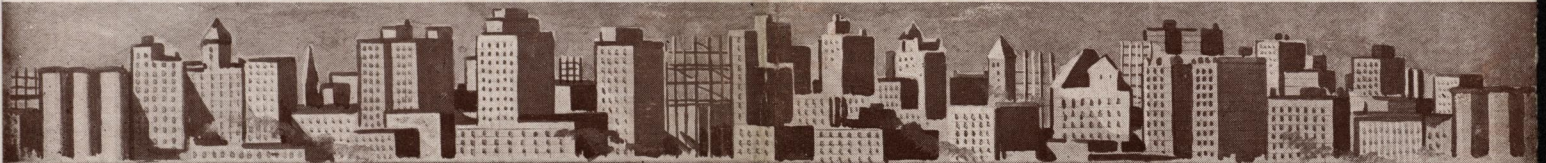
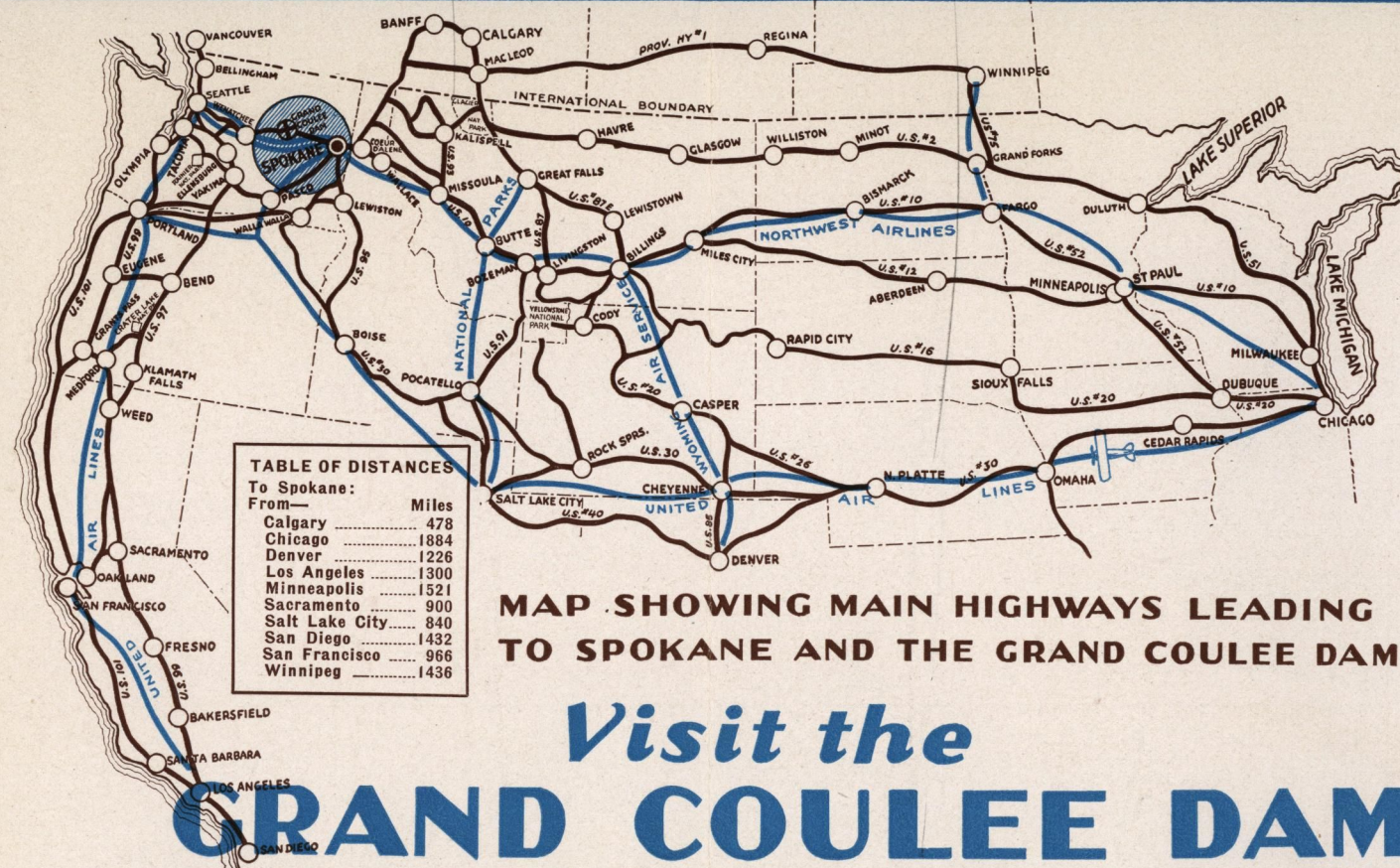


