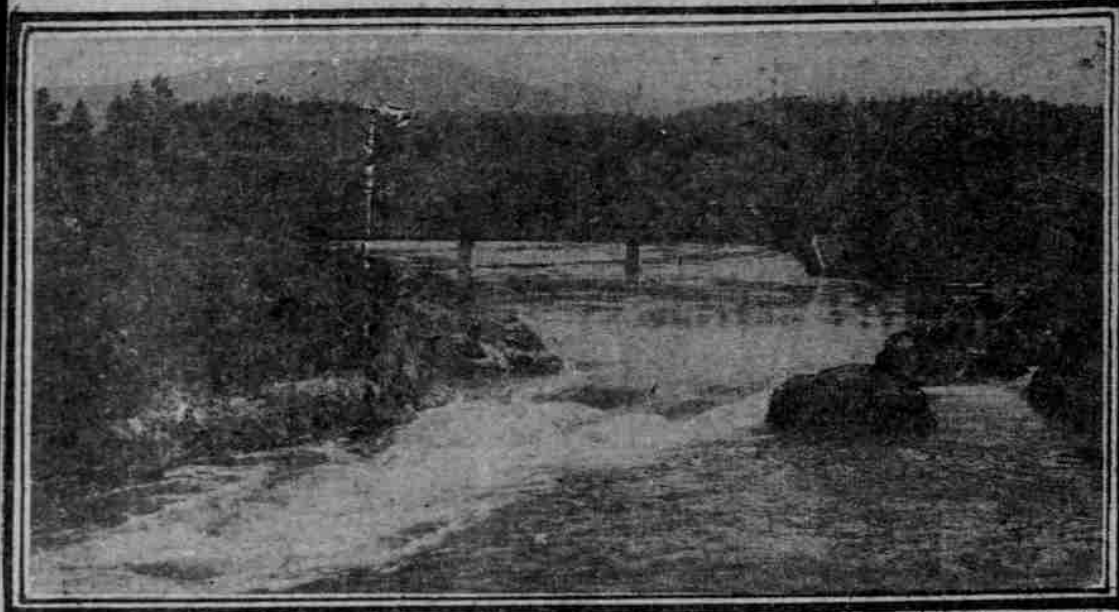
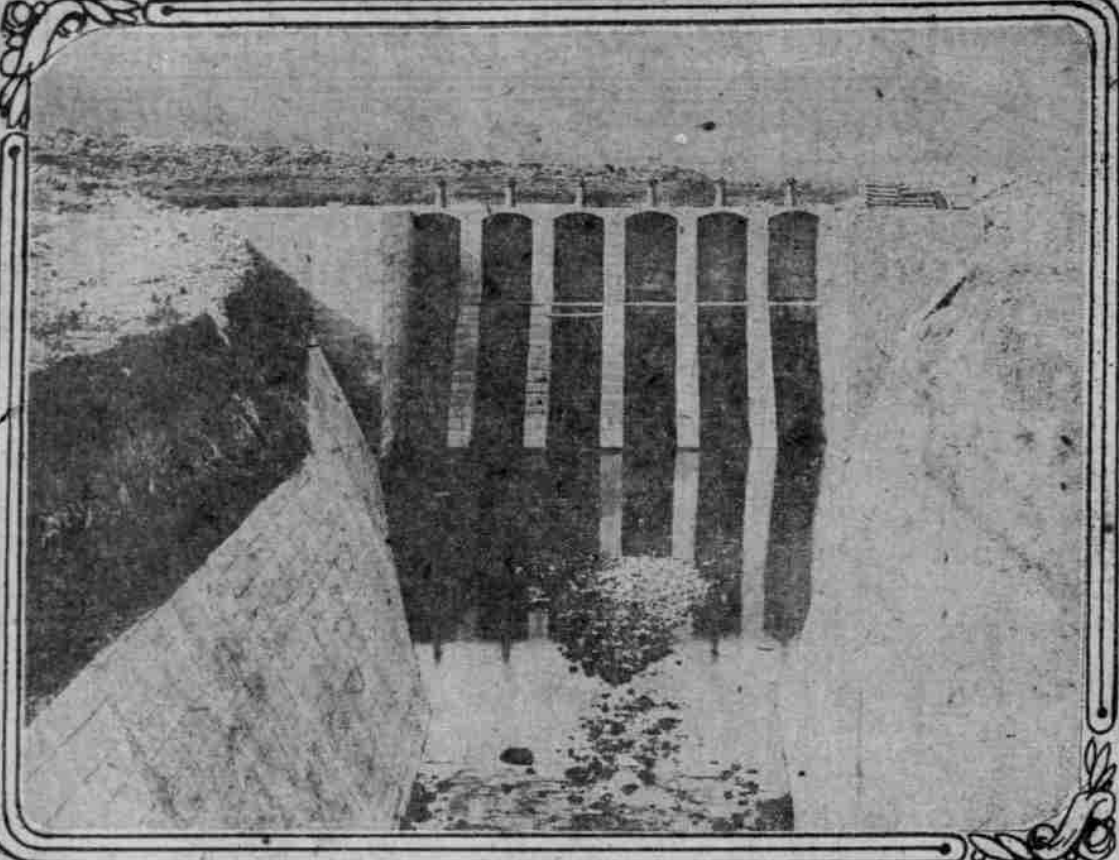


