ENVIRONMENTAL CONSIDERATIONS AND THEIR IMPACT ON WATER RESOURCE DEVELOPMENT PROJECTS

by

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The topic for my discussion today - Environmental Considerations And Their Impact On Water Resource Development Projects - is quite complex, but interesting, and one in which many of us are deeply involved in the everyday activities of our work. My experience in this field has been entirely with the Soil Conservation Service but part of this work has been the direct involvement with personnel of many other federal, state and local agencies. I would like, however, to generally confine my remarks to the impact on Soil Conservation Service projects but, in theory, most points would apply to projects of other agencies. Also, I hope this presentation will create a better understanding of our problems, the laws and pressures under which we operate, and some of our efforts to overcome these problems in planning and installing water resource development projects that are more environmentally sound. These projects, however, must fulfill, as much as possible, the objectives of the local farmers and the sponsors of these projects since their interest and sponsorship forms the basis for our efforts in these type projects.

The Soil Conservation Service is involved in many types of programs. Public Law 46, passed by the Congress in April 1935 - 40 years ago this month, incidentally - established SCS and provided the means for the Service to assist local Soil and Water Conservation Districts in working with individual farmers in each county of the state. Public Law 534, the Flood Control Act, was passed in December 1944. This law established our first involvement in the small watershed program by creating, nationwide, eleven authorized watersheds. Two of these eleven are in Mississippi - the Yazoo and the Little Tallahatchie. Most of you are familiar with our work in these areas. Public Law 566 was passed in 1956. This is the Watershed Protection and Flood Prevention Act and extended our watershed program of planning and installing projects to cover the rest of the state, outside of the Yazoo-Little Tallahatchie flood prevention area. Public Law 566 also contains our authority for conducting river basin studies on a regional or state level in cooperation with other federal and state agencies. The Mississippi Board of Water Commissioners is the state agency that sponsors most of these studies. Public Law 87-703, the Food and Agriculture Act of 1962, established the Resources Conservation and Development program, commonly called RC&D. These projects can also be of a water resources development nature - and there are other programs of this type in which we are involved. Most of these have been recognized for many years for their generally beneficial effects or impacts on the environment.

The small watershed program, Public Laws 534 and 566, is the program which has recently been subject to a certain amount of criticism. These

laws, and the policies that resulted from them originally were basically geared around a land treatment program and reduction of damages from flooding by building small dams - floodwater retarding structures - and installing channel works. The Yazoo-Little Tallahatchie flood prevention area is recognized nationwide for its accomplishments - especially in the area of land treatment.

Many changes, or impacts, have occurred since the passage of these laws and these changes have been building up through the years. Some of the first of these related to storage of water for public recreation or other beneficial uses. Many of our projects now have additional storage of water for various uses. Most all of these changes were geared toward general environmental improvement - or at least to reduce or minimize adverse effects of the watershed program on the environment.

Let's remember that basically SCS is a soil and water conservation agency and we have always concentrated our efforts in this direction. About ten years ago, in 1965, we began to recognize some of the adverse effects of some of the channel work in our watershed program, especially in regard to channel stabilities. This led to the development of what we refer to as Technical Release 25, TR-25. This was a significant step on our part, and by our own initiative I might add, to reduce velocities in the flow of channels in an effort to reduce erosion of channel beds and banks. Quite frankly, this imposed severe restrictions or limitations of the designs and installation of our channel projects. Many of our earlier channels were designed with velocities of as much as eight feet per second. Now, the designs rarely exceed four to four and one-half feet per second and most range from about two to three and one-half feet per second. This is possible by installing drop structures of either rock or concrete at intervals in the channel to take out the excessive grade or slope.

TR-25 was a significant step, but more important and far reaching on our watershed program was the passage of the National Environmental Policy Act of 1969, Public Law 91-190, commonly referred to as NEPA. This law directly affects all agencies of the federal government involved in any actions that significantly affect the environment. Also affecting many of us was a variety of additional legislation, executive orders, memorandums of agreement between departments and agencies, policy memoranda within agencies and, finally, agency guidelines. The SCS guidelines for preparation of environmental impact statements were published in the Federal Register June 3, 1974. These guidelines were developed by SCS in its efforts to comply with NEPA in planning and installing environmentally sound watershed projects. Prior to the publication of these guidelines, we were developing procedures for making environmental assessment. I personally feel that we now have a very good procedure that quite well covers the range of impacts, both beneficial and adverse, of our projects on the total environment.

You will recall I stated earlier that the original purposes of our watershed program were basically land treatment and flood prevention. The obvious environmental considerations at that point in time were rather limited and consisted of promoting good land use and treatment, prevention

or reduction of erosion and the economic benefits to landowners from reductions in flooding - and that was about it. Operating under those conditions, up until about 1969 or 1970, we were able to complete plans on up to four or five watersheds each year. We had no problem in getting these projects authorized for construction at about that same rate. This resulted in a large land treatment program, the construction of over 300 small dams (floodwater retarding structures) and installation of several hundred miles of channel work. Costs were comparatively low then also. The point is that planning and installation of these projects was rather simple or easy - at least by today's standards. Certainly we make mistakes - hindsight very easily shows us this. But we got a lot of good work on the ground and that was very important. We were following laws established by the Congress and the state and trying our best to be responsive to the needs and desires of local landowners and sponsors of these projects.