GRAND COULEE DAM



AND ITS HEADQUARTERS
SPOKANE

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SPOKANE



GRAND COULEE DAM is located in North Central Washington 92 miles west of the city of Spokane.

The site of the dam is at the north end of the weirdly beautiful natural phenomenon known as *Grand Coulee*, at a point where the mighty Columbia in a prehistoric age left its original channel and carved a gigantic gash in the earth's crust fifty miles long, 2 to 6 miles wide, 600 to 800 feet deep.

Spokane, metropolis of the vast domain between the Rocky and Cascade mountains, is the nearest large city, the main Gateway to Grand Coulee Dam, and is commercial headquarters for Grand Coulee Dam operations.

Therefore, in visiting the Grand Coulee Dam, come to Spokane first, using this city as base headquarters.

All travel routes—railways, airways—center in Spokane. Five transcontinental railroad systems and two leading air transport lines, offering unsurpassed travel luxury, converge at Spokane, while well-appointed auto stage lines reach this city from every direction. Special excursion fares and low summer rates with liberal stopover privileges without extra cost are available.

A visit to Spokane and the Grand Coulee Dam will provide an intensely interesting break in the journey with but trifling expense in time or cost for the side trip.

Grand Coulee Dam is reached via U. S. 10 (one of the chief cross-country highways) to Wilbur, Almira or Coulee City, and thence over improved state roads for a few miles.

From Spokane, the trip to Grand Coulee Dam may be made by private motor car, by motor coach, or combined rail and stage service in three hours of comfortable driving.

From June 15 to September 7, inclusive, the Grayline Motor Tours operates a daily personally conducted sightseeing service from Spokane to Grand Coulee Dam at the special round-trip fare of \$5.00. These modern coaches leave Spokane each day at 12:00 noon and allow for two full hours of sightseeing at the dam; returning, they arrive at Spokane at 8:00 P. M. During other seasons of the year a daily motor coach service to Grand Coulee Dam is also available. Special arrangements can likewise be made to visit Grand Coulee Dam by chartered airplane. There is a good landing field at Mason City, the contractors' town. The trip by air presents a sensational view of the construction operations at the Dam and the deep, rugged canyon of the Columbia River.

So that visitors may see and understand all the features of the project information facilities are provided by the U. S. Reclamation Service. Observation platforms have been constructed at several promontories overlooking the scene of operations, and a special guide service is available upon request.

Accommodations in the way of modern stores, eating places, service stations—to care for the needs of a resident population of 10,000—are likewise available to visitors, including comfortable hotels and sleeping quarters for those who may desire to stay at the dam over night.

For complete information, free descriptive literature, maps featuring all the opportunities of this region, address the

SPOKANE CHAMBER OF COMMERCE,
Spokane, Washington.

PERTINENT FACTS concerning The GRAND COULEE DAM

GRAND COULEE DAM is a major project in the federal government's comprehensive program for the development of the natural resources of the Nation. It is the key development on the Columbia River, which river holds the greatest hydroelectric possibilities of any river in the United States.

Grand Coulee Dam is being built by the United States Bureau of Reclamation, Department of the Interior, for the national Public Works Administration, and has been given official authorization by the Congress of the United States.

Honorable Harold L. Ickes, Secretary of the Interior and Public Works Administrator, has general charge of the project.

Organization of the U. S. Bureau of Reclamation in charge of Construction

ADMINISTRATIVE HEAD,
WASHINGTON, D. C.

John C. Page is now acting Commissioner

EXECUTIVE OFFICES, DENVER, COLO.

R. F. Walter, Chief Engineer
S. O. Harper, Assistant Chief Engineer
J. L. Savage, Chief Designing Engineer
L. N. McClellan, Chief Electrical Engineer
E. B. Debler, Hydraulic Engineer

FIELD OFFICE, COULEE DAM, WASH.