MANY IRRIGATION DISTRICTS DEVELOPED

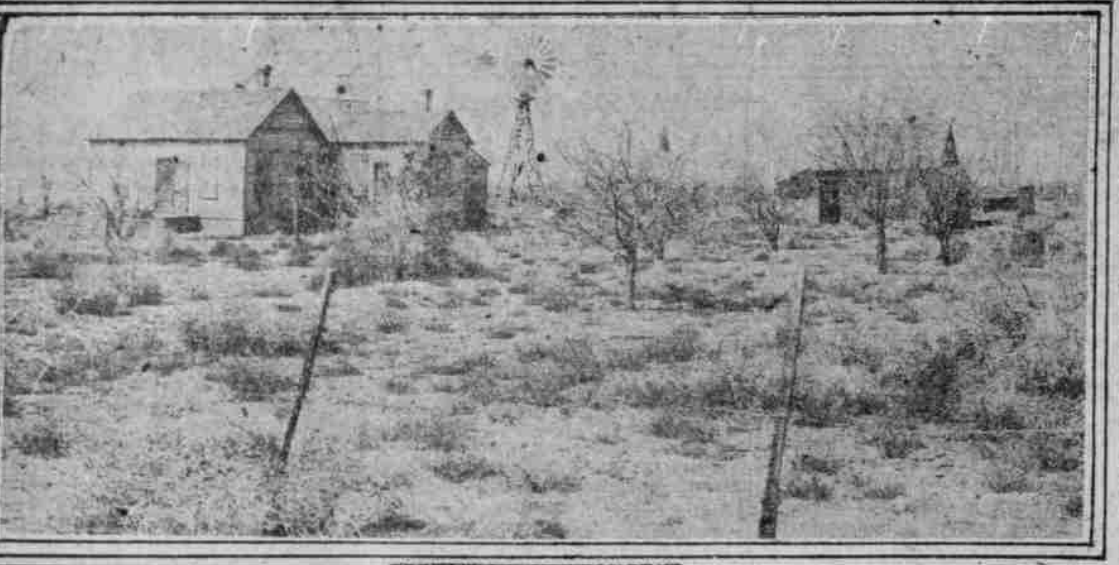
Sixty Municipal Projects Under Way—Crops Were Produced Last Year on Million Acres of Watered Land



Albany Falls, Pend Oreille, Point of Diversion for Main Canal, Columbia Basin Project.



