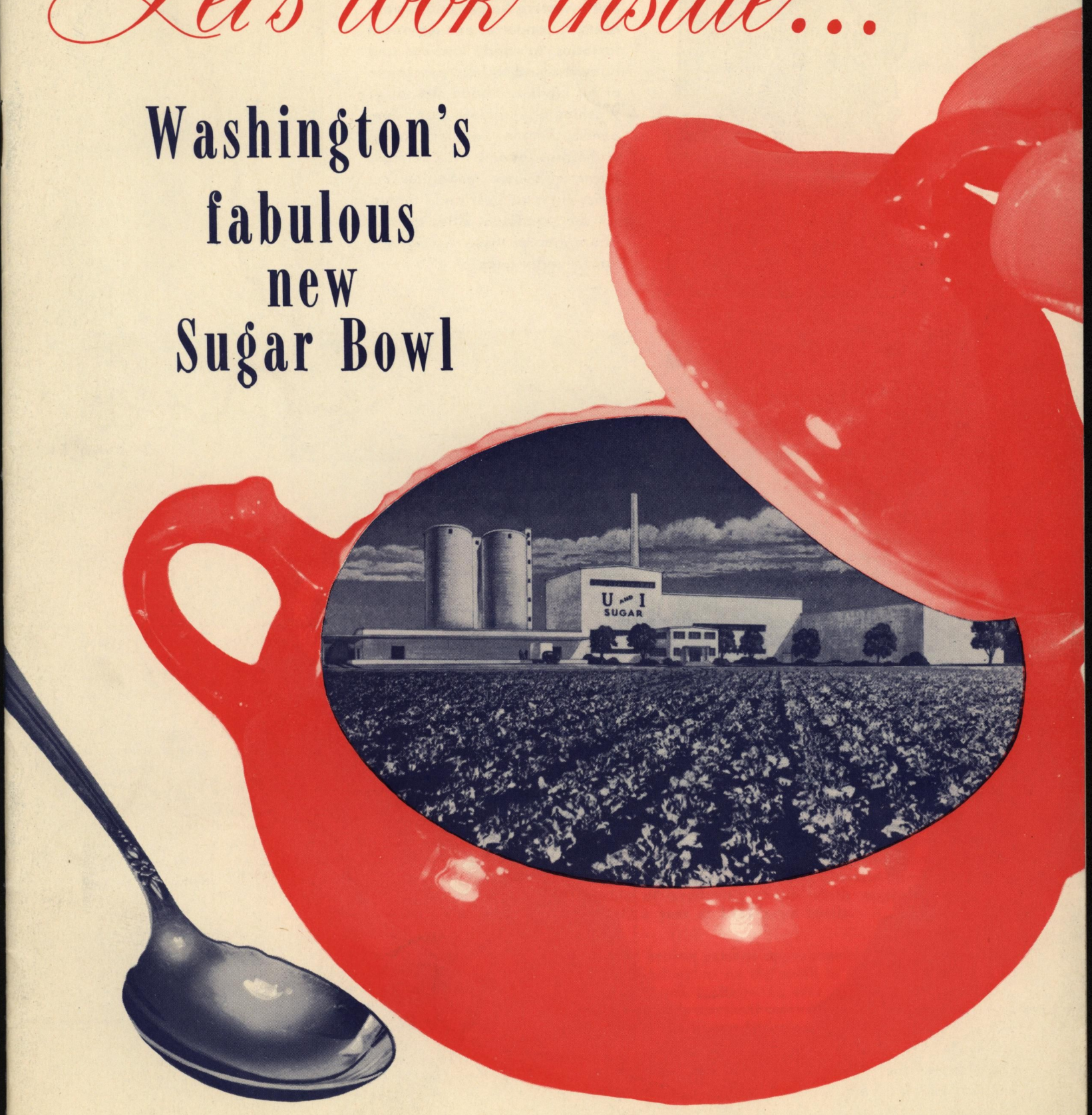
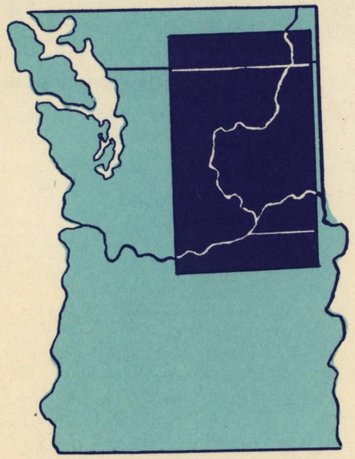
Let's look inside...

Washington's fabulous new Sugar Bowl





FROM two sugar bowls instead of one there will now flow to Northwestern homes and restaurants, to canneries and ice cream factories, to candy kitchens and bakeries, and to food processors of all kinds a steady stream of Washington - made sugar. Toppenish, in the Yakima Valley, and Moses Lake, in the Columbia Basin, with their companion factories for making U and I Sugar, will be significant cities on any future map of these two agricultural wonderlands.

A river of water flows down each of six major canals.

A New Empire is born

The story of the Columbia Basin Irrigation Project begins in 1879. In that year, Lt. Thomas W. Symons, U. S. Army Corps of Engineers, said of the Columbia Basin, in an annual report: "All in all, it is a desolation where even the most hopeful can find nothing in its future to cheer."

In the following four decades, various plans for reclaiming portions of this vast area were proposed or attempted. Then came the Grand Coulee plan, beginning with the famous meeting of five sponsors at Ephrata, in Attorney William M. Clapp's office in 1917.

Sixteen years and millions of spoken and written words later, construction was started on the Grand Coulee Dam in September 1933. Not until 1952, however, was the first water from the Coulee made available for the growing of crops in that East-Central Washington region which comprises more than a million acres of irrigable and fertile lands and is familiarly known as the Columbia Basin.

The eight-year-long story of the building of the Grand Coulee Dam itself and the related project of constructing a mighty power plant which could ultimately generate 3,000,000 kilowatts of electrical energy, and the building of a 12-unit pumping plant which will be capable, when finished, of pumping 12 billion gallons of water a day to irrigate 1,029,000 acres of land, is one which has often been recounted, so will be passed over lightly here.

The completion of the Columbia Basin Project, already in its twentieth year, may require another two-score years.

Meantime, water, power, and land utilization, already under way, will increase at an accelerated rate until ultimately 14,000 irrigated farms, producing crops valued at approximately $117,000,000 each year (based on 1949 farm prices), will be established in the project. By that time it is expected that the population of the Columbia Basin will have multiplied from its present 35,000 to 150,000.

Under a Seven-Year Program, 1952-58, structures will be completed to deliver water for approximately 500,000 acres and about one-half of the ultimate number of farms capable of producing crops worth approximately $60,000,000 a year at 1949 price levels.

