apply the more difficult forestry practices. This assistance usually will be made available through the State forestry agency. It includes forest protection, distribution of planting stock, and other specialized technical aid in forest management.

On privately owned rangelands within national forests, the Forest Service gives necessary technical help with conservation measures needed to restore and improve the range. The Forest Service also gives this assistance on rangelands adjoining national forests and administered in conjunction with the forests under formal agreement with the owners or lessees.

In addition to technical assistance, the Federal Government may pay for part of the installation costs of the following land-treatment measures when their benefits are determined to be primarily for flood prevention and in excess of their costs:

- (1) Fire prevention and control;
- (2) critical-area-stabilization measures, primarily by vegetative prac-

- tices;
- (3) minor gully and channel-stabilization measures; and
- (4) special-purpose terraces and other on-farm measures used in lieu of downstream flood-prevention structures.

Help With Structures

The Soil Conservation Service gives help with structural measures on privately owned land. These services include surveys, site investigations, layout, design, preparation



of specifications for structures for flood prevention and agricultural water management, and supervision of construction.

This help is given except where the local organization is required to obtain non-Federal professional engineers or has elected to do so.

The local organization is required to provide, without reimbursement, professional engineers for the planning and installation of structures for purposes other than flood prevention, agricultural water management, and fish and wildlife development. These engineers must be approved by the Secretary of Agriculture.

The local organization has the option of using non-Federal professional engineers or Soil Conservation Service engineers in installing structures for flood prevention, agricultural water management,

and fish and wildlife development. If the local organization uses non-Federal engineers, satisfactory to the Secretary, it may be reimbursed by the Federal Government for the cost of such service. The Secretary of Agriculture may advance to the local organization up to 5 percent of the total cost of the structures for the engineering services.

The Forest Service helps with fire-protection structures on forest and brush-covered land.

Other Available Help

In addition to assistance under the Watershed Protection and Flood Prevention Act, you will have the aid of other Federal, Federal-State, and State programs dealing with land, water, plants, and fish and wildlife.

The Soil Conservation Service will use, and encourage other agencies to use fully, the help available under other Federal legislation to



speed the completion of watershed projects.

This help may include—

1. Educational assistance from the cooperative Federal-State Extension Service.
2. Technical aid by the SCS under its national program of assistance to soil conservation districts.
3. Agricultural Conservation Program cost sharing.

4. Credit from the Farmers Home Administration.

5. Farm-forestry assistance under the Cooperative Forest Management Act.

6. Protection of forest areas from fire, insects, and diseases under cooperative programs authorized by the Clarke-McNary Act, Forest Pest Control Act, and White Pine Blister Rust Protection Act.

7. Cost sharing under the Great Plains Conservation Program (Public Law 1021) and the Conservation Reserve Program.

8. Assistance in fish and wildlife development from the Fish and Wildlife Service and State fish and game agencies.

9. Protection and treatment of federally owned lands in the watershed by land-managing agencies.

10. Collection of basic data by research agencies.

The Soil Conservation Service will encourage all State and local agencies and private organizations to assist your organization wherever possible in carrying out your watershed work plan.

Improvements on Public Land

The agency administering Federal land within your watershed is responsible for installing, operating, and maintaining on this land the land-treatment and structural measures provided for in the watershed plan. The cost will be shared by the Federal agency administering the land and your local organization in the same manner as if the measures were installed on privately owned lands, except that the Fed-

eral Government may share in the operation and maintenance costs.

The State is responsible for structures and other improvements that may be needed on State-owned lands within your watershed.

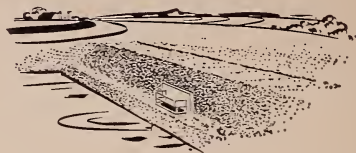
MAINTAINING YOUR PROJECT

By the time your project is completed you, the Federal Government, and possibly your State will have a considerable investment in watershed protection and flood prevention. Proper operation and maintenance are necessary to protect this investment and to assure the continued success of the improvements.

Your local organization, as the project sponsor, is responsible for operating and maintaining structures and other works of improvement on privately owned land. Or you may arrange with some other agency or organization to operate and maintain these improvements for you. In either case, a written

agreement on maintenance is required before Federal funds are made available for any part of the cost of construction.

Structures and soil and water conservation measures on Federal lands



will be operated and maintained by the agency administering those lands.

Soil and water conservation measures on individual farms and ranches will be maintained by the owners or operators under agreements with their local soil conservation district. If the watershed is outside a soil conservation district, your local organization must make arrangements satisfactory to the Secretary of Agriculture for fulfilling this responsibility.