F. A. Banks, Construction Engineer
J. H. Miner, Office Engineer
A. F. Darland, Field Engineer
B. A. Hall, Chief Inspector
F. J. Sharkey, Assistant Office Engineer
C. M. Cole, Assistant Field Engineer
C. B. Funk, Chief Clerk

LEGAL COUNSEL, PORTLAND, OREGON
B. E. Stoutemyer, District Counsel

General Contractor for the Dam

The Mason-Walsh-Atkinson-Kier Company, comprised of the Silas Mason Co., Inc., of New York, the Walsh Construction Co., of Davenport, Iowa, and the Atkinson-Kier Co., of California.

Official Cooperating Agency for the State of Washington
THE COLUMBIA BASIN COMMISSION HEADQUARTERS, SPOKANE, WASH.

E. F. Banker, Chairman, Olympia
J. E. McGovern, Spokane
James A. Taylor, Seattle
Rufus Woods, Wenatchee
Ervin E. King, Seattle
Jas. O'Sullivan, Secretary, Spokane

Plans provide for the construction of a concrete straight-gravity Dam, which will be a combination power, irrigation, flood control, storage and navigation project. The present contract, now under way, comprises the construction of the complete section for the Dam up to a height of approximately 177 feet and provides for foundations for power houses on both the east and west ends of the dam.

Towering 550 feet above bedrock with a length of 4300 feet at the crest and measuring in width up to 500 feet at the base and 36 feet at the top, the Dam will be the world's largest masonry structure. It will cost \$168,000,000 for dam and power plant, have a power capacity of 2,520,000 installed horsepower and will require from six to eight years to build.

On July 27, 1933, the Public Works Administration allocated \$63,000,000 to start work on the dam.

Bids were opened for the general construction June 18, 1934. The contract was awarded the Mason-Walsh-Atkinson-Kier Company, July 13, 1934, and authority to proceed with the work was given on September 25, 1934.

The completion of the Dam is an initial but essential phase in a vast reclamation development that will bring water to 1,200,000 arid but richly fertile acres located in the Columbia River basin, and create farm homes for 40,000 American families.

The Dam will form a lake in the Columbia extending upstream 151 miles to the Canadian border, containing more than 5,000,000 acre feet of useful storage. Water thus impounded will be raised 280 feet, by a pumping installation of ten units, the largest system yet devised, and emptied into a reservoir 23 miles long, to be created in the Grand Coulee itself.

Secondary power will furnish the energy to drive the twenty 33,000 horsepower motors for the pumps.

The estimated cost of the combined Grand Coulee Dam-Columbia Basin irrigation development is \$393,000,000, but the total estimated investment that will be required is \$260,000,000, since power revenues will be credited. The entire project will be self-liquidating through power revenues and payments by settlers. Land on the project will be available to settlers at reasonable prices.

The next essential step in providing for the actual irrigation of the Columbia Basin area, now being undertaken by the United States Bureau of Reclamation, is a comprehensive survey and classification of all the land in conjunction with a study of the proposed canal line.

The survey, which will cost \$250,000, under direction of Construction Engineer Frank A. Banks, will enable the Bureau, according to the late Reclamation Commissioner, Elwood Mead—"to plan properly the fields, towns, roads and other important units in the great reclamation development."

Based upon carload shipments in 1929 from other states into the Yakima and Wenatchee irrigation projects in the State of Washington, the new population that will be supported by the Columbia Basin project will require annually from other states 200,000 carloads of manufactured and agricultural products.

U. S. Army Engineers estimate the Columbia Basin project will add 1,403,000 people to the Pacific Northwest, and increase the taxable wealth by \$3,000,000,000.