The project extends approximately 135 air miles from Pasco, Washington on the south to Grand Coulee Dam on the north, and includes an area almost twice the size of Delaware, with one-third more irrigable land than is found in the State of Rhode Island.

Details of this development, now well in progress, and the benefits it will bring to the people of Washington and the Pacific Northwest, are described in picture and word in the following pages.

Water...

Lifeblood of a New Empire

Water is the lifeblood of reclamation. Arid lands in Eastern Washington which have lain sterile for centuries have suddenly assumed great economic importance through the application of water now being pumped into an artificial lake whose level is 600 feet above the bottom of the Columbia River channel, and from there distributed through thousands of miles of canals, conduits, siphons, and reservoirs in one of the mightiest triumphs of man over nature.

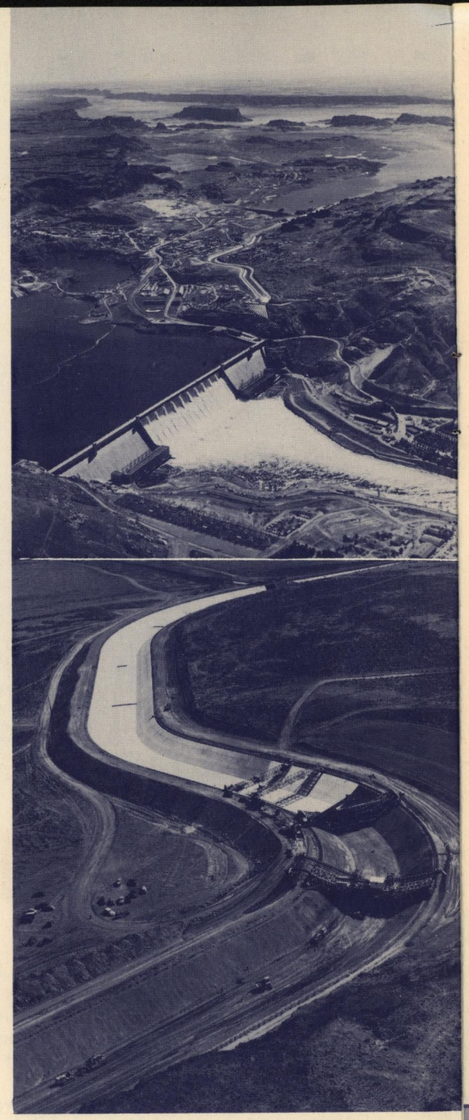
The use of irrigation as an aid to plant growth is of ancient origin, as witness the writings of Moses: "And a river went out of Eden to water the garden." (Gen. ii, 10) In western America more than a century ago, the Marcus Whitman party, near Walla Walla, and the Mormon Pioneers, in Utah, were among the first to apply this ancient art of farming.

In some areas water can be diverted directly from streams to planted fields at relatively small expense. Other areas require the added facilities for impounding the water behind dams and in reservoirs, with a more or less elaborate system of conduits and canals for transporting the water to lands at various levels. The Columbia Basin Project combines all these devices, plus hydroelectric power to lift the water by its own bootstraps in a scale never before attempted or achieved. From this colossal creation has arisen a new agricultural empire which represents the largest land opening in federal reclamation history.

As already noted, the key structure making possible the irrigation of the Columbia Basin is the Grand Coulee Dam. This is the largest concrete dam in the world. It is 550 feet high above the lowest bedrock, and 4,173 feet long. The spillway is almost twice as high as Niagara Falls and covers a surface area of 15 acres. The dam raises the level of the Columbia River approximately 350 feet in its canyon at the dam site. It also generates the hydroelectric current needed to lift the water the remaining 280 feet out of the canyon by means of what will be, when completed, the world's largest pumping plant. Each of the 12 pumps ultimately needed to complete this system is capable of lifting more than one billion gallons of water a day 280 feet out of the Columbia River—or enough water to meet the daily domestic water needs of every resident of New York City. Six of the pumps are under contract, and the final two of these are nearing completion. When completed, these first six pumps will lift all the water needed for the irrigation of 600,000 acres of land.

Supplementing the dam and pumping system are six major channels having a combined length of nearly 300 miles to transport the water to storage reservoirs and main distribution canals. Capacity of the Main Canal is enough to carry the average flow of the Tennessee River at Knoxville; West Canal can carry the average flow of the Illinois River at Peoria; East Canal can carry more water than the average combined flow of the Spokane, Wenatchee, Okanogan, and Methow rivers in Central Washington.

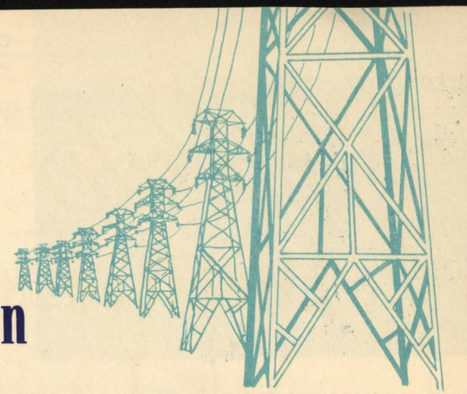
Forty-six tunnels and siphons carry the water through mountains or across coulees. Four earth-filled dams (O'Sullivan, Long Lake, Dry Falls and North Dam) having a combined volume greater than the Grand Coulee Dam itself, serve as secondary storage reservoirs. The combined length of all canals and laterals under the total development of the Project is approximately 4,500 miles—long enough, if laid end to end, to reach from the Project to New York City and back nearly to Chicago.



Aerial view of Grand Coulee Dam and vicinity, heart of Columbia Basin Project.

Long Lake Dam headworks and concrete canal lining and structures—main canal—four miles west of Stratford.

Power...



The Sinews of Civilization

If the Grand Coulee Dam supplied nothing more than a water storage dam and the power to lift it to levels where it could be put to new beneficial use, it might justly be called an Empire Builder. But the Grand Coulee does much more. It supplies power for unparalleled new industrial development.

The rated capacity of the Grand Coulee power plant—1,974,000 kilowatts—makes it the largest in the world. About 40 per cent of the hydroelectric energy of the Pacific Northwest is generated here. This incomparable source of cheap electricity contributes immeasurably to the war and peacetime agricultural and industrial development of the Columbia Basin and the entire Pacific Northwest. The making of the aluminum during World War II for one out of every three U. S. warplanes, and the launching by one Portland shipyard of more ships than were made by the entire nation in World War I would not have been possible without this source of cheap and plentiful power. This power plant is also the magnet which drew to its present location in this area the now famous Hanford Works, AEC Installation, at Richland. The aluminum industry alone, representing an investment of $180,000,000, an annual product output valued at $600,000,000 and a payroll of $145,000,000 each year, is closely connected with the Grand Coulee Dam and the Columbia Basin Project.

