STATE OF OREGON

Third Biennial Report

Postwar Readjustment and Development Commission

Covering 1947 and 1948

SALEM, OREGON, 1948

Oregon
Postwar Readjustment
and Development
Commission

206 Capitol Building
Salem, Oregon

THE STATE OF OREGON

IS

FIRST
In population by percentge gain—49.3 percent.

SECOND
Highest percentage of increase in tax collections, 1940-1947.

FOURTH
Percentage increase in total income payments

EIGHTH
Percent of farms with electric service

TWENTIETH
In manufacturing payrolls

TWENTY-FIRST
In per capita income

TWENTY-FIRST
Percentage increase in Government workers (Federal, State, Local)

TWENTY-EIGHTH
In total income, $1,932,000,000

TWENTY-EIGHTH
In cash farm crops

Covered payroll in 1941 (peace year) was $338,517,681. In 1948 the covered payroll will approximate $860,000,000.

Oregon now has the greatest population, 1,626,000; the greatest employment, 624,500; the highest wages, median all covered workers, $2,703 and the most industrial development, 16,600 concerns in its history.

In various groups the median wage differs from the all-covered, such as the lumber workers.

In 1947 there were 35,690 workers who recived more than $4,000.

DEVELOPMENT OF OREGON

Wherever there are people there is a market; the more people the greater the market.

Oregon has a rapidly expanding market and this is of significance to national industries who have already located here since the war, with others studying the conditions in the state, and old pre-war industries which have increased plant capacity.

Oregon today has approximately 16,600 industries contributing a payroll tax to the State Unemployment Compensation Commission. At the end of the war there was slightly less than 10,000. In the past 2½ years, 6,600 new concerns have been established in the state. These employ from more than 500 workers down to 4 persons on the payroll.

The labor force is estimated at 660,000 with about 20,000 drawing unemployment benefits while looking or waiting for suitable work. The working force includes approximately 50,000 harvest workers for the berry, hop and fruit crops.

Of the 250 multi-million dollar manufacturing concerns in the United States, as listed by a Congressional committee, 10% have invested in branches in Oregon, two score others have built or leased warehouses for distributing their product. Still others have and are spending several million dollars in purchasing sites and erecting buildings throughout the state to sell their commodity direct to the people. National concerns not included in the 250 giants have likewise entered the state.

Oregon's phenomenal increase, 49.3%, surpasses all other states in the Union. It is the greatest percentagewise increase that any state has had in any time, if the records of the U. S. Bureau of the Census are a criterian.

As of July, 1948, latest estimate by the Bureau, the civilian population had increased to 1,626,000 from the 1,089,000 population taken in 1940.

War industries attracted thousands from every state and the territories, men and women who found employment in the shipyards, the aircraft industry and the dozens of other war activities. However, the great migration to Oregon came after V-J Day and in 1946, 1947 and 1948 according to the Bureau.

Here is the manner in which the population was built up:

1941	there were	39,000	new people
1942	there were	19,000	new people
1943	there were	97,000	new people
1944	there were	48,000	new people
1945	there were	6,000	new people
1946	there were	123,000	new people
1947	there were	111,000	new people
1948	there were	183,000	new people

After V-J Day, 1945, many thousands of war industry workers departed for their home states. This had occurred in other years as the migrants anticipated the close of hostilities and the folding up of war jobs, but replacements continued coming in.

Births were an important factor. At the beginning of the war there was an increase in the birth rate, then this rate decreased during hostilities. As demobilization came and troops were returned to the United States and became civilians, families were reunited and there has been an increase in marriages and this was followed by a rise in the birth rate again. The same pattern was followed that has existed in every war period.

Evidences of the growth of population is found in every section of the state and in the smallest communities. The larger cities find throngs on the transportation buses, the sidewalks are crowded, the stores are crowded and there are few places where an automobile can be parked.

To accommodate war workers with shelter the government poured $100,000,000 into the state for temporary housing. The largest housing development built by the federal government in the United States was Vanport, which was swept away by the Columbia River flood, May 31, 1948.

Housing is still the Number One Problem. It is still critical. In the past 34 months, 4,805 units have been constructed and 273 apartment houses in Portland alone.

New subdivisions have been platted in the environs and hundreds of homes built east, west and south of Portland's boundaries, representing an investment of millions.

This house-building has provided employment for carpenters, plumbers, electricians, brick masons and the building material suppliers, not the least of these being the sawmills and plywood manufacturers. Costs have risen, however, until they are beyond the capacity of the average veteran to carry the load and every item required to construct a dwelling is substantially higher than formerly.

The demand for rentable houses is unsatisfied. People coming to Oregon are not all inclined to buy a home until they have looked around the state and found a town that has an appeal to them and until they are satisfied as to employment and environment they prefer to rent instead of being home-owners.

Shortage of housing has caused many people, who like Oregon, to move on seeking a place to settle in some other state.