Intake Gate of Main Canal, Klamath Reclamation.



Abandoned Farm, Columbia Basin Project, Showing Character of Land to be Reclaimed, Similar to Oregon Projects.

By Frank Ira White.

During the year just closed crops were produced on approximately a million acres of irrigated land in the state of Oregon. According to the best estimates obtainable, the acreage on which the farmer controls the element of moisture during the growing season will be increased during 1921 by about 250,000 acres. More than 60 municipal irrigation districts, named under the Oregon code, are in process of development and will bring under water within a short period of time a total that will double the present irrigated area of the state.

What is one of the striking features of recent irrigation progress in the state is the number of projects that are being taken up and carried to speedy completion in western Oregon, where, despite the heavy annual precipitation, the rainfall during the summer season is less than in districts classified as semi-arid. Many of the water appropriations are for small areas, comparatively speaking, but they are important in influencing the further adoption of scientific methods in agriculture and horticulture and in obtaining the maximum results in crop yields where "fertile soil and adequate water supply can be united."

Central Oregon, usually referred to as "Eastern Oregon," as is all of that area separated from western Oregon by the Cascade mountains, is the location of the most ambitious of the irrigation projects. The John Day project, Sherman and Gilliam counties, contemplates the irrigation of 300,000 acres of land, situated along the Columbia river. This is of special interest because of its accessibility to markets, transportation facilities, fertile soil and a long season free from frost. The source of water supply is the John Day river, from which the project takes its name.

Deschutes Project Second.

Ranking second in acreage is the Deschutes, with a total of 250,000 acres in its district, and with plans progressing for the construction of the north unit, embracing 100,000 acres. Situated in Deschutes and Jefferson counties, this project is in the upper Deschutes valley, the water supply to be furnished from a storage reservoir at Benham falls, where a 60-foot dam will impound 500,000 acre-feet, the reservoir covering nearly 20,000 acres.

It is a notable fact in the irrigation development of the country that the public has become aware of the

benefits that accrue to regions where irrigation projects are successfully developed. Klamath county has made remarkable growth in the years since the first unit of the government project was completed and there is no section of the state where as many municipal reclamation districts have been formed to bring additional lands under water. A number of small districts have been organized, secured water supply from the United States reclamation service by pumping from the canals to higher elevations, and have floated their bonds locally to carry the projects to completion. The first unit of the Klamath reclamation project embraces 44,000 acres of land, of which 33,000 is now in production. It is one of the rich farming districts of the state, but by reason of the existing transportation situation, the commercial relations of the territory have been largely diverted to San Francisco and Sacramento.

Klamath Falls, the principal center of the district, is given the sobriquet of "box factory center of the United States." It is claimed that no other single point of origin produces a quantity of box shooks equal to that of the factories in this thriving Oregon town and heart of one of the great government reclamation projects. Because of the sawmill and box industries the farmers have the benefit of excellent consuming markets at home. Eight municipal irrigation districts have been organized or are in process of organization, with a total acreage of nearly 40,000, the completion of which will more than double the present area under operation in the first unit of the government project. These districts and acreage are as follows: Linn valley 20,000; Bonanza 7000; Pine Grove 554; Enterprise 2373; Patterson 1000; Sand Hollow 2000; Malin 3000; Sunnyside 500. There are a number of other districts in the county that are flourishing under the advantage of an abundant flow of mountain water through irrigation canals. Among these are the project on the Klamath Indian reservation, constructed under supervision of the Indian bureau service, and the canals fed from flow of streams that water the Wood river valley in the vicinity of Fort Klamath. Another section famous for its forage produced under irrigation is the Sprague river valley district centering at Bly.

Jordan Project Successful.

Over near the Idaho line is the Jordan valley project, the first unit of which has been so successful as to command the interest of the general

newspaper column, but with abundant sources of supply in flow of streams, topography that provides convenient storage sites, soil of unexcelled fertility and climatic conditions that insure crop returns of high value, rapid growth in irrigation development may be anticipated in the opinion of experts.