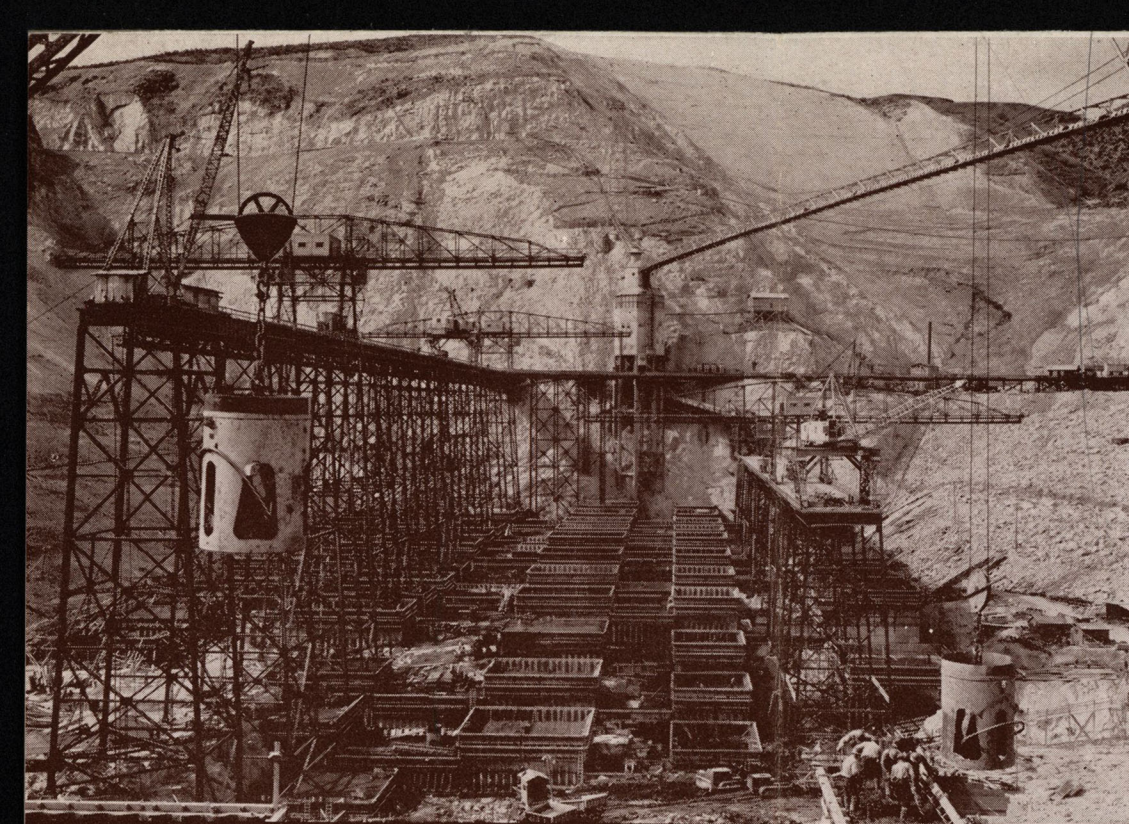
Grand Coulee and Boulder Dams Compared

From tabulation of U. S. Reclamation Service

| | Grand Coulee Dam | Boulder Dam |
|---|------------------|---------------|
| Height (feet) | 550 | 730 |
| Length of crest (feet) | 4,300 | 1,180 |
| Width at base (feet) | 500 | 650 |
| Width at top (feet) | 36 | 45 |
| Excavation (cu. yds.) | 17,000,000 | 7,000,000 |
| Mass concrete in dam (cu. yds.) | 11,200,000 | 3,200,000 |
| Total rated capacity (h. p.) | 2,520,000 | 1,835,000 |
| Firm power developed (KWH) | 8,320,000,000 | 4,330,000,000 |
| Secondary power developed (KWH) both per year | 4,170,000,000 | 1,550,000,000 |
| Lgth. of main reservoir (miles) | 151 | 115 |
| Average width (miles) | 0.8 | 2 |
| Average annual run-off (ac. ft.) | 79,000,000 | 15,700,000 |
| Max. flow of river (sec. ft.) | 725,000 | 300,000 |
| Min. flow of river (sec. ft.) | 17,000 | 2,300 |
| Spillway capacity (sec. ft.) | 1,000,000 | 400,000 |

Columbia Basin Irrigation Project

| | |
|---|-----------|
| Average pumping lift, Columbia River to storage reservoir in Grand Coulee | 280 ft. |
| Number of 800 second foot pumps | 20 |
| Secondary h. p. required for pumping 20—33,000 h. p. motors | 660,000 |
| Length main canal—river to storage reservoir (miles) | 1.8 |
| Length Grand Coulee storage reservoir (miles) | 23 |
| Useful acre feet of storage in reservoir | 339,000 |
| Length canal—reservoir to branch canals (miles) | 9.2 |
| Area to be reclaimed (acres) | 1,200,000 |
| Number of farm units (40 acres each) | 30,000 |



Block by Block, embedding Giant Steel Trestles, the Goliath Dam rises—ultimately to span the Columbia 4000 feet from Cliff to Cliff.