And the industrial development of the region, bringing with it still other new industries and a steady expansion of present operations with an ever-growing nearby market for the products of farm and field, holds high the hope of bigger and better things to come for Columbia Basin settlers—and for their fellow citizens of the Northwest who will share with them these present and future benefits.

In the Basin alone, widespread economic growth in retail trade, service institutions, wholesale distributions, and manufacturing is predicted to accompany the further development of the land. Based on a study of the development of a comparable farming area in southern Idaho and southeastern Oregon, following the advent of adequate water supplies to these areas, the following predictions of growth have been made by the U. S. Bureau of Reclamation for the Columbia Basin Project under its mature development for 1,029,000 acres:

RETAIL SALES—From 460 establishments in 1950 to 2,868 doing an annual business of $276,000,000

SERVICES—From 615 service establishments in 1950 to 3,642 doing an annual business of $143,000,000

WHOLESALE—From 83 wholesale firms in 1950 to 520 doing $214,000,000

MANUFACTURING PLANTS—From 18 manufacturing plants in 1950 to 282 doing an annual business of $49,000,000

Besides these direct benefits which will accrue to residents of the Basin and their Northwestern neighbors, many other benefits have already been felt. Of Washington's $135,000,000-per-year tourist "crop," in 1952, a very substantial portion came to visit the Grand Coulee Dam and related attractions. This number will increase steadily through the years, bringing added wealth to everybody concerned.

Grand Coulee Dam, chief source of water and power for Columbia Basin Project.

Charles Faw irrigates his field of vetch, a green manure crop, on his farm at Winchester.

A Pattern of Prosperous Farming

Although first stakes for the building of Grand Coulee Dam were driven twenty years ago, water from the dam for irrigating crops was not delivered to the farms in the project until the spring of 1952 . . . and then only enough for 66,000 acres. Additional water will be made available in pre-determined amounts each succeeding year through 1958, when the first phase of the project, covering nearly half a million acres, will have been completed.

It was planned that way—an orderly pattern of prosperous farming which is expected to put life-giving waters on 1,029,000 acres of irrigable farm land, an area almost as large as the entire state of Delaware.

Long before the first water from the Columbia was brought to the Basin in 1952, several hundred farmers were already growing crops on lands which were irrigated by pumped well water, or by pumping directly out of Moses Lake. Some of these operations extended back a generation or more. So the lands had long been crop-tested and were known to be fertile. Among the crops which had shown up best and were therefore rated high in future production plans are alfalfa hay, small grains, field corn, potatoes and dry beans.

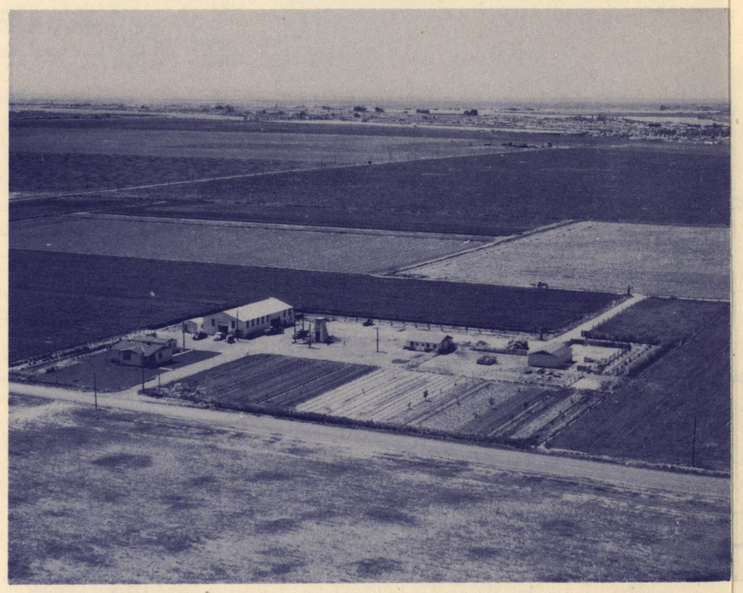
In 1949 a new crop was introduced to the valley which has since proved to be one of exceptional suitability: sugar beets.

Although sugar beets were well known to Yakima Valley and a few other spots in Washington, 1949 was the first year any attempt was made to grow them on a commercial scale in the Columbia Basin. Since then the sugar beet acreage in the Basin has been increased steadily, with yields substantially greater than the national average yield of sugar beets. Consequently, sugar beets assumed primary importance in the future crop program for the area. The next step was inevitable: the building of a second U and I Sugar factory in Washington State was planned. Construction on this factory on a 1,500-acre site near Moses Lake is being rushed to make it ready for the processing of the 1953 crop of sugar beets. When completed, this factory will take its place with the big U and I factory which has been operating at Toppenish since 1937, to greatly increase Washington's sugar output.

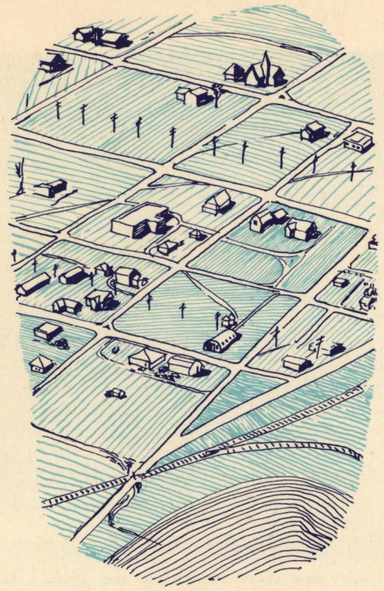
Bureau of Reclamation anticipated land use tables indicate that sugar beets will be the chief row crop to be grown in the Basin, more than doubling in average annual acreage the land anticipated for the growing of potatoes when the project is fully developed and planted. Other major crops expected to play major roles in the project, according to the Bureau of Reclamation, include alfalfa and other hay, pasture, small grains, field corn, legume seeds, dry beans, onions, and various truck crops, and some fruits.

As with sugar beets so with these other crops: yields are generally high. Potato yields in 1952, for example, averaged 12.1 tons per acre, with some of the better potato growers getting as much as 20 tons to the acre. Yields of alfalfa hay, averaging 4.1 tons, often run as high as 7 tons from four cuttings per season. Irrigated wheat land gives yields of 45 to 55 bushels, with a 1952 average of 23 bushels, and field corn grown with irrigation averages 49 bushels to the acre. Dry beans yielded 16.4 cwt. in 1952 on irrigated farms in the Basin, while other recommended crops do relatively as well.

All of these yields are much higher than national averages. The reasons for this high level of productivity are chiefly these: the nature of the soil, the favorable long-growing season which this region enjoys, and the modern farming methods used, including a strong fertilizing program.