The Oregon law is regarded as a model among irrigation codes and the state guarantee of interest on irrigation district bonds for the first five years is a safeguard against too greatly burdening the settler in the most difficult period of farm development. The assurance that the interest will be paid promptly in the first years is a factor in stabilizing the market for irrigation securities.

Among projects that have been launched or pushed toward completion during the year, that should be mentioned in passing, are the following: Teel project, Umatilla county, 15,500 acres; Warm Springs, Malheur county, 31,000 acres; Ochoco, Crook county, 22,000 acres; Kingsman colony project, Malheur county, 3000 acres, and the Squaw creek project, Deschutes county, 15,000 acres.

The Columbia basin irrigation project, by reason of a fortuitous combination of conditions, is foremost in importance in prospective development in the Pacific northwest. Its site makes it first in interest as promising preparation of the greatest number of homes for placing the landless man on the manless land; the climatic and soil conditions are most favorable to successful agriculture, while assurance of an adequate water supply would bring crop production within control of the farmer.

Ideal Condition Possible.

The ideal condition in agriculture and horticulture is possible, in the opinion of experts, when the control of moisture is brought completely into the hands of the irrigator. This condition is nearly attained in the Columbia basin territory, where the normal average rainfall is about eight inches, with practically no precipitation during the six months' period from April to October that is free from frosts. The advantage of this aridity is that the farmer can give each crop the amount of water necessary for its best production in yield and quality, both of which can be attained by irrigating at the proper periods in the growing season. Harvesting can also be done with little danger of interference through adverse weather conditions, rains rarely coming at the season when the crops are garnered.

The Columbia basin area is situated in southeastern Washington, chiefly in the counties of Adams, Grant, Franklin, Spokane and Wall, and in the great bend of the Columbia river, the southern portion of the lands possible of reclamation centering near where the Snake river empties into the misty waterway of the northwest. It is traversed by five main line railroads and several branches, with state highways and county roads connecting all its districts with trade and market points in established towns on the railroads. This exceptional land transportation situation is supplemented by the two navigable rivers that form the western boundary and traverse the southern end of the project. With the Union Pacific, Northern Pacific, Great Northern, North Bank and Milwaukee railroads serving the territory, it is directly linked with all parts of the Pacific northwest, thus assuring settlers the advantage not only of the best in local markets, but the outlet to the world markets for the surplus production of foodstuffs.

Interest Developing.

It was in consideration of these conditions that the United States reclamation service early in its history made preliminary examinations of the area, but because of the estimated acreage cost being higher than was deemed desirable for consideration when the available lands were not large, as well as an uncertainty as to results of colonization of large areas, and probably because it was essential under the provisions of the original reclamation act to build irrigation works in various of the public land states, the work was not undertaken. But the surveys and reports emphasized by the success of the Yakima project in Washington, the Umatilla project in Oregon and other irrigation developments in adjacent territory, kept the splendid character and exceptional promise of the Columbia river basin project uppermost in the minds of many progressive men.

As an outgrowth of the examinations and consideration of the project the legislature of the state of Washington in 1914 adopted an act creating the Columbia basin survey commission. The commission was directed to make surveys and prepare a report upon the feasibility of reclaiming the Columbia basin. The appropriation for the work was \$100,000.

The men selected to represent the state on this important commission were Marvin Chase, state hydraulic engineer, chairman; O. L. Waller, E. F. Rogers, Peter McGregor and Arthur D. Jones. A staff of engineers and specialists was organized to carry forward the work of field operations, including examination and investigations of sources of water supply, surveys of areas, soil surveys and classification and a complete cruise of the land. The Pend Oreille river was found to be the best source of water supply, ample to meet any irrigation demand, and the project was found to contain 1,750,000 acres of land that may be brought under a gravity flow. Depending upon the size of individual ownership, from 30,000 to 40,000 farms would be developed under the plan. The estimated acreage cost is \$171.49, based on present construction costs.

