A Look Ahead in the Reclamation West

Has it occurred to you that we in the field of water resources will be accomplishing during the next quarter century an achievement in research and development quite comparable to making a trip to the moon?

Just consider the challenge that lies ahead of us:
We must find, develop and distribute additional water for twice the population now living here in the West and in the Nation as a whole.

We must cope with regional water shortages of monumental size and scope. What I refer to are heavy imminent shortages in such arid areas as the lower Colorado River Basin, where large-scale importations appear to be necessary to solve present and future water supply problems in an area that is mining valuable underground aquifers and which has over-committed its surface water sources.

We do not have bold astronauts—or should I say
"hydronauts?"—riding flaming rockets out into limitless space. But we are investing millions in research efforts directed at trying to milk snow from the clouds. This is a technological challenge of significance in which the Bureau of Reclamation is taking an active role of leadership and organization.

The Bureau of Reclamation also is taking the initiative in research efforts to salvage waste water, and to reduce tremendous losses of valuable water through evaporation, seepage, and consumption of water by useless plants.

Also we are continuing our multimillion-dollar conventional project investigation and construction program that has given the West a $4-1/2 billion dollar physical plant for the conservation and utilization of water resources. A plant, I might add, that this year delivered an adequate supply of water to 11 million people and 8 million acres of land.

Moreover, President Johnson has now given us and other public agencies a broader international challenge as well. In his recent talk to the International Desalting Symposium, the President called upon the countries of the world to join the United States in an
imaginative new program of "Water for Peace." The United States, he said, as he disclosed preliminary plans for an international water supply conference next year, is "prepared to contribute its share of the resources needed for an international crash program to deal with world water resources. We ask other nations to join us in pursuit of a common objective. That objective is: Water for all humanity."

This is the true dimension of the water resource problem we are coping with here in the Missouri River Basin and elsewhere. And you may be assured that what you and your water-user organizations and your local and State agencies learn from your own research and applied science will be communicated to help others, not only in this Nation and this hemisphere, but also throughout the arid and semi-arid zones of the world. Conversely, a path of communications is opened to bring to us what others discover. As President Johnson said, "The Earth's water belongs to all mankind. Together we must find ways to make certain that every nation has it in full share and that there is really enough of it for all nations."

Against this background, I was pleased to receive
your invitation to take this look ahead in the Reclamation West. My pleasure was not merely discovering that this was a forward-looking group—because I have long been aware that it is. Rather, I was gratified that you were actively interested in looking ahead and utilizing existing funds and legislative authority to help solve mutual problems in the challenging years ahead.

Fortunately, we do have the benefits of some new legislation to assist us in resource planning and development. And your program committee suggested that this was one of your particular interests.

Perhaps the most far-reaching and significant of the new laws in the water resource field enacted by the first session of the 89th "Conservation" Congress was the Water Resources Planning Act—Public Law 89–80, signed by President Johnson in July. This act gives statutory recognition to something we have long known in the Reclamation program—that the river basin is a logical base for comprehensive water resource planning. This basin-approach was put into practice here in the Missouri River Basin in the 1940's, following earlier applications by the State of California and Reclamation
in the Central Valley of California, comprised of the San Joaquin, Sacramento River Valleys and delta area, and by TVA in the Tennessee River Basin.

As you are aware, we in Reclamation also have discovered that the next logical step in water resource development in the semi-arid and arid parts of the country, is major inter-basin or regional planning. This approach recognizes that in some river basins, the surface and ground water resources may not be adequate to support future economic and population growth and that importing water from other sources may be necessary. This already has been accomplished here in the Missouri River Basin, with trans-mountain diversions from the Colorado River. Sizable imports also are being made into the Great Basin in Utah and into the Central Valley and into the South Pacific drainage basin in California. Rather extensive imports of water for the lower Colorado River Basin have been discussed. The Parsons Engineering firm in Southern California has even advanced a multibillion dollar water development scheme encompassing the western half of the continent. This is known formally as the proposed North American Water and Power Alliance,
and more commonly as NAWAPA or the Parsons plan.

The Water Resources Planning Act provides the mechanics for considering and coordinating Federal Government participation related to river basin developments that the future will demand, but does not extend these guides to inter-regional transfer potentials. In fact it precludes their consideration by Federal agencies. This Act also created the Cabinet-level National Water Resources Council, chaired by Secretary of Interior Udall. The Council, which had been established earlier on an ad hoc basis, was organized and functioning when the prolonged water shortage in the Northeast and the Great Lakes States dramatically came to public attention earlier this year. This Federal Council and the River Basin Commissions—under which the New England Commission has already been established—will prove valuable tools in expediting and coordinating the national effort in water resource planning and development during the difficult years ahead.

