It's always a pleasure to participate in the annual meeting of the NWRA. Surrounded by the lushness of these beautiful islands, it's a little difficult to concentrate on water problems, but I want to share some thoughts with you on the future of water resources development in our country.

In this Bicentennial Year, our nation is pausing to look back on its remarkable history. And although the Reclamation program is not as old, we are approaching our 75th anniversary next year. So it would seem appropriate to reflect on how far we have come over that time, and especially to think about
where we are headed.

Each one of you here has contributed to the great legacy of the West—a legacy made possible in large part through the wise development of our natural resources, and, equally important, the wise management of our renewable water resources for the benefit of mankind. Beginning with the visionary concept our forefathers had of turning barren land into thriving productivity so people could live a life of quality and abundance, water resource development has evolved and broadened over the years into a program which serves multiple-purposes and brings magnified multiple-benefits.

In fact, I know of no other program within the Department of the Interior, or perhaps within government, which creates the variety of tangible benefits for people as does the Federal Reclamation program. Too many people mistakenly think of
Reclamation as a program to build dams primarily for irrigation. They are unaware, or fail to comprehend, how far-reaching the program really is, or how the concrete and steel of water control and regulating structures is translated into specific and long-term social and economic benefits for people and the nation.

It is true that irrigation is one of our most important functions. In 1974, for example, western farmlands irrigated by Federal Reclamation projects produced enough food to satisfy the annual needs of about 33 million people...no small contribution in this hungry world. And over the past 69 years of crop reporting, crops produced on Reclamation project lands have a cumulative gross value of over 45 billion dollars. This is seven and one-half times as much as the total 6 billion dollars invested in completed project facilities.
But irrigation is just one part of the Reclamation program, and there are numerous other benefits. For example:

---Reclamation operates the largest interconnected power system in the United States, over 16,000 circuit miles of high voltage transmission lines interconnected with many more thousands of miles of other public and private lines.

---Reclamation delivers enough municipal and industrial water to meet most of the daily requirements of about one out of every three persons in the West. Our M&I water deliveries last year were one-third more than the total combined water needs of the six New England states.

---Reclamation reservoirs are fast becoming some of the nation's most popular outdoor recreation attractions. Last year the top 10 Reclamation projects drew more visitation than the 10 most popular
western national parks.

---Flood control benefits provided by our dams and reservoirs set an all-time record in 1974--preventing over 170 million dollars in damages that would otherwise have occurred during the flooding season.

In addition, although too often unsung, the Reclamation program has provided highly significant environmental protection and fish and wildlife enhancement.

We are too inclined to emphasize the negative and fail to recognize the positive. How many hundreds of thousands of China Pheasants do you farmers feed along your ditch banks and on your field crops and residues each year?

The economic enhancement and stabilization also is often overlooked or taken for granted. The social and cultural advantages that accrue are real, but
again unsung.

I had planned to give you a rundown of the benefits of the Reclamation program in each state, but to do that here would have taken us into the dinner hour. However, I understand Carl Bronn has prepared summary sheets for each state and will distribute them to your Board of Directors at their meeting this afternoon.

All this has been made possible because the Reclamation program has been flexible. It has been quick to respond as its mission has been broadened by statutory enactment to include all sources of water for all beneficial uses to which western water can be put.

And we are not standing still. Our budget for fiscal 1976 is approximately 600 million dollars. When Congress completes the appropriations process, it may be greater. This budget is based on the
philosophy that construction of on-going projects should be conducted in an orderly and efficient manner. Conversely, stretchouts increase administrative and overhead costs, and delay the beneficial returns. If the philosophy behind the President's budget for 1976 continues to prevail, it is inevitable that our budget will be even greater for fiscal 1977 and succeeding years.

But although flexibility to respond to changing needs has always been a key feature of our program, I am concerned about the future. For despite all we have done in the past, and despite all we are doing today, I fear that because of the somewhat antiquated legal and institutional framework under which we in the water resources field operate, we may be ill-equipped to meet the new challenges presented by today's realities.

Our world is changing. We are faced with
unprecedented challenges in providing increased food and energy production, in meeting growing demands for traditional and sometimes competing uses for water, and in doing all those things in a way that does not have a devastating impact on our natural environment.

We must ensure that our people are well fed, well clothed, and well housed. Unfortunately, even in this the richest nation in the world there are perhaps millions among us who lack these basic necessities.

Moreover, our population is growing and will continue to grow. A recent publication by the Population Reference Bureau estimates that the population of the United States in the year 2000 will be somewhere between 260 and 265 million. This is about 50 million more Americans than at present, even though the growth rate has been slowed. This is a large number of people to add in so short a time,
and they too must be fed and clothed and housed.