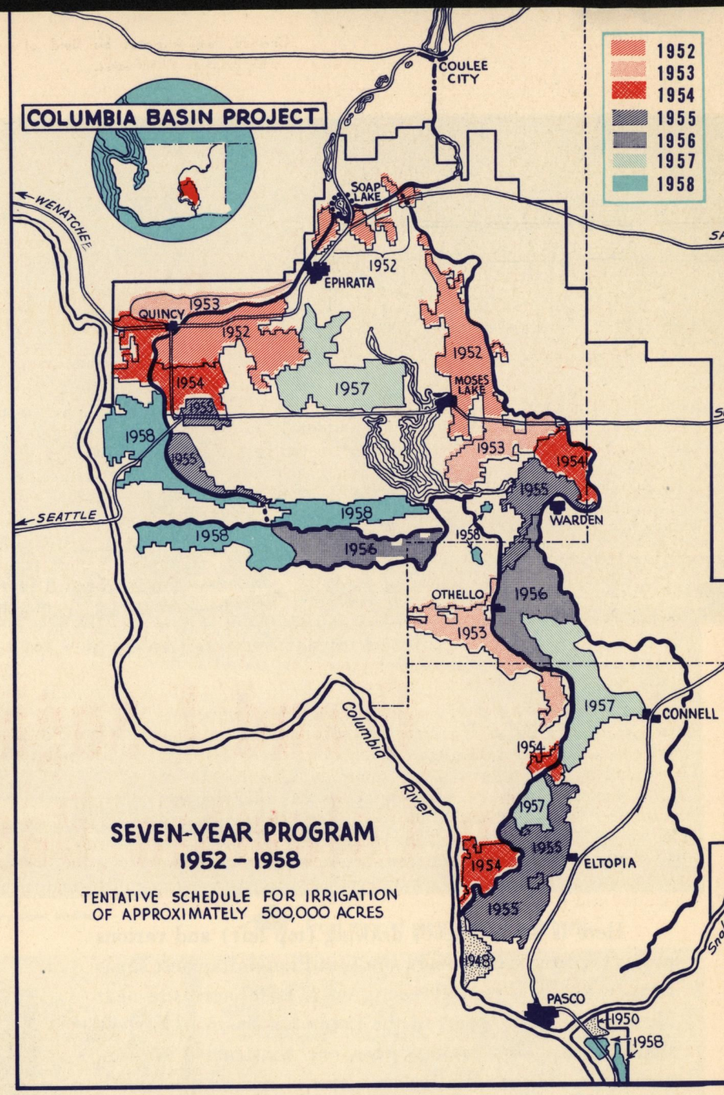


Aerial view of the Moses Lake Development Farm. City of Moses Lake in the background.



Orderly Development

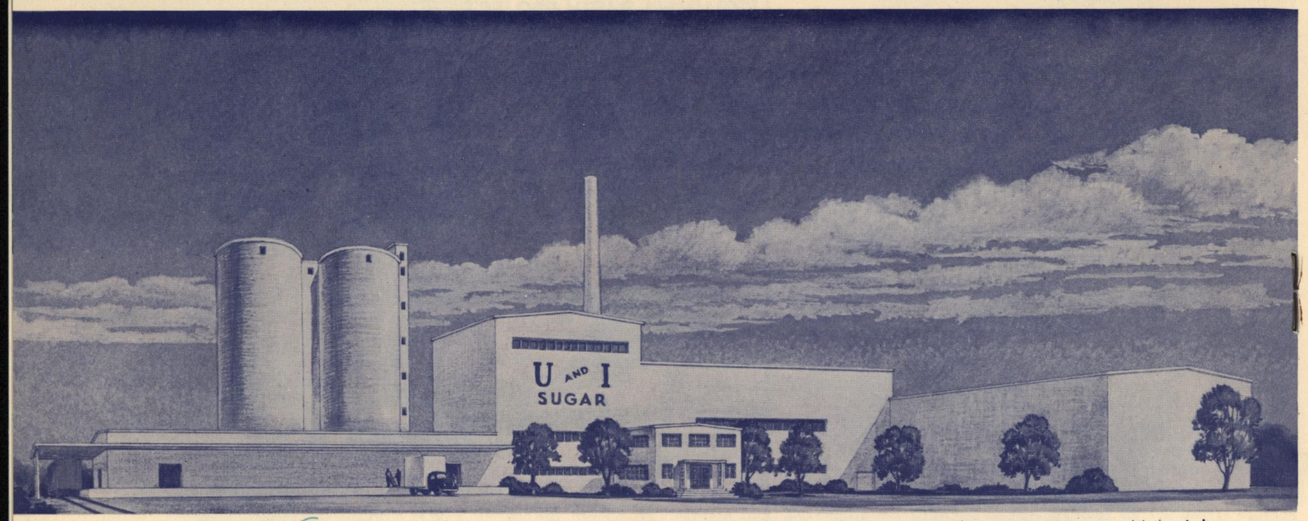
1952 - 1957 Half a million acres



Colonization, availability of water and land utilization are expected to be carried forward on an orderly planned basis. Commencing with 1952, a seven-year program of development has been tentatively scheduled by the Bureau of Reclamation. Under this program facilities for the irrigation of 500,000 acres, or about half the total project, will be completed in 1958. The first phase of this program was finished in 1952 when water was made available for the irrigation of approximately 66,000 acres, comprising 920 farms. It is estimated that almost half of these farms used some water last year, and that increasing amounts will be used annually as development proceeds. The areas which received water in 1952 were located near the extreme northern perimeter, in six designated blocks immediately north and surrounding Moses Lake; between Quincy and Ephrata; and the Soap Lake-Stratford district. In 1953, four additional irrigation blocks will receive water. These lie southeast of Moses Lake and south and west of Othello, and between Ephrata and Quincy. In subsequent years, until 1958, 50,000 to 60,000 additional acres will have water made available to them each year.

Prior to 1952, two blocks of land at the southern end of the project were served. In the Pasco unit, 5,400 acres received irrigation water beginning in 1948, followed by the Burbank unit in May 1950 with 1,200 acres. This was pumped directly from the Columbia and Snake rivers.

From all areas which have received water to date have come encouraging reports of high crop yields where good farming practices have been followed—fully justifying the planners' hopes for ultimate success of the project. It is therefore only a matter of time when these once-arid tracts of shifting sands and sagebrush will have been transformed into an unbroken vista of fertile and productive farmlands for the blessing and benefit of a new empire of happy and prosperous citizenry in East-Central Washington.