Another valuable asset to research and planning in this field was provided in legislation approved in 1964.
This was the Water Resources Research Act of 1964. That program gives to water resource development what the Hatch Act of 1887 gave to American Agriculture—an adequate research base that draws upon the scientific know-how and facilities in every State. Utilizing grants authorized in this far-reaching legislation, all 50 States and Puerto Rico have established water research laboratories, essentially all at the land grant colleges which have made such an outstanding contribution to agriculture. Research in the water resource field has not been commensurate with the burgeoning needs, and we are all looking forward to vital contributions from this new research system, which appears destined to win world renown comparable to that enjoyed by our agricultural research services. I believe that most of you are aware that a distinguished educator from the Missouri River Basin, Montana's Dr. Roland R. Renne is director of this important program.

Another new law the Federal Water Project Recreation Act (Public Law 89-72), enacted last July, fills in a void in recognizing and assessing recreation benefits that accrue from Reclamation projects. This void has
existed with a few significant exceptions, virtually since the program began. Most of us, I am sure, have long recognized that once a reservoir or waterway is constructed in the West, it immediately comes into use by fishermen, duck hunters, campers and picnickers, boating enthusiasts, water skiers, and other water-oriented recreationists. On some of our older projects, these recreational contributions have been tremendous, but the structures have been built and operated at the expense of the water-users and there has been little or no public cost-sharing participation, within our program, in recognition of the recreational bonanza provided as a dividend of Reclamation. Realization of full benefits from this corollary resource was dependent on development of public use facilities by other Federal and non-Federal agencies.

The new Recreation Act provides that in planning any new multiple-purpose water resource development, consideration shall be given to whatever opportunities the project may afford for the creation of outdoor recreation areas and for the enhancement of fish and wildlife values. Where such opportunities exist in
new projects, the Act provides a basis for sharing between Federal and State, or local interests the costs of developing and administering these potentials. The result should be more adequate development of the recreation potential of our Reclamation waterways and a better division of the costs in multiple-purpose projects.

The new Recreation Act also provides, for the first time, general but limited authority to develop needed recreation and fish and wildlife enhancement facilities on existing projects. The impact of this authority will be most significant at Reclamation reservoirs where recreation management responsibility has been assumed by non-Federal agencies. We are now initiating studies to implement development at an early date at reservoirs where needs are most urgent. Under the Act, Federal costs are limited to $100,000 for each reservoir on a cost-matching basis.

This Act, incidentally, contained a proviso altering a procedure that had been in effect in the Reclamation program for the last six decades. The Bureau is required by this Act to obtain statutory authorization for all new project feasibility investigations as well as for
continuation of feasibility studies currently in progress. Heretofore, the Bureau has had general authority for project feasibility investigations, but not for project construction. Now we will be faced with the requirement for passage of an act granting prior Congressional authority for all feasibility investigations to be conducted in the future. We are proceeding with plans for legislation covering our immediate and short-term program needs.

One of the truly historic legislative measures enacted by the 89th Congress may well be the Saline Water Conversion Act (Public Law 89-118). This Act authorizes expenditures of up to $185 million by 1972 for accelerating the perfection of an economical means of converting saline and brackish water into fresh water. Backers of this program hope that it will produce the breakthrough long hoped for in man's efforts to make practical large-scale desalination of water. Desalting of water, of course, is no longer a dream. Three of our cities - Buckeye, Arizona; Port Mansfield, Texas; Coalinga, California - already depend on desalting plants for the major part of their water supplies. This program is of
direct interest to areas with access to saline and brackish waters susceptible to processing; but it is also of interest to headwater areas which may benefit from the availability of new water supplies by this method downstream. We in Reclamation are cooperating in this challenging program of our sister agency, the Office of Saline Water, with intense enthusiasm.

Three new Reclamation projects, with a total estimated investment cost of $700 million dollars were authorized by the first session of the 89th Congress. These included the long-awaited Garrison Diversion Unit in North Dakota, the Auburn-Folsom South Unit in the Central Valley Project in California, and the Southern Nevada Water Supply Project.

Awaiting action in the forthcoming second session are nearly 1-1/2 billion dollars in projects already investigated and reported to the Congress. This group of 13 proposed projects includes the $84 million Mid-State Division and the $49 million North Loup Division, both in Nebraska.