A STRIKING FEATURE OF WESTERN TRAVEL

"If these 1,200,000 acres were subdivided into farms of 10 to 80 acres, homes would be provided for 40,000 families with twice as many families in towns and industries which will be part of that development.

"To let this immense, dependable water supply run unused," said Dr. Mead, "is an economic waste, the extent of which is only realized by those who know that country."

The harnessing of the Columbia at *Grand Coulee* will conserve the great flow of the stream, increasing its water resources as far downstream as the Snake river by 100% and below the Snake by 50%. It will exercise essential control at high water stage and prevent devastating floods at the mouth of the Columbia, as well as providing an important aid to navigation by deepening the river at Portland during low water stage as much as three feet.

Nation's Largest Hydro-Electric Project

The *Grand Coulee Dam* will be the largest power development possible in North America. Over 500 feet above bed-rock, and 4300 feet long, or nearly four times the length of Boulder Dam, it will develop three times the power of Muscle Shoals, 50 per cent more power than Boulder Dam and will equal the total installed capacity of Niagara.

As late as the fall of 1933, the *Grand Coulee* stretched alone among its shadows, while the Columbia at the base of its steep banks rolled on unheeded. On the Coulee floor and on the plateaus that approach it sagebrush grew and withered undisturbed except by winds that bent the branches into grotesque shapes and whirled the white sands of the silent place in ghost-like spirals that reached up to the dark foreboding of the cliffs.

But in 1933, President Roosevelt caused the P.W.A. to allocate \$63,000,000 to start the dam. Men of vision and courage dreamed and worked for a half century for this triumph. The vast tide of the largest river entering the Pacific Ocean from the east and the mighty sweep of hundreds of thousands of acres of fertile but water-hungry land, challenged the imagination of the pioneers.

Time and again the enterprise they proposed seemed hopeless, yet the struggle was carried forward indomitably. Notable as the *Grand Coulee* project will be from an engineering standpoint, it is still more notable as a monument of patriotic zeal and lofty vision.

With Federal funds available and the Coulee project designated as a National undertaking, activity began on the sagebrush plains.

As the visitor reaches the high cliffs where the road begins its descent to the Coulee and the Columbia he stands amazed at the pioneer towns that have sprung into being. Hundreds of feet below, the unpainted wood houses nestle on the flats. Behind and below are the jagged rocks dotting the yellow of the slopes of sand and dried grass. From the next curve, the bend of the Columbia is visible, with hills across continuing on into the distance, a panorama of grandeur.

Children are going to school in a new school-

house while past their classroom windows hurries a procession of the station wagons of the engineers, of heavy trucks hauling machinery to the damsite. There is the clang of giant steam shovels as they bite into the hills of sand and powdery volcanic ash and the sound of blasting comes intermittently.

A railroad—the first to come within many miles of this mammoth gorge and land of silent rocks—newly completed, carries heavy machinery, lumber, cement, and quantities of supplies to the scene of construction.

A new bridge spans the Columbia just below where the dam will be. Great cofferdams, one alone larger than Muscle Shoals, divert the mighty surge of water that deep excavations can be made to reach solid foundations of granite where the permanent dam will rise in an amazing mass to stretch from cliff to cliff—the only structure yet created to exceed in the bulk the great Pyramid of Egypt.

Behind the west bank cofferdam concrete is already being poured. Anchored high on a rock wall, a huge electric "house of magic" mixes cement and aggregate, loads constantly huge buckets that move out over towering steel trestles on rumbling flat cars; gigantic cranes lower and dump the big buckets and block by block the foundation rises.

Downstream a short distance, the United States Government has built a model town for its engineers. Across the river the contractor has established his workmen and their families in the world's first all electric city.

Between Towering Sculptural Walls

Up the hill and away from the river, one enters the upper section of the *Grand Coulee*—that portion of the geological wonderland to be used as the giant reservoir. Big pumping stations will raise the water backed up by the dam into this natural rock-lined Canyon from where by means of many canals it will flow out to reclaim the fertile acres of the Columbia Basin.