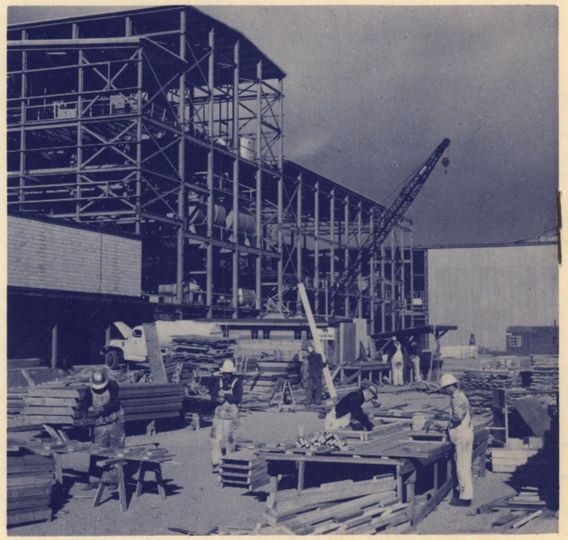


Architect's view of main building of U and I Sugar factory now under construction near Moses Lake.

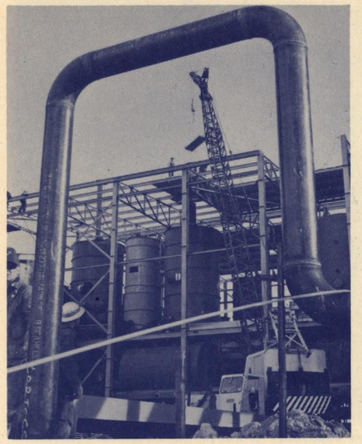
New U and I Sugar Factory in Columbia Basin in 1953

Here is an architect's drawing (top left) and various progress pictures of the new multi-million-dollar beet sugar factory which is rapidly rising on a 1,500-acre site near Moses Lake in the heart of the Columbia Basin in Eastern Washington. This factory joins one constructed at Toppenish, in Yakima Valley, to greatly expand the state's facilities for turning sugar beets into sparkling pure sugar, and its by-products into livestock feed.

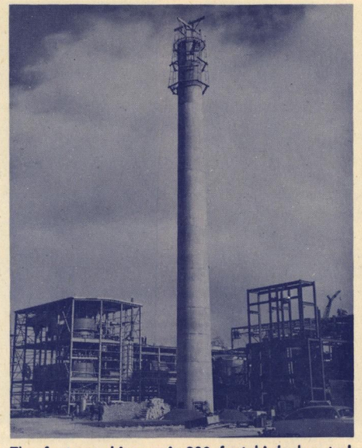
The first year's output of sugar at the Moses Lake plant is expected to equal or exceed the amount made at Toppenish in 1937, during its initial campaign. In addition it will make thousands of tons of molasses dried beet pulp for feeding to dairy cows, beef animals, and sheep. As with Toppenish, which in 1952 made nearly 125 million pounds of refined sugar, the capacity and output of the Moses Lake plant is expected to keep pace with sugar beet production. Assuming that the Moses Lake plant will eventually equal the Toppenish factory in sugar and its by-products, the total value of this industry to the state will then be approximately twenty-five million dollars. These two U and I factories will continue to produce the only sugar grown and made in Washington.



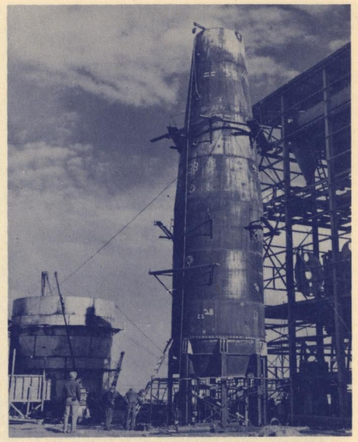
Workmen preparing forms for use in main building.



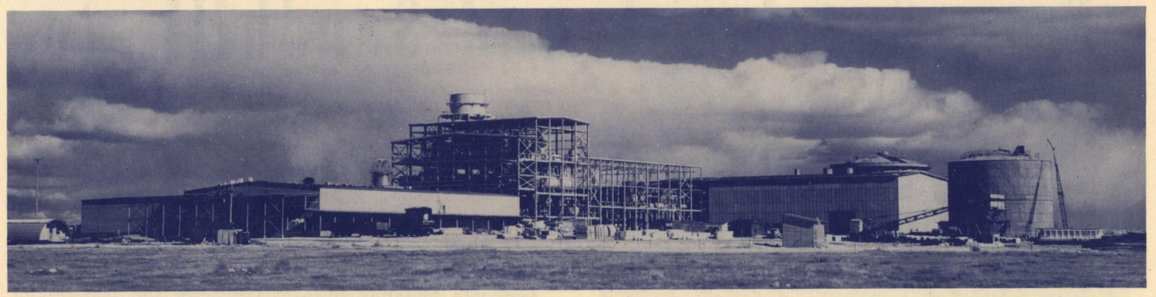
Workmen placing concrete roof tile in position.



The factory chimney is 200 feet high, located in the rear of the main building.

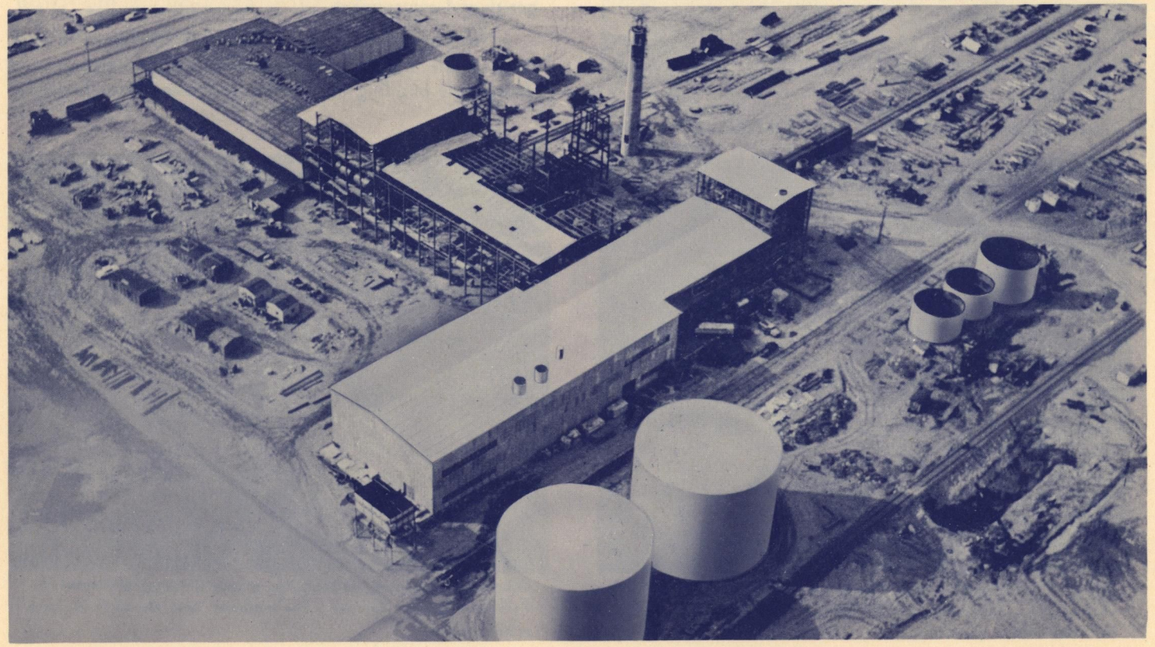


Huge lime kiln being implaced beside Steffen house; molasses tank in the background.

