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COOPERATION IN BASIN DEVELOPMENT

It is a real privilege to meet with the Inland Empire Waterways Association on the occasion of its Twenty-Third Annual Convention and discuss the activities of the Corps of Engineers as they pertain to water resources development. Although this is the first time I have had the pleasure of appearing before your Association, I am aware of your significant contribution to the comprehensive development of the water resources of the Columbia River Basin, and I know that your group and the Corps of Engineers have an identity of interests that assures the necessary teamwork so essential between Government and the citizenry of any region for development of its natural resources.

In my opinion the American people today are more fully aware of the true worth of their water resources than ever before. The growing need for water resource development has been accompanied by a growing public recognition of its importance--not only to the region immediately concerned but to the entire nation.

Here in the Pacific Northwest, because of the magnitude of the development program which though moving ahead is pressed to keep pace with the regional demands, the public is even better informed than in most other regions. And in no other region that I know of

is the economy so closely tied to these developments. That the Inland Empire Waterways Association has had much to do with public understanding of water resource development I am well aware. Your twenty-three year record speaks for itself. During this event-filled period, which has seen the old stern-wheeler give way to the modern barge and tug on your inland waterways and great new industries spring up as new power became available, you have maintained effective liaison between the people who benefit from the projects we plan and build, and the Congress which in accordance with the people's will and its own considered judgment provides the funds.

In the two decades that have passed since construction of Bonneville Dam, the first multiple-purpose federal project on the Columbia River, amazing developments have been accomplished to improve navigation, provide urgently-needed hydroelectric power, and increase flood control and irrigation benefits. There are now four large multiple-purpose projects on the main stem of the Columbia River producing power (Bonneville, McNary, Chief Joseph and Grand Coulee), and two others (The Dalles and Priest Rapids) are under construction. First power will be produced at The Dalles Dam in November 1957 and construction is just starting on Priest Rapids Dam, which, although at one time authorized for construction by the Corps of Engineers, is now being built by the Grant County Public Utility District. John Day Dam, authorized for construction on the Columbia River 26 miles upstream from The Dalles, Oregon, is in the planning stage. In addition, a number of important projects are either constructed, under construction or being planned on streams tributary to the Columbia.

In comparison with development in other river basins the Columbia River program stands out as one of the most impressive. In fact, for a number of years this region has topped all others in allocation of construction funds for civil works projects. But even so, the progress that has been made to date leaves no comfortable margin between this region's minimum needs and actual accomplishment in most phases of the comprehensive program, including navigation, flood control, irrigation, power, recreation, fish and wildlife, and stream pollution abatement.

From my visits to various parts of the country, it has seemed to me that there are differences of concept--as well as differences in the degree of public understanding--of water resources development. In one area, for example, the flood control phase of the over-all development program may be of paramount interest to the public because of recurring flood disasters. In another you may find that navigation is emphasized, or possibly power, as here in the Pacific Northwest. But gradually people everywhere are coming to realize that each individual water use should be viewed as part of the whole--that navigation, flood control, irrigation, power generation, pollution abatement, recreation, domestic and industrial needs are merely facets of one indivisible problem and must be so approached.

Since World War II this great region drained by the Columbia River has witnessed a rapid industrial growth directly attributable to your water resource development program. Abundant low-cost power, low-cost transportation by waterway, and water storage in reservoirs for flood control and flow regulation are all fundamental requisites of industrial development in this region. I need hardly

assure you that the Corps of Engineers will continue to cooperate with you toward full development of the water resources of this river basin.

Careful and realistic planning is an important ingredient which is vital to full and balanced development of our water resources. While we have always tried to look as far into the future as we can there is no infallible device--no crystal ball--which permits a clear view of all the relevant events that lie ahead. The shape of things to come must always appear shadowy at best. This being so, we must revise our plans from time to time to keep abreast of a world that is in a constant process of change.

Here in the Columbia Basin the Corps of Engineers, as you know, is conducting a review study of water and related resources aimed at bringing your basin program up to date. The Corps' Columbia River 308 Report, completed back in 1948 and now under review, was itself a review of an earlier and less comprehensive report of this river basin, completed in 1931. The present study, or review of the earlier review, is scheduled for completion in October 1957.

These studies are being conducted in full view of the public in accordance with the Corps of Engineers' established policy. In hearings conducted throughout the region last July all the various interests--private and public, representing a broad cross section of the people living and working in this region--were invited to express their views. They did express them and the record of the hearings is being carefully reviewed, conflicting opinions weighed, and in some instances revisions made in the tentative programming.

of projects where testimony indicated reconsideration was clearly justified.