To meet the requirements of the added population Oregon has launched on a comprehensive school building program—elementary, junior and senior high schools and the college and university levels. Scores of new church edifices, and additional hospital facilities are being provided. These activities in turn, have increased the number of teachers, physicians, attorneys, nurses and office workers

and this group has resulted in the construction of office buildings. To service the growing population there has grown up new groceries—chain and independent—restaurants and cafes of all types; more barbers and beauty shops, more service stations, laundries, garages, warehouses, etc.

It all adds up to more jobs.

Practically every incorprated town in the state is attempting to provide services to meet demands of the new population. This means additional police and fire protection, paving and sidewalk maintenance, more street lights and teachers. Meeting these pressing necessities can be translated into higher taxes. Various towns are undertaking to increase their revenue by installing parking meters and a recent survey by this agency discloses that more than $1,000,000 will be taken by the meters this year. Notwithstanding the shortage of automobiles, there is one passenger car for every three persons in the state. The horse and buggy days are gone forever and the hitching rack has been replaced by the meter.

The Census Bureau estimated that from April, 1940 to June, 1947, of the Oregon population 26.9% were between the ages of 5 and 7 years and there had been an increase in this bracket of 56,000 or a total of 265,000 in the elementary school age.

It is this notable increase of youngsters that has caused the school districts of Oregon to launch frantically, a building program to accommodate these children. Millions of dollars have been and are being spent in the past two years in expanding the school facilities for the elementary grades particularly. The financing of this construction program has come almost entirely from the sale of bonds. Some school directors have hesitated and been loath to saddle a heavy bond obligation on their district when they feel that within a few years the peak of elementary pupils will subside.

Oregon is one of 16 states showing an increase in the 5 to 7 year group. There has been no increase in 32 states.

MANUFACTURING GROWTH

Growth of Oregon as a manufacturing state is notable. Statistics for the war year of 1944, show that the percentage of its total income from manufacturing payrolls was 32.3%, compared with the national average of 28.2%. Of this manufacturing payroll 19.2% was from shipbuilding, aircraft and similar war industries, a percentage which was exceeded only by Washington state.

In the non-war industries of that year, Oregon's income was 13.1% against 9.4% for the nation. In non-war manufacturing payroll Oregon's percentage exceeded California and Washington.

Major non-war manufacturing payroll in Oregon is that of the lumber industry, embracing logging, sawmills and wood products. In 1947 this payroll was $230,372,057 of the total $864,454,805.

THEN AND NOW

Concrete evidences of growth, comparing April, 1940 with August, 1948, are shown in the following tabulation:

	April, 1940	March, 1947	August, 1948
Civilian Labor Force	453,382	584,500	650,000
Employment	339,798	540,100	628,800
Unemployment	63,584	44,400	22,000
Construction	20,700	42,000	47,000
All Manufacturing	81,569	126,000	157,700
Food Products	9,680	16,000	31,400
Lumber	43,710	62,000	85,000
Textiles & Apparel	3,892	6,500	5,900
Pulp and Paper	3,589	5,300	5,400
Iron and Steel	2,831	4,500	3,300
Trans. Equipment, Ships	513	4,600	2,500
Machinery	2,262	5,300	
Other Manufacturing	15,092	22,000	27,500
Transportation, Utilities	30,803	50,000	51,500
Wholesale and Retail Trade	73,694	111,500	121,000
Finance & Realty	11,749	16,000	17,300
Service Ind.	73,804	91,500	95,000
Agriculture, Forestry, Fish	73,390	79,000	113,000
Income Payments to Individuals	$633 Million	$1,936 Million	

NEW BLOOD

The list of industries which have settled in Oregon since V-J Day are too numerous to catalogue, for they represent approximately 7,000 enterprises. A number are branches of national concerns which see the advantage of entering this, the fastest-growing state in the union, and the enlarged market of the Pacific Northwest in particular and the entire Pacific Coast in general. Here they find all types of transportation and distribution facilities, and some are near the raw materials they process. Several envision the market in the Orient for their products, which can be dispatched from the Willamette River to any port in the world.

Most of the national industries which have come into the state have established branch plants under a policy of decentralization. Two wars have somethting to do with decentralization as managers prefer distributing their activities in various parts of the country rather than concentrate in one community. And again, suggestions from Washington D. C. to locate in small communities of not more than 50,000 population and in regions safe from attack, is having its effect.

Some people think of industries as smokestacks, vast sprawling plants with thousands of workers going through the gates twice a day. They think of the mammoth steel plants and automobile factories, but overlook the fact that a one-industry town goes into a depression when work stops and ignore the history of great industries, each one of which, started in a very small way. The industries in Oregon are so diversified that a shut-down in one cannot paralyze the life of a community. Several of those now operating are already expanding into the Big Time Field.