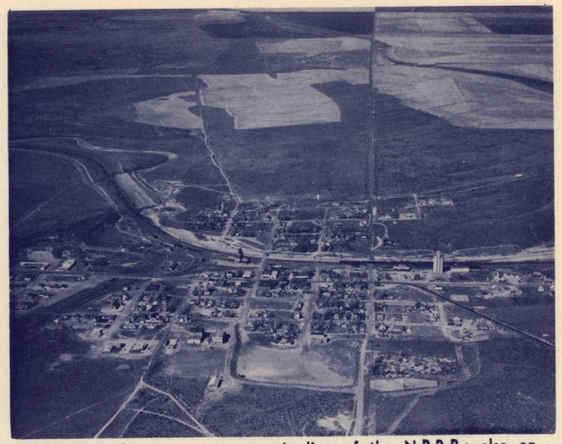


A recent air view of the new U and I Sugar factory now under construction at Moses Lake, Washington.

Front view of plant looking Northeast.



Town of Moses Lake. Branch line of the Chicago, Milwaukee, St. Paul and Pacific Railroad. The development in the lower right-hand portion of photo is the so-called "Peninsula" area.



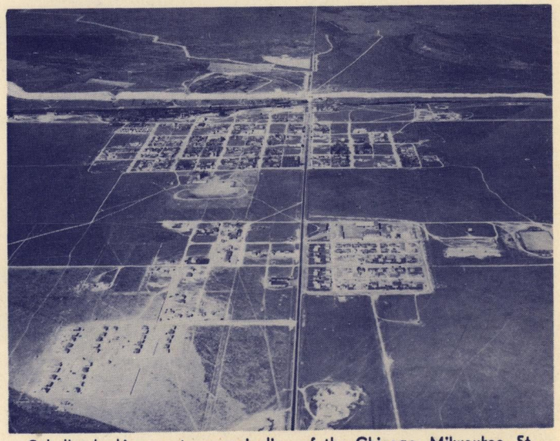
Connell, looking west — on main line of the N.P.R.R.; also on branch line of Union Pacific.

From Sagebrush and Sandhills to *Fertile Fields and City Streets*

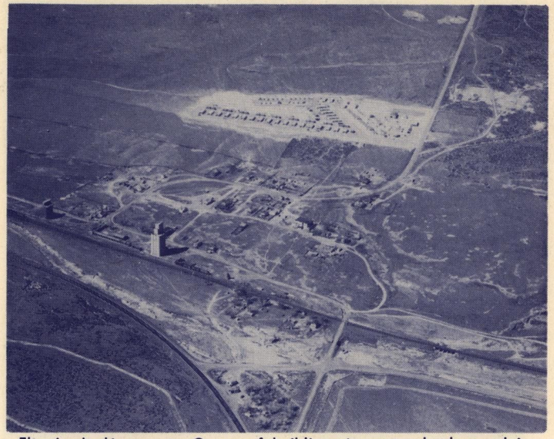
Water, and its attendant magician, hydroelectric power, wield a magic wand which can transform sagebrush wasteland into pulsating cities of commerce and industry, or into thriving farmside villages where people live in prosperity and contentment.

Nowhere is the magic wand of water more evident than in the Columbia Basin. Here we have seen, in a decade, the building of a Hanford atomic plant. Likewise,

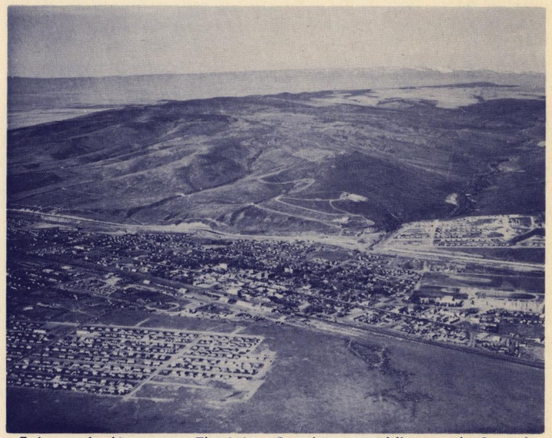
Town of Soap Lake, looking southwest. Ephrata can be seen in background. Lakeview Park Addition is just beyond the town of Soap Lake.



Othello, looking west, on main line of the Chicago, Milwaukee, St. Paul and Pacific Railroad. The potholes East Canal is in back middleground.



Eltopia, looking west. Group of buildings in center background is the U.S.B.R. Watermaster Headquarters. Note the main line of the N.P.R.R. in middleground.



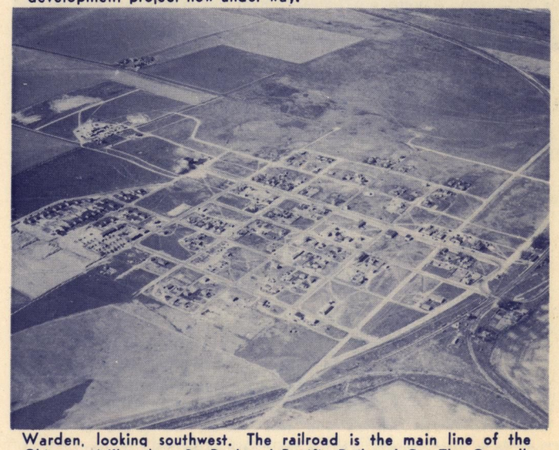
Ephrata, looking west. The West Canal is in middleground. Served by Great Northern Railway. New high school under construction, lower right-hand corner.

the Tri-Cities (Pasco, Richland and Kennewick) which serve its thousands of war and peacetime workers have mushroomed. Somewhat less spectacular but amazingly fast has been the growth of half a dozen smaller communities in the Columbia Basin: Moses Lake, Ephrata, Quincy, Warden, Othello, Connell, Mesa, Eltopia, Soap Lake, Coulee City, and others. And progress has just started. Estimates of a phenomenal future growth of urban and rural population in this area foretell the day, only a decade or so hence, when the region extending from Pasco to Coulee City, with its secondary benefits extending to Spokane, Wenatchee, Ellensburg, Yakima, and Walla Walla, will constitute one of the major agricultural and industrial empires of the state.