Veterans May Get Chance.

Because of the great size of the project it has remained undeveloped these many years since its possibilities first came to the attention of irrigation engineers. But with an increasing number of young men migrating from farm homes to the cities because there is less of opportunity to acquire farms of their own with a fair chance of success, it is anticipated that congress will be influenced by the demand for reclamation legislation that will enable veterans of the world war to find opportunity in fields of basic production.

When it became a matter of public discussion within the past year, through the combined activities of the Portland, Seattle, Tacoma and Spokane chambers of commerce, there were leaders of enterprises in other

northwest projects who expressed the fear that if a project so large were undertaken by either federal or private enterprise it would mitigate against the completion of those already under way. This view was swept aside in the views of most persons when it was pointed out that few small reclamation projects will cost to exceed \$50 per acre and that every argument for the Columbia basin project is three for the one costing a third as much per acre. Furthermore the large proposition will require a long while to complete and the smaller districts may easily be finished and colonized before its acreage is brought under the flow of water.

The fundamental facts established in the study of the Columbia basin project, set out in the official report, together with some salient conclusions, are as follows:

"1—There is an abundance of water that can be taken on to these lands by gravity.

"2—There are no adverse engineering features.

"3—The irrigable land is of excellent quality. Much of it has been filled and will require small expense to prepare it for irrigation.

"4—The topography of the Columbia basin land lends itself to an economical distribution of water.

"5—The productivity of the land has been amply proven by results obtained from irrigation on small tracts within this area.

"6—The splendid climate, abundance of sunshine, long growing season and the fertile land assure abundant and dependable yields.

"7—Under present conditions the construction cost is estimated at \$171.49 per acre."

Acres Cost \$190.

"Unimproved lands are at present worth from \$5 to \$5 per acre for grazing. The carrying of water to the land will not increase that value, excepting as development and tilling produce crops which of themselves justify a higher value. The purchase of water privileges will cost \$171.49 an acre, plus long-time interest payments. Preparation of the land for irrigation will average \$15 per acre. An acre ready to plant will therefore cost about \$190, of which but \$5 or less represents the value of the raw land."

Then follows this note of warning to the land-hungry persons for the benefit of whom this development is designed:

"This land should not be purchased by the prospective settler until the water is ready for delivery on the land."

"The soils are in three classes—a smooth surfaced silt loam, a smooth surfaced lighter sandy soil and a rougher surfaced silt loam which cultivation can be made equal to the first class. These classes total 1,750,000 acres of irrigable land. Adjoining these areas there are one and one-fourth million acres which are not suited for intensive cultivation, but which will be largely available for grazing. An additional 91,000 acres may be irrigated by pumping less than 150 feet in height, and 271,000 acres by a higher lift. Pumping areas are not included in the present estimate."

"The settlement of the available humid lands of the United States compels the reclamation of other land to provide for the increased needs for

Buick

Today's Hesitation Is Tomorrow's Disappointment

Those who have attempted within the last few months to have telephones installed, now realize that they waited too long. The natural increase in the demand so exceeded the decreased manufacturing output that there are not enough telephones to go around by many thousands.

There is a parallel in that other great utility—the automobile. A shortage in good motor cars is just as certain. While automobile demand, by the very nature of its essentiality, is increasing daily, motor car production is very seriously curtailed. It is an obvious result that will be here soon. The demand will have exhausted the available supply and then will follow months of waiting by prospective purchasers because automobile production cannot be speeded up over night.

This condition was foreseen by the Howard Automobile Company several weeks ago and efforts immediately were made to meet the coming shortage. But despite the unusual activities in shipments there will not be enough Buicks to go around. THERE NEVER HAS BEEN in the twenty years of Buick manufacture. This will be particularly true this season with the remarkable demand for the greatest Buick ever built.

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