We also need to increase domestic energy production to meet the needs of our expanding economy, expanding industry, and to provide for the comfort and well-being for our citizenry.

We face the task of maintaining a favorable balance of trade to preserve our economic independence and to shelter us from economic blackmail.

We need to strike a better regional economic balance between industry and agriculture, and a better balance in the distribution of our population. Of course, to accomplish this we must provide jobs and stimulate a continued growth in our gross national product.

In the West, the problems involved in meeting those goals come into sharp focus. The western United States has the largest share of the coal and other fossil fuel reserves needed for energy. The
West is an important food producing region. The West has an environmental heritage which must be preserved and protected. The West makes an important contribution to the economic well-being of our nation.

In fact, the West is blessed with just about everything except enough water at the right time and in the right places. And a reliable water supply is essential to producing more food and energy, to meet growing human needs, and to provide the industrial expansion needed to keep our country moving forward.

So in the West, where we will bear much of the brunt of meeting our national needs, we must be doubly careful to conserve precious water resources and to plan wisely.

How do we make certain that the water vital to attaining our national goals will be available in the West when it is needed?

One of the prerequisites, I believe, is the
development of a coherent national water policy—one that recognizes the critical relationship between water and our national objectives in food, energy, the environment and all the other problems which are so dependent upon water...one that recognizes regional needs and objectives as well as national needs and objectives.

We need a national water policy that is specific enough to accomplish national goals, yet flexible enough to recognize regional physical differences, human problems and opportunities. The objectives and programs in the Missouri River Basin are bound to be different than those in the Colorado River Basin. The problems and opportunities in the Pacific Northwest are vastly different than those of the southern Great Plains.

And although we must acknowledge those differences, we must also acknowledge our commonality. There is,
today, disturbing evidence of state isolationism and isolationism among competing interest groups. No western state could have reached its present day stage of development, growth, and prosperity without the help, materials, manpower, ingenuity, and mutual progress of other states. Interdependence among the states has created growth and strength. This will hold for the future as well as the past.

We must all face up to the fact that the clock is running down. Significant areas of the western United States face the prospect of devastating water problems relating to both quality and quantity within the next 15 to 25 years unless we begin to do something now. One of the great disadvantages in water resources development is that it takes that long, or even longer in some cases, to transfer an idea into reality. Therefore, we cannot wait until a crisis hits before we begin remedial action.
The need for a national water policy has been expressed many times. Virtually everyone attending the National Water Conference in Washington last April endorsed it as a goal. As a follow-up to that national conference, I note that the Thursday morning session of this convention will feature a panel discussion led by some of the participants in that conference; hopefully the panelists and those participating in that session will provide some answers as to how a national water policy should be established and implemented.

Regardless of how that policy is ultimately formulated, regardless of who is to be primarily responsible for implementing that policy, there is a role for each of us to play...as individuals and as members of the different organizations we represent at the Federal, State, regional or local level...in making certain that our water resources
are developed and managed wisely to attain the maximum benefit for the majority of people.

At the Federal level the prime concern must be for the common interests; the needs of all the people. The Executive branch and the Congress must work together to determine national priorities...on energy, on food; on environmental protection...within the framework of broad national goals and the free enterprise system.

Those priorities should reflect and take into consideration other policy decisions which affect the need for more food and fiber. For example, if we are going to continue to sell food to the Soviet Union and other nations of the world, we will need to expand our agricultural production. We are the most efficient producer of food in the world, and we ought to consider our food producing capability in terms of its possible long-range effect on a favorable balance of trade. How should
this relate to expanded irrigation with Federal assistance? Our national policy should clearly address such problems so that our water programs are kept consistent with national—and international—food, energy, and environmental policies.

As to those problems relating to interstate waters, the Federal Government should assume the leadership for regionwide planning and coordination of water resource development.

The Congress, through the legislative and appropriations process and on the recommendations of the various Federal agencies, has the responsibility for deciding the extent to which additional Federally funded public works are needed to provide water to accomplish our national goals. Most of the costs of such facilities should continue to be reimbursed by the beneficiaries, direct and indirect.

Congress also has the power to authorize and fund
programs for augmentation of water supplies where feasible and where needed. I'm speaking here of such programs as weather modification, desalting of geothermal brines and other brackish or saline waters, development of ground water, and recycling and reuse of water...all of which are designed to increase the availability of water to meet the needs of society.