Planning water resources development cannot be conducted in an ivory tower, for the problems we encounter don't deal exclusively with engineering matters nor always yield to scientific deduction. Some of them are human equations and these, as you can guess, are invariably the most difficult to solve. The Corps' policy has always been to invite public participation in the planning of projects on the theory that the public must rightfully be consulted before the facility takes shape.

Today we are more convinced than ever that this policy must be strictly adhered to without compromise, though it might not always seem expedient or the quickest way of getting things done. Multiple-purpose development of our water resources can only be approached in a spirit of open-minded cooperation. As planning becomes more and more comprehensive and inclusive, affecting more and more people at all levels of government - Federal, State and local--cooperative effort becomes increasingly important. It is obvious, therefore, that groups like yours familiar with our problems and with a special understanding of the more complex aspects of our program will share increasingly in basin planning for full and balanced development of your water resources.

I am sure that your organization during its 23 years of close association with the development of this region has become as dedicated as we of the Corps to this fundamental concept--that whoever builds on our rivers for whatever purpose, must allow, to the greatest extent feasible, for the best possible ultimate use,

and so build that future generations will not be denied the benefits of optimum development. Thus, all construction should be carried out in accordance with comprehensive plans--comprehensive in that they take into consideration all the resources of the basin; and in that they foresightedly provide for the future needs of our growing nation.

Although I enjoy no special gift of prophecy, I think it is reasonable to assume that the projects we shall build in the years ahead will be even more complex than those of the past. We must, accordingly, be even more efficient in our planning. Structures and projects must be designed to yield the utmost benefit from each drop of water as well as from each dollar invested. This can be contrived if each project is an integrated unit of a combined and coordinated operation. And in our planning and building let us be vigilant in conserving all of our resources--even those we do not seem to need at the moment.

So abundant is water in the Columbia River Basin, that you have had to give relatively little thought to water supply problems which have been a matter of critical concern to some areas, particularly our great industrial centers. Industry is using about 8 times as much water as it did in 1900 and by 1975 will be using $2\frac{1}{2}$ times as much as it does now. Water supply may eventually become the most important single factor in determining the location of an industrial plant. Cities and municipalities in a number of areas have been feeling the water pinch--at first only in a few isolated instances, but more recently in greater numbers.

It is perhaps generally recognized that the water supply problem has two aspects. On the one hand, there is what we might call the

local aspect--the problem of individual communities and industries in finding sufficient water to continue to live and grow. Such problems have been considered primarily to be matters of State and local responsibility, and we of the Corps of Engineers believe that they should continue to be so considered. At the same time we realize that these local or individual problems have become so widespread and serious as to constitute in the aggregate a national problem. It is not, therefore, illogical that the Federal government should cooperate with State and local agencies in the solution of these problems. In view of these facts, it is our belief that water supply should be considered in all future investigations.

We also recognize that reservoir projects provide sizeable benefits through regulation of stream flows in the downstream areas for many purposes such as water supply, pollution abatement, fish and wildlife and recreation. When such storage is included to augment water supplies for specific cities, industries or users who would acquire an assured right we consider that such beneficiaries should be required to pay. However, the effect of low flow regulation which provides widespread, general, and non-exclusive benefits to many interests in downstream areas is more nearly akin to reservoir effects in controlling floods. In such cases it would be difficult, if not impossible, to determine beneficiaries with sufficient exactness to obtain repayment, and such regulation, we believe, should be considered non-reimbursable.

A lack of sufficient water in a stream can be even more serious than an excess of water, and often it is possible to prevent either

of these extremes by a single regulatory project or group of projects, as, for example, your Willamette Valley dams which store water during the flood season and release it during the low water season.

The relationship between low-flow regulation and flood control has long been recognized. As early as 1908 the Inland Waterways Commission, in its great pioneering report, said: "Engineering works ...affect favorably the regimen of the streams, including floods and low waters. The annual floods of the United States occasion loss of property reaching many millions of dollars with considerable loss of life, while the low water of the late summer involves large loss in diminished water supply, in reduced power, and in the fouling of streams with consequent disease and death." Here, as in many subsequent documents, flood control and low-flow regulation are treated as two aspects of the same function--the beneficial regulation of the amount of water flowing in a watercourse.