Waiting in the wings are another 17 projects, with a total investment cost of $2 billion dollars.
Units of the Missouri River Basin Project in this group are the Oahe Unit, and the Tower, Greenwood and Yankton Units, South Dakota, and the O'Neill Unit, Nebraska.

Of course, I cannot speculate on what action the Congress may take on these 30 projects when they are all eventually recommended for authorization, but it is gratifying to me that we will be able to have before the Congress in one session a total planned backlog of about $3-1/2 billion in potential water resource developments in the West which we have investigated and found feasible.

We have been looking ahead in the West and in the world of water resource development generally. In the few minutes remaining, I would like to tighten up the perspective and scrutinize the future here in the Missouri River Basin.

Only a month ago, the engineers and contractor personnel on our Yellowtail Unit dropped the stoplogs in the diversion tunnels, causing the largest of the tributary dams on the Missouri River Basin system to start filling. This was an important construction event
and we are proud that we were able to top out and close this largest concrete structure in the system about 6 months ahead of schedule. A 1,375,000-acre-foot lake—71 miles long—will back up behind the 525-foot-high concrete Yellowtail Dam on the Bighorn River in southeastern Montana. The 250,000-kilowatt powerplant is more than half completed and the first generating unit is expected to go on line next February. Recreational use of the forming lake is expected to achieve significant proportion next year. Legislation has already been introduced to make this a National Recreation area. Water stored in Yellowtail Reservoir will be available to provide irrigation supplies for about 44,000 acres of land in the Hardin Unit and numerous pumping units serving an additional 180,000 acres along the Yellowstone River.

This is progress on the Missouri River—and we are proud to have a part in it.

However, from your standpoint, an event of early last August was probably of greater import among water users, present and potential, throughout the Basin. This was the Congressional authorization of the
$207 million Garrison Diversion Unit in the Dakotas. For several years, authorization of large-scale irrigation developments in the Basin has been held up pending a detailed financial study of the project required by Congressional committees. This large and complex financial study was completed in 1963, at which time Congress was assured that with certain authorized accounting concepts and the imposition of a small increase in the MRCB system firm power rate, we could assure payout of the existing project units and those actively contemplated, such as Garrison, Oahe, and Nebraska Mid-State. This action broke the authorization log-jam, and the long-planned Garrison development was the first major proposal to meet Congressional approval.

I don't have to tell you how important this event was to the Basin. For two decades you have watched the construction of large storage reservoirs on the main stem of the Missouri and its major tributaries, some of them flooding out large acres of rich river bottom lands. Roughly 90 percent of the storage space contemplated in the 1944 Pick-Sloan Act has been
accomplished in this monumental building program. However, less than 10 percent of the contemplated irrigation development has been accomplished.

Garrison Diversion, therefore, is the bellwether for some long-awaited irrigation development that will help stabilize agriculture and contribute to growth of the livestock industry here in the Basin. It also will develop water for municipalities—some 14 in the Garrison Unit area—and industry, and contribute major recreation and fish and wildlife benefits to the area.

Another factor in favor of the ultimate development of the feasible water resource projects under investigation throughout the Basin is the new emphasis on water supply that has grown out of the sustained drought in the Northeast. Heretofore, many residents and publications in this area have been hypercritical of the proposals to develop water for the Mid-West. They have chosen to identify such water development solely in terms of current, essentially transitory agricultural surpluses, ignoring the manifold values of an adequate water supply in a semi-arid area. Now, with a practical demonstration—actual or imminent—of
the value of an assured water supply, in their own area, we can assume that these partially informed critics of water for the West will have a change of heart and be able to recognize what water means to the more arid sections of our country, and to appreciate that it is infinitely better to utilize precious water than to let it waste into the sea.

We in Reclamation have been engaged for six decades in the development of water storage projects in the Missouri River Basin. And anyone who has visited our pioneering North Platte and Lower Yellowstone Projects is immediately impressed with the tremendous economic contributions that a supplemental water supply can make in this fertile Plains area. These and other irrigated areas tell an impressive story of the inherent value of the combination of good land and adequate water. It is a story that must be told, not only to influential people from the outside, but to the residents here in the Basin, as well. And this audience and the members of your organization are the best informed on this subject, the logical ones to tell the story of water resource development in the Missouri Basin, and to
keep telling it until it takes.

Looking ahead at Reclamation in the Missouri River Basin, the prospects can best be described as challenging. But for those who welcome a challenge, the outlook is rich with promise.

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