The Federal Government has an additional responsibility in the field of water related energy production through the harnessing of hydropower. The Federal Government should continue a strong research program into other related forms of energy production which could be utilized in conjunction with hydropower, such as solar energy, geothermal energy, and low-head hydro production.

The Bureau of Reclamation with support of the Congress has launched major new initiatives in this
area. We are beginning a new study this year—the Western Energy Expansion Study—to identify and appraise ways to expand water-related energy production in the Western States. The study will range from identifying potential new sources of hydroelectric power to investigating supplemental energy production from the wind and sun.

As a matter of policy, the Bureau is now evaluating the potentials of solar energy in the design and construction of all new projects. As the first major innovation, we are studying the potential of using solar electric generation to supply part of the power needs for the world's largest desalting plant which we are currently designing and will build near Yuma, Arizona.

The Federal Government has a very heavy responsibility in protecting Indian rights and in resolving Indian water claims which are confusing
and are placing a cloud on non-Indian water rights at the present time. And in cases where excess or unappropriated water may be available...or where Federal water rights have been obtained pursuant to state water right procedures...the Federal Government has a water marketing responsibility.

The national government has an overriding responsibility to make certain that our national resources are developed and used wisely. Enforcement of this responsibility is usually shared with the states or is assigned to the states under a Federal, umbrella-type framework. Federal involvement usually takes the form of national conservation efforts and national environmental protection laws.

That is the Federal role as I see it. Now what is the role of the States? At the outset, let me say that I do not believe the Federal Government should infringe upon the long-standing right of the States
to allocate their water entitlements. Each state has
the right to determine under its own statutes how
its unappropriated water is to be used.

However, in many States water law has not kept
pace with changing emphasis on uses of water. While
basic water rights laws in the West...based on the
concept of first in time is first in right...have
served quite well in the past, much remains in today's
world to overhaul and tighten up the body of state
water law.

Present water rights, although designed to
protect and treat all rights holders fairly, have in
many cases complicated the allocation of scarce supplies
of water to those uses most important to rapidly
changing cultural and economic conditions.

Therefore, each State must assume the leadership
role in evaluating existing water rights with the
objective of reconciling present water uses with water right applications. In particular, emphasis should be placed by the States on resolving the problems of abandoned, duplicative, and inactive rights, and on increasing efficiency of water use.

That task is not easy. We find many apparent conflicts, both in the letter and the spirit of the law. For example, in one State we find a 1917 water code which allocated water on a first come, first served basis, and a 1971 Water Resources Act which says that water must be allocated "to obtain the maximum benefit."

In some States, we find that irrigators are actually discouraged from investing money in facilities which would save water because under the laws of those States any water that might be saved must be allocated, not to the irrigators who make the
savings, but to those next in line to receive water under the States' priority systems.

Despite the conflicts and the complexity of the problems, the States have a clear responsibility to improve their water laws to provide better response to public demands and increased efficiency in water use. The States must also take the leadership in defining beneficial use and in promoting on-farm and other water conservation methods to stretch scarce water supplies. The Federal Government can provide the research and technology in developing water conservation programs, but we do not have the tools to implement them. This can only be done through the States and the water users themselves.

The States also have an important planning responsibility—not only within their own borders but within river basins which ignore political boundaries. The States must coordinate with each
other, perhaps through River Basin Commissions or similar cooperative arrangements, to develop and implement comprehensive basin plans with Federal participation, but not Federal domination.

In the case of intra-State streams, State Governments should take the major responsibility for strong public involvement programs and basinwide or State-wide reconciliation of divergent interest groups involving competing water uses, all consistent of course with national policies. When regional or inter-basin interests are involved, the Federal Government must assume a major role in public involvement programs to make certain that all interests and viewpoints are equitably considered, and that study definitions and standards employed from State to State are comparable so that accurate basin totals can be obtained.

I think the States should take a more active role in cost sharing in water resource programs. The
cost-sharing philosophy is gaining greater acceptance and momentum as time passes. Several of the 17 Reclamation States have either entered into agreements or have indicated a willingness to participate in cost sharing with the Federal Government for water resource development facilities.

Now there is one other important role that I haven't yet mentioned, and that is the role of the water users themselves, the local people like members of the NWRA and other user groups, as well as groups concerned with environmental protection. They too have important responsibilities.

First of all, I feel strongly that local people should play an active part in deciding the priorities for water allocation by participation at the beginning and throughout the planning process. I urge you to participate fully in the decision-making process. Let your voices be heard, your views be known.
But the role played by all participants in the planning process must be a responsible role recognizing national as well as regional priorities, and long-term as well as short-term objectives.