Seven miles from the damsite is Steamboat Rock, which towers 900 feet. More than 1½ miles long and ½ mile wide, it was left as an island when the magnificent prehistoric waters divided and cut back on either side of the great rock to the Columbia.

At the entrance to the lower Coulee the great canyon opens downward where a mighty cataract once poured over a sheer drop of 417 feet. Nearly five miles in width, one can hardly comprehend what the magnitude of Dry Falls once was. Here was indeed the most gigantic water fall of all geological history. This lower Coulee, when *Grand Coulee Dam* is complete, will remain for the wonder of the sightseer. It is even more spectacular than the upper Coulee. In some places about a mile in width, the sheer rocks of its western walls rise 1200 feet.

The purpose of *Grand Coulee Dam* is irrigation—to use the rush of the Columbia to raise the water to the lands which stretch away from the gigantic canyon of the Coulee. The soil is rich volcanic ash which needs only the touch of water to make it blossom as the rose.



Site of Grand Coulee Dam on the Columbia. Here is being built the largest single structure in the World, surpassing in bulk the Great Pyramid.

"I Suggest that you examine the great Grand Coulee!"

THUS in 1853 wrote Isaac Stevens, first governor of the Territory of Washington, to one of his lieutenants,—and Governor Stevens' advice echoed through the years.

It was heard by scientists and geologists who came from all corners of the earth. Engineers of world fame gave heed; Major General George W. Goethals, who built the Panama Canal; Ex-President Herbert Hoover; then, President Franklin D. Roosevelt, turning the eyes of the Nation to the *Grand Coulee*, and bringing with him his Secretary of War, his Administrator of Public Works, and Dr. Elwood Mead, then United States Commissioner of Reclamation.

A Place of Gigantic Wonders

Located ninety-two miles west of Spokane in Central Washington, the *Grand Coulee* awes all who come, and tells how the mighty Columbia, rising in the snows and mountains of Canada and Montana, is but as the smallest stream compared with the Columbia of ages gone.

Before the reckoning of time there also flowed torrents of lava. Hissing, boiling, they fought with angry waters.

Slowly the lava cooled. As the centuries passed, plant life appeared. But another hot flood came. Again it cooled and life returned. Thus for seven successive periods between each of which hundreds of thousands of years elapsed. These lava flows are clearly defined on the Coulee walls. The rock is dark and porous, streaked with greens and reds.

After the last lava flow, an ice sheet, said by scientists to have been 4000 feet thick, descended from the North. It car-

ried huge quantities of boulders and gravel, and blocked the bed of the river, forcing this mammoth stream to cut the *Grand Coulee* for its valley.

Fifty miles long, the Coulee is a chasm several miles wide, with walls of rock towering in places a thousand feet. As the prehistoric glacier retreated, the Coulee was left dry, for the Columbia went back unhindered to its original course. It is where the waters once broke through to form the Coulee that the United States Government is building the world's greatest dam.

The Nation's Most Powerful Watercourse

To understand how great this dam will be, to comprehend the majesty of the Coulee, it is necessary to know something of the Columbia River.

It is exceeded in size in the United States only by the Mississippi. Because its source is high in a region of melting snows, its discharge is more continuous throughout the entire year than that of any other river of the land and in 1934 it carried more water than all the streams of the arid regions combined. At *Grand Coulee* it has a minimum flow of 17,000 second feet and a run-off five times as great as that of the Colorado river at Boulder Dam.

This vast amount of water at present rushes on, unused to the sea, while bordering its canyonlike banks is a vast stretch of arid land, the Columbia Basin project, 1,200,000 acres of which can be irrigated, and which was designated by United States Commissioner of Reclamation, the late Elwood Mead, as "one of the most fertile bodies of irrigable land in this or any other country."

Will Unlock Doors to Great National Wealth

THE *Grand Coulee* and Columbia Basin development is not a remote project. These vast acres, which will be reclaimed, lie in the central part of the state of Washington closely adjacent to markets in the trade territory of Spokane, in the extensive industrial centers of the north Pacific coast, and convenient to California, the Orient, and Alaska.

All transportation facilities are at hand. The territory is served by excellent highways, that cross it with several routes, and by the great transcontinental railroads of the northwest.