In this river basin, as in others, the navigational aspect of comprehensive water resource planning is moving ahead. Among improvements in the interest of navigation, requested for inclusion in the current Columbia River review studies, are a 40-foot channel depth--instead of the presently authorized 35-foot depth--from Portland-Vancouver to the mouth of the Columbia, and completion of the ship channel to The Dalles. Also urged by local interests for consideration is extension of barge navigation on up the Columbia River to Wenatchee, Washington, and on the Snake River as far as Lime Point, Idaho; standardization of lock sizes on the Columbia and Snake Rivers; and provision of a new lock with larger dimensions and easier approaches at Bonneville Dam.

With the assistance of the great dredge Essayons, loaned to the North Pacific Division by the New York District, an improved entrance channel one-half mile wide by 48 feet deep is being provided at the mouth of the Columbia River, to assure easier and safer entrance to the river for large ocean vessels under all weather conditions. This is a giant stride which should not only improve the status of Portland as an important deep-water terminus, but also benefit the many river ports between the Columbia's mouth and far inland, serving the entire Inland Empire.

Progress in navigation improvements is being made in other river valleys. The long-needed modernization of the Ohio River waterway has at last gotten under way. Construction is proceeding on the St. Lawrence Seaway, and deepening of the connecting channels between the Great Lakes has been authorized. On the Missouri, the construction of Gavins Point Dam provides a substantial measure of control over the stability of streamflow on the lower river---a necessary prelude to the further development of navigation on that important stream. The vital Calumet-Sag channel, which will link the Mississippi River navigation system with the Great Lakes, is also under construction. At the other end of our mid-continental navigation system, completion of Algiers Lock and Canal some months ago provides a better link between the Mississippi and the Gulf Intra-coastal Waterway.

Many important water resource development programs throughout the nation are being delayed because of apathy or local disunity. The perennial disputes over power, controversy over fish and wildlife

values, the old argument between upstream and downstream interests in the development of a stream--these and other controversial issues continue to stagnate developments in a number of regions.

You have areas of disagreement in the Columbia River Basin, too, and some of them have yet to be resolved. But while you have not always presented a united front on all proposed improvements, I think the unity you have achieved is remarkable, considering that in this basin there are so many possibilities for conflict. The regional economy here is dependent in large measure upon one great river system which must be shared by many different interests, each of which would place a different priority on the various phases of river basin development. Moreover, your river system is not only interstate but international which increases the potential for disputes. The international aspect of Libby Dam, involving agreement with the Canadian Government because the reservoir would extend over the boundary into Canada, is holding up this excellent project at the present time. But despite certain elements of disagreement, they are overshadowed by the fine cooperation between agencies and communities, and between the many diversified interests working together in a give-and-take spirit, that has provided the necessary impetus to achieve in a relatively short period of time the things that have been accomplished in this river basin. On the international level this cooperation is provided through the International Joint Commission. On the local, state and interstate levels teamwork is achieved through such organizations as yours whose tireless efforts have accomplished so much in minimizing discord and sustaining the necessary enthusiasm to keep the development program moving ahead.

The cooperation and purposeful effort on the part of the citizens of this region in working with government agencies has not gone unnoticed by Congress, which has indicated its approval by continued support of your development program. As I mentioned previously, this river basin again this year and for several years past has been in the foreground of the civil works picture, leading all others in appropriations.

Congress this year provided \$10,000,000 more than was requested for project maintenance work, increasing total Operation and Maintenance funds to approximately \$96,000,000. It is no secret that the Corps has been greatly concerned for a number of years over the accumulating problems of deferred maintenance on both coastal and inland waterway facilities. About 60 percent of these additional funds will be used for structural rehabilitation of protective navigation structures, the remainder for channel work. Of the 72 projects in all parts of the country among which this money will be shared, 27 would have received no maintenance work during the coming year if the extra \$10,000,000 had not been provided.

The increasing concern being manifested, not only in Congress but in all segments of our American community, from the grass roots to the top level of government, over water-resource problems is one symptom of the dynamic growth of our nation. This growth, in turn, is likely to create more problems, and will require still more construction. For in developing the nation's water resources we serve the continued and expanding development of America--a process that will never stop as long as our national economy survives.

The united, cooperative action of an alert and informed citizenry, so well exemplified in the Columbia River Basin, will always be needed to guide and inspire our progress in the future, no less than in helping to resolve our problems concerning what and how we should build today, in the interest of sound development of water and related resources.