Pictures reproduced here show some of the community improvements now taking place.

The population of Moses Lake has more than doubled, with predictions of 16 to 20 thousand people in about 10 years. This picture shows a street paving project, part of the major civic development project now under way.

Quincy, Washington, as seen from the air.

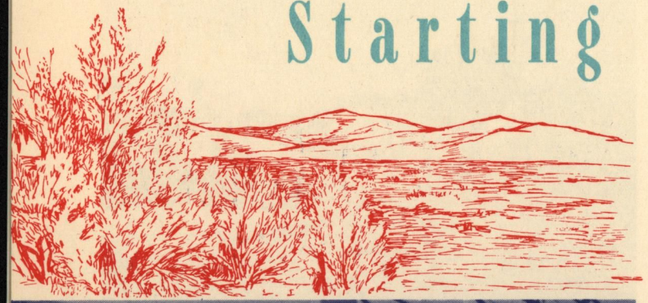


Warden, looking southwest. The railroad is the main line of the Chicago, Milwaukee, St. Paul and Pacific Railroad Co. The Connell-Coulee City branch line of the Northern Pacific Railroad cuts across upper right-hand corner.

Mr. and Mrs. A. F. Woolman and son and daughters start life over in a "basement house" near Moses Lake.

Mrs. Saron K. Minden washes dishes in the kitchen of the Minden's temporary home near Moses Lake. Basement foundations for their permanent home were just poured as ths photo was taken.

Starting from Scratch,



Mr. and Mrs. Vernon Nichols and son, Vernon, are proud of their new farm near Othello, and of their new home food freezer, first of many modern conveniences they hope to enjoy when they strike "pay dirt."

The road of the new settler in the Columbia Basin may not be an easy one judging by the experiences of a number who are already on the land. Take the story of ex-GI William S. Lovercheck, as reporter in the May 1951 "Country Gentleman":

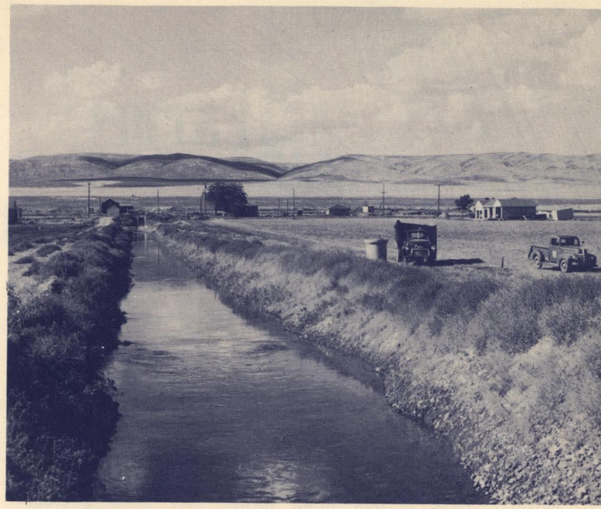
"Where else," Lovercheck asks, "can you get a $15,000 crop on a 50-acre farm? How can we lose? We can raise almost anything that will grow in the U.S."

"Lovercheck," says Country Gentleman, "was one of a handful of venturesome young men who moved with their families in 1949 to what was formerly raw desert land at Pasco to have a try at irrigated farming.

"Man and nature," to quote further, "haven't been too co-operative with the Pasco pioneers. Nevertheless, at the end of their second year on the land, none of the Pasco settlers had quit. Average gross income per acre from the Pasco project and the Bureau's development farms was $121 in 1950; $100 in 1949."

Farther north, sugar beet growers have done even better. Take Orville M. Monasmith, of Moses Lake. He moved to Washington from Nebraska in 1948, where he grew annually 10 to 12 tons of sugar beets per acre. One of the first project users of Columbia River water which was delivered to his farm in April, his sugar beet crop in 1951 averaged 34 tons to the acre and promised to be nearly as good in 1952. Monasmith lives on his 160-acre farm with his wife and two children in a modern home

Everett and Lester Harwood (father and son) open a farm check to pass water down a farm lateral on their unit 130 on Block 41. They received the first delivery of water for the project in 1952.



The P. A. Kelly farm at Winchester shortly after the pea harvest started in June 1952.

"Basin" Farmers Look Ahead

which he had built in 1952. A school bus picks up his youngsters right at his home. Everything's going well with the Monasmiths and everybody's happy.

A look at two other families of "newcomers" gives further reason for confidence that the project will succeed. A. F. Woolman of Moses Lake R.F.D. 2 was originally from Nebraska. With his wife and three children he moved to the Basin from Baker, Oregon in August of 1952, where they lived in a tent until late October. While in Oregon, Woolman had worked at logging and in a small saw mill for 15 years before saving enough capital to purchase a farm, build a concrete block basement (where they will live until they can finish the rest of the house), and buy equipment with which to plant, cultivate and harvest their first crops in the Moses Lake country. Irrigation water will be available to the Woolman's in the spring of 1953. With hopes held high, the Woolmans, who are no strangers to hard work and forced thrift, have no illusions about their future. They know it will be a struggle—but their willingness to take the hard with the good has already won for them half the battle.

South of Moses Lake and directly west of Othello, we talked with another family of newcomers,Mr. and Mrs. Vernon Nichols, originally from North Platte Valley in eastern Wyoming, but for the past 16 years "stump farmers" near Priest River in the Panhandle of Idaho.

The Nichols family made the 12-day trek by Model T Ford from Wyoming to Priest River, Idaho in 1936, where they arrived with $80 in their pockets. After remaining in their new Idaho home long enough—16 years—to clear 80 acres of stumps and accumulate a few head of livestock and some farm machinery and a modest sum of money for working capital, they purchased their present 140-acre farm. Having already pioneered once, they know what they're up against. Nearly a full year ahead of the expected arrival of irrigation water, these pioneers have arrived to stay. This time they brought with them six head of cattle, 16 sheep, a tractor, a truck, and various miscellaneous farming machines. Even before their one-room self-built home had been wired for electricity, they had put into service outside the home, protected only by a lean-to, a shiny new home food freezer which operates on current carried by an improvised wire connected to a nearby electrical service pole.

Here are realists—seasoned pioneers who are determined to make good. Their first crop will be planted in the Spring of 1953. They are looking forward to the season, not so long hence, when they can grow a crop of sugar beets, the dependable crop which all Basin farmers are banking on for security and hard cash income.

In a sense, many of the settlers of the Columbia Basin Project are starting from scratch, but in another sense they have a big head start over first settlers in other areas—the head start which nature gave to the country and all who inherit it, with its greater soil fertility, longer growing season, and abundance of life-giving water.