Moreover, within the state of Washington are vast undeveloped resources—important among them deposits of magnesium, large limestone beds, and deposits of magnesite and aluminum. The United States Geological Survey estimates that there are 7,000,000 tons of magnesite in Stevens County alone. There is a growing demand for light metals such as magnesium alloys. The production of aluminum, the only competitor of magnesium alloy, grew from 7000 tons in 1900 to 269,000 in 1930.

Production of 500,000 tons of magnesium in a year, an amount commensurate in a few years with the growth of the industry, would utilize the entire firm power of the *Grand Coulee Dam*.

These figures are from a report by Dr. A. E. Drucker, Dean of the School of Mines and Geology at the State College of Washington. Thus, the complete *Grand Coulee Dam* will bring into being a commercial commonwealth that will produce hundreds of millions of dollars of new wealth to the Nation.

It will unlock the vast treasure house of raw materials contained in the Spokane country, and create an extensive industrial development. This within a territory which enjoys a climate almost ideal; that has vast agricultural resources;

some of the world's greatest timber wealth; a land which offers living at its best.

Recent drought conditions emphasize the need for a steady water supply for the farms of the United States. The Columbia Basin project, when developed, will offer the most dependable water supply on the Continent, embracing 1,200,000 acres, and soil that is 2½ times as productive as the average farm lands of the United States.

As President Roosevelt said in his address at the *Grand Coulee* in the summer of 1934: "You have acreage capable of supporting a much larger population than you now have. And we believe that by proceeding with these great projects it will not only develop the well-being of the far West and the Coast, but will also give an opportunity to many individuals and many families back in the older settled parts of the Nation to come out here and distribute some of the burdens which fall on them more heavily than fall on the West.

"You have great opportunities and you are doing nobly in grasping them. A great many years ago, 75 or 80, an editor in New York said: 'Go West, Young Man, Go West.' Horace Greeley is supposed to be out of date today, but there is a great opportunity for the people of the East, people of the South and in some of the over-crowded parts of the Middle West. . . . You shall have the opportunity of still going West.

" . . . I know that this country is going to be filled with the homes not only of a great many people from this state, but by a great many families from other states of the Union; men, women and children who will be making an honest livelihood and doing their best to live up to the American standard of living and the American standard of citizenship.

"I leave here today with the feeling that this work is well undertaken, that we are going ahead with a useful project and that we are going to see it through for the benefit of our country."



PANORAMIC PERSPECTIVE of the SPOKANE REGION
—INCLUDING THE—
GEOLOGICAL AND SCENIC WONDERLAND Embracing the
GRAND COULEE DAM

as it will appear when the development is completed, showing
SPOKANE—Gateway City and Commercial Headquarters. Its proximity and accessibility;
The HIGHWAYS and RAILROADS serving the territory, the Lakes, Rivers, Mountains,
National Parks and Forests . . . unmatched natural splendors of the scenic Inland Empire;
The COLUMBIA BASIN AREA—to be developed by irrigation under the Grand Coulee
project . . . containing one of the most fertile bodies of irrigable land in the country.

TABLE OF DISTANCES (shortest route by motor car) to Grand Coulee Dam . . . from

| Miles | Miles | Miles | Miles |
|-------------------|-------------------|---------------|-----------------|
| Almira 21 | Ephrata 64 | Oroville 106 | Soap Lake 57 |
| Bonners Ferry 200 | Harrington 69 | Pasco 150 | Spokane 93 |
| Cheney 97 | Hartline 29 | Portland 385 | Syracuse 93 |
| Coeur d'Alene 126 | Lewiston 197 | Reardan 68 | Tacoma 280 |
| Colfax 119 | Metline Falls 202 | Reardan 68 | Trul 236 |
| Colville 173 | Nelson 261 | Reardan 68 | Walla Walla 197 |
| Coulee City 33 | Nespelem 16 | Republic 90 | Wenatchee 73 |
| Creston 33 | Newport 139 | Ritzville 139 | Wenatchee 99 |
| Davenport 55 | Odessa 59 | Rosalia 125 | Wilbur 26 |
| Ellensburg 146 | Okanogan 70 | Sandpoint 171 | Yakima 170 |
| | Onak 69 | Seattle 206 | |