Now, under present day criteria, what are the environmental considerations with which we must concern ourselves. Let me quote to you a small part of our published guidelines I mentioned earlier.

"At least the following environmental factors are to be assessed by the responsible federal official in each project or measures planning area as appropriate where an EIS is required or to determine whether an EIS is needed:

Erosion and sedimentation.
Water table alterations.
Change in flow regime.
Changes in land use.
Changes in air quality.
Upland wildlife habitat.
Bottomland wildlife habitat.
Migration routes.
Bottomland hardwoods.
Stream fisheries including potential not presently productive.
Wetlands.
Rare or endangered animals and plants.
Natural perennial streams.
Man-altered perennial streams.
Natural intermittent streams.
Man-altered intermittent streams.
Archaeological and historical resources.
Water quantity.
Water quality including receiving waters.
Appearance of the landscape.

"In addition, the degree of public interest, potential controversy, urban or rural setting, and economic and social impacts should be assessed. Factors are to be quantified and qualified to the extent practicable, as to the total amount in the planning area, the amount affected by the proposed actions, and the percent of the total resource in the planning area which will be affected."

As you can readily see, the items we are required to assess range much further than our original concepts of land treatment and flood reductions. Assessment of all of these factors require expertise in almost all the technical or disciplinary fields of water resource development - economics, engineering, hydrology, soil science, geology and sedimentation, biology, plant science, forestry, water quality, archaeology and historic and still others. This, then, means a full interdisciplinary team of highly qualified technical specialists - working as a team - to assure that all aspects of the environment have been considered. No one member of this team is to make the decision as to the environmental impact of our water resource development projects. It is to be a joint effort of all members of the team with input by all members. This reminds me of the old saying "put all your cards out on top of the table." Well, when this is done, you can begin to see what adverse impacts your proposed project may have on the environment. Our "charge" under NEPA, and our own guidelines, is to eliminate or minimize adverse impacts to the fullest extent possible. This leads us into developing alternative plans. These alternatives must be reasonable, viable, acceptable and implementable. They require decisions by the local landowners and sponsors of the projects. All of this will and does involve all segments of the public - federal, state and local agencies; private individuals; and conservation and preservation clubs and groups almost too numerous to name at this time. Again, this is "putting all your cards on top of the table."

There are, of course, problems in all of these environmental considerations. We have had to make major changes in our staff of people involved in this work since it requires much more effort on our part. We now have seven biologists in SCS in Mississippi whereas ten years ago we had only one. We are one of the few states that has a sanitary engineer on the state staff. He spends a large part of his time on water quality studies in the watershed program. We have very little expertise in the field of archaeology and history and this is certainly a major area requiring assessment of impacts. The Mississippi Department of Archives and History is now making these on-site studies for us under contract.

Planning and installation of our projects today is highly complex and time consuming compared to, say six or eight years ago. Instead of four or five project starts each year, we are now averaging less than one. This is extremely hard for local farmers and sponsors of these projects to understand - the complexity and timing involved. They get impatient and begin to ask why does it take so long and why must we consider all these environmental factors. One of our hardest problems is in this area of patiently guiding them in making decisions that we can all live with. We invite all of you to help us as much as possible in this regard.

I would like to explain one other part of our guidelines and this relates to our procedures for projects that were authorized for construction prior to the passage of NEPA. If the environmental assessment for these projects, or portions of these projects, indicates there would likely be no significant adverse impact on the environment or no environmental controversy, a Negative Declaration can be prepared by the State

Conservationist. This Negative Declaration would state the planned action, the probable impacts, consultation with other agencies, groups and individuals and the conclusion that there are no significant adverse impacts or controversy. A Notice of Availability of Negative Declaration is then published in the Federal Register by the Council on Environmental Quality. Copies of the Negative Declaration are mailed to all agencies, groups and others to whom we normally send draft environmental impact statements for review and comment. Some of you may have seen Federal Register notices or local newspaper articles about these Negative Declarations so I thought this explanation might be helpful to your understanding of their intent and meaning.

In the final analysis, according to our guidelines, we must have, for all our water resource development projects, an environmental assessment that considers the assessment factors I mentioned earlier. This assessment will determine if a Negative Declaration is appropriate or if an impact statement is necessary. We must have one or the other before we can proceed with construction. Regardless of which one is necessary, a Negative Declaration or an environmental impact statement, it must be published and either circulated or made available to the general public.

In summary, I am confident you will agree that environmental considerations <u>have</u> had a very <u>deep</u> impact on our water resource development projects. Some of us in SCS - and I will place myself in this category - have not liked some of the necessary changes, and in fact, have at time in the past even resisted some of them because it made our work so much more difficult and complex. But I will be the first to admit that our projects are now much better, more widely acceptable and certainly more palatable from an environmental standpoint.

Our policies and procedures now demand a lot of a professional. Most of us would find work less demanding if we could spin a cocoon around our discipline and live there, secure from the thankless task of criticizing the plans of others and safe from the even more unpleasant chore of accepting criticism of our own ideas. Environmental considerations in our projects, however, will no longer permit us to ignore the needs and demands of today's world. They require us to be responsive to the changes constantly occurring around us.