New Farms, New Crops, New Horizons

The very newness of this Eastern Washington farm country is in its favor for the early settlers who come now and stay with it long enough to establish themselves solidly. Here is new land, fertile, free from noxious weeds, uncontaminated by pests and parasites which sometimes follow overcropping and single crop cultivating over long periods of time. Here is land capable of growing nearly any crop which can be grown in America—with much higher than average yields.

Land is cheap for veterans who are fortunate enough to qualify in the drawings which take place from time to time. The price set by the Federal Government for unimproved irrigable land ranged originally from $2.50 to $25.00 per acre, although the present scale is higher. The only other charge against the land is an average of $5.50 per acre per year for operating and maintenance, and an average charge of $85 per acre for the project construction. The construction charge is to be paid, without interest, in 40 annual installments, starting 10 years after water is officially made available. The actual cost of the irrigation features of the project are about $445 per acre for all irrigable land, with the differences between the $85 charged and the $445 cost being paid by expected power revenues from the project. Other major costs to a settler in getting established on a project farm include the purchase of machinery, dwelling and farm buildings, livestock, feed, fertilizer, seed, working capital, and living expenses until a crop is sold.

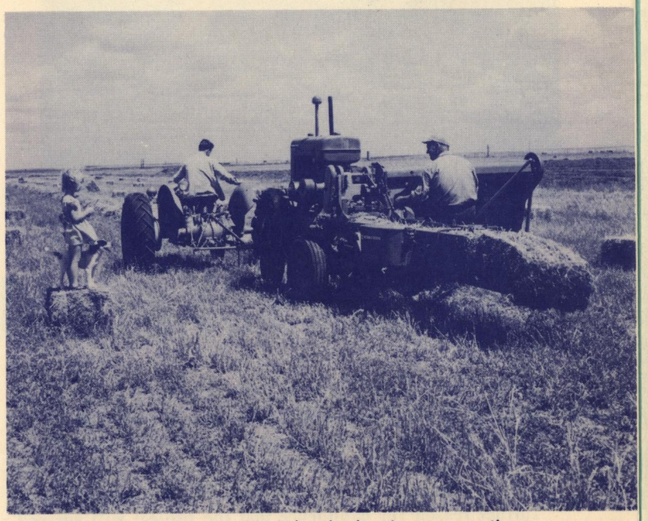
Opportunity to purchase the government-owned farm units in the project is given first to veterans by drawings. Ultimately about 3,500 farms, representing approximately 25 per cent of the total irrigable land area, will be sold in this manner. An additional five per cent is owned by the State and 70 per cent is privately owned. Much of the privately owned land and all government land must be sold under the law which forbids any one family to own more than 160 acres, if it is to qualify for project water. The average size of these farms is 72 acres irrigable, and they range from 30 to 150 acres of irrigable land.

For the most part, the owners and operators of these farms will be newcomers to the area, living on family size farms. Before a farmer can qualify to purchase a project farm from the Bureau, he must have a minimum of working capital. No farmer may sell his land for speculative profits at more than the appraised price in less than five years after water reaches it. This encourages land development and discourages speculation.

In areas close to the Moses Lake sugar factory, sugar beets are expected to be the most popular and most profitable crop for years to come. Dried beans are also a popular quick cash crop with yields running as high as 22 cwt. to the acre and gross average income at approximately $180 to the acre. Hybrid corn in the Basin has produced up to 140 bushels to the acre. Lima beans, alfalfa hay, and small grains produce proportionately large yields.

Markets for these crops will be near at hand—on Basin farms and in the nearby cities—a self-contained market which is eventually expected to reach a total of 150,000 persons when the project has reached its full development. Nearby major cities include Spokane, Ellensburg, Yakima, Wenatchee, and Walla Walla, with processed crops like refined beet sugar salable throughout the entire Pacific Northwest and beyond.

All these favorable factors combine to create new agricultural and industrial horizons in Eastern Washington.



A mechanical hay baler cuts and bales the hay in one operation near Moses Lake.

One of the principal crops grown in the Columbia Basin is potatoes — a good companion crop for sugar beets.

Sugar Beets
Backbone of Reclamation

Sugar beets like this bring the yield near Moses Lake to record heights. Farrel Francom, U and I fieldman in Columbia Basin, here displays a beet from the field of Mas Norikane, one of the high producers of sugar beets.

"The sugar beet industry is the backbone of those federal reclamation projects where the crop is grown . . . It is one crop that contributes more than anything else to a rounded-out, complete agricultural program, gives winter and summer employment, enables the farmer to make the largest and best use of the alfalfa that is grown, and gives in an unusual measure a continuous employment for the family on the farms, with more stable income than anything else."

This statement was made by the late Dr. Elwood Mead, for many years Commissioner of Reclamation in the Department of Interior. It is as true today as when first uttered. That it will be true for the Columbia Basin Project is indicated by the fact that Bureau of Reclamation officials are already predicting that more than twice as many acres of land in this project will ultimately be planted to sugar beets as to any other crop.

There are other reasons why sugar beets are a good crop for the farmers who grow them and for all the rest of us. Take food-value-per-acre, for example. Several years ago, Dr. Fredrick J. Stare, head of the Department of Nutrition of Harvard University and one of the nation's foremost authorities on nutrition, observed that "sugar is highly efficient in terms of calories and land." It is one of the most efficient of all sources of quick energy or food calories, in terms of land use, as indicated in the following table of amounts of fertile land required to produce one million calories from each of various common foods:

Food Source	Acres of Land
Sugar	0.15
Potatoes	0.44
Corn — as corn meal	0.9
Wheat — as whole wheat flower	0.9
Wheat — as refined wheat flour	1.2
Hogs (Pork and Lard)	2.0
Whole Milk	2.8
Eggs	7.0
Chickens	9.3
Steers	17.0

For still other reasons sugar beets are a good crop for Eastern Washington: Farmers get two crops in one from each acre of sugar beets harvested: (1) refined sugar, and (2) the leafy tops and root crowns removed in the harvest. These by-products plus the beet pulp and molasses left over in the refining process are valuable livestock feeds. More recently "diffusion juice," which once was wasted, has become a major source of Mono Sodium Glutamate, the new food seasoning.

All in all, the growing of sugar beets and the making of beet sugar, combined with all their related activities, will prove to be here, as they have been elsewhere, a boon and a benefaction to all who live in or benefit from the development of this new agricultural and industrial empire.

A farmer near Moses Lake harvests his sugar beets with the aid of a machine which cuts off the leafy tops, lifts the beets from the ground and loads them into a truck in one operation.

A trainload of beets at the Wheeler receiving station near Moses Lake.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