We will have problems and we will have differences of opinion. But it serves none of our interests, individually or collectively, to provoke a modern-day water war between the West and Washington, between energy and agriculture, or between responsible development and environmental preservation.

All of our problems can be solved through communication, coordination, and cooperation, including some give and take among all interests. They cannot be solved through confrontation and obstruction. Objectivity, knowledgeable ability, and integrity are key elements required.

I am optimistic that our problems can be resolved in a way that no one group or competing interest is
seriously injured. There are some who fear that water presently being used for irrigation may be transferred to energy uses at the expense of the individual farmer. I do not believe the situation will come to this, and I will certainly do everything possible to prevent it. However, it is well for all of us to remember that water facilities developed for short-term energy needs today can be used for long-term agricultural needs tomorrow.

Water is one of our few perpetually renewable natural resources; it will still be available long after our fossil fuel resources are exhausted or, more likely, after we have shifted to nuclear, solar, or more exotic means of meeting our energy needs. The interim question is how best to use the West's limited water supply, and how best to plan for the future so that all legitimate regional and national needs can be met.
Another obvious way for you to help is through your continued support of responsible, well-conceived plans to develop more effective means, structural and non-structural, to store, manage, and deliver more water to generate power and increase the yield of farmlands while at the same time meeting the other increasing needs of our growing population. Those other essential needs include flood control, navigation, municipal and industrial water, fish and wildlife protection, environmental enhancement, and water quality control.

There are ways in which water can be put to greater beneficial use which directly affect you, as individual farmers. One is by increasing the efficiency of our present and proposed water distribution systems.

Thirty percent of the water diverted for use in the West is now being lost in transit—primarily through seepage and evaporation—before it reaches
the farmers' headgates. Then, unfortunately, on-farm irrigation operations on the average are no better than 40 to 45 percent efficient.

Not all of this, of course, can be considered a loss, especially in the case of upstream diversions, because much of the deep percolation returns to the stream and can be re-diverted.

Nevertheless, great opportunities do exist for you to make more water available for beneficial use by improving your management techniques and by upgrading your facilities—through concrete canal linings or closed-pipe distribution systems, through more sophisticated controls on the farm and the conversion from conventional to more efficient irrigation methods. Many distribution systems are being put in pipe and the trend is moving toward sprinklers, while experimentation is moving toward drip and bubbler methods. Acceleration of these conservation measures is needed.
We have had some success with the Irrigation Management Service program, under which we in cooperation with the Department of Agriculture have been attempting scientifically and systematically to establish irrigation practices which insure more efficient use of water on the farm. It is a sophisticated program, using computer analyses of field data to determine more precisely when to irrigate and how much water to apply. Reclamation personnel assist in developing the IMS program but after it is developed and its value established we expect the irrigation districts and the farmers who reap the benefits to finance the continuing program. The benefits include increased crop production, better quality crops, improvement of water quality, reduction in percolation and drainage losses, conservation of energy by keeping pumping at a minimum, the reduced leaching of
fertilizers and salts, better weed control, and reduced operation and maintenance costs. So far, a few of you have contracted for this service on a continuing basis from commercial firms, but we haven't yet convinced the majority of you that the benefits outweigh the costs.

I am convinced that the future of water resources development in the West lies in the total management of the water resources in all of the major river basins in the West.

Total water management involves basinwide programs for conservation and improved efficiencies in water management and use, coordinated scheduling of river basin water storage and control works, salvage and reclamation of poor quality supplies, conjunctive use of surface and ground waters, reallocation of water supplies to higher uses, and all other such practices that promote the fullest and highest uses of a basin's water supplies. For the total water management
concept to be successful, it is essential that all local, State, regional, and national entities involved in a basin or area's water planning, conservation, and development programs work in close cooperation.

I submit to you that we can meet all of the seemingly conflicting demands our Nation faces today. But, it will require an unprecedented degree of cooperation among all levels of governments and all interests. It will require modern tools, such as a national water policy and a practical means with which to implement it. It will also require continued advances in technology and research to obtain maximum use of all sources of water, and an effective water conservation effort.

But it must be done. Theodore Roosevelt sounded this warning in 1907. He said:

"To waste, to destroy, our natural resources; to skin and exhaust the land
instead of using it so as to increase its usefulness, will result in under-mining in the days of our children the very prosperity which we ought by right to hand down to them amplified and developed."

We are the children Roosevelt spoke of, and as such, we face an even greater challenge. We must resolve the serious problems of today while protecting the resources of tomorrow. If we fail, we will not only undermine the prosperity of our own children, we will undermine the very foundation of this country.