Following is a partial list of free enterprise indicating the scope and variety of new industries that are building up Oregon's economy: Cracker factory (national); formaldehyde plant (national; trailers; house trailers; lead refining; cement tiles; chromium furniture; popcorn wagons; chemical fire extinguisher; wire products; baked enameling; assembly of logging equipment; nonferrous electric plating; four manufacturers of automobile batteries, (each national and output sold to mail-order-houses); soap factory; aluminum luggage carriers; shoes; candy; several bottling plants for carbonated water; brushes; gun stocks; sports wearing apparel; upholstering; several furniture factories; rock wool; factory making linen rugs and shipping tons of the finished material to New York; stoves; asphalt plants; creosoting plants; ammonium sulphate for fertilizer; cross-arm plant; baskets; varnish; paints; precision instruments; traffic lights; water softeners; plywood plants; venetion blinds; wall board; handles for brooms, etc; veneer; furniture core; ladders; roofing felt; pleasure boats; manufacturers of insulation materials; guided model airplanes; electric trains; wooden toys; makers of prefabricated houses, one with federal guarantee of $40,000,000 and sold throughout the United States; steel plant; chemical plants (national) manufacturing insecticides and weed killers; sheet metal fabricators; lime plants; national company reportedly spending $3,000,000 experimenting with native bauxite; breakfast food (national); cabinet making for national radio manufacturers; bakeries; theaters; drive-in theaters; non-ferrous alloys; three plants mixing phosphates; additional canneries; factory making window shades; electric machinery; (national) company producing tin can containers; business forms (national); ice making plants; (national) company manufacturing tinned dog food; kitchen cabinets; additional maplewood souvenir concerns; furnaces; magazine "slick" paper; flagpoles; cement and pumice building blocks; development of perlite for wallboards and insulation; excelsior; aluminum sash factory; plant making medical salve; florescent sign manufacturer; pastry and doughnuts; wood and metal patterns; metal paints; plant specializing in nursery chairs; sheet aluminum; sulfate mill to use wood waste in making cartons; arrows; long bows; fishing rods; pottery; abrasives; plastics; electric wall heaters; deep freezer manufacturers; circulating heaters; aluminum plant at Troutdale leased by national concern; presto logs; etc.

MORE POWER REQUIRED

Demands for electric power by industrial and domestic consumers, due to the increased number of industrial enterprises and the great growth in population since the war is becoming so serious that there is apprehension of a shortage by 1952.

Several industries whose requirements for power will be important, have been advised to not build plants here until there is power available for their wants.

The Federal government has been slow in making necessary

appropriations to expedite the construction of McNary Dam and the private utilities in both Oregon and Washington state are programming the expenditure of multi-millions of dollars to increase their own power facilities to alleviate the shortage that threatens.

In Oregon alone, the private utilities plan the expenditure of about $92,050,000 and this year they have already spent or contracted for $20,150,000 of work. In 1949 another $27,600,00 will be used and in 1950 they will spend $20,800,000; in 1951 the sum will be $12,000,000 and in 1952 there will be a final $11,500,000.

The companies and their expenditures for each year follows:

Company	1948	1949	1950	1951	1952
P.G.E.	$ 8,000,000	$ 7,000,000	$ 6,000,000	$ 6,000,000	$ 6,000,000
P.P. & L.	6,700,000	8,600,000	5,500,000	4,500,000	4,000,000
Mt. States	2,250,000	2,000,000	1,500,000	1,500,000	1,500,000
Copco	3,200,000	10,000,000	7,800,000		
Totals	$20,150,000	$27,600,000	$20,800,000	$12,000,000	$11,500,000
Grand Total					$92,050,000

PUD PLANS: Lincoln County Cooperative, bonds, voted, $700,000; Tillamook County Cooperative, bonds voted, $250,000; R.E.A. loan to Eastern Oregon Cooperative, $100,000. Total, $1,050,000.

Instead of having great quantities of power running to waste after the war, the Bonneville Power Administration and the private utilities discovered that the expected surplus was quickly absorbed by peace-time consumers. Industries came into the territory, attracted by the low power rates and the aluminum plants consumed a tremendous load. Domestic consumption increased rapidly as appliances became available—electric ranges, refrigerators, vacuum cleaners, washing machines, electric mangles, radio receiving sets, toasters and other appliances which were not obtainable during the war. Demand increased on farms for more lights and power for milking machines, separators, pumps and the average farm wife in Oregon has everything electrical in her home that the housekeeper in the city has. There are more electric signs.

Today residential consumers use almost 2.5 times the national average of KWH in Portland and the Willamette Valley.

The 7,000 new enterprises all need more or less power and these plus the population—ever increasing—have taken over the energy used in the war plants. The suppliers of electricity are scraping the bottom of the barrel.

A national manufacturing company, producing metal products, is impatiently waiting the time when it can start construction, which will be governed by availability of power. Not all industries planning on branches or main factories in Oregon will be heavy consumers, but they will be customers.

A new federal power source will be McNary Dam in the Columbia River, but Congress refused to authorize a sum sufficient to hasten completion by a single year. The outlay of private companies for 1948 and 1949 exceeds the money given the McNary enterprise for the year ending next June. President Truman in his budget recommended $30,000,000 and the Oregon delegation urged $40,000,000 for the fiscal year, but the allocation was $22,000,000.

Non-federal power projects underway are:

Mountain State	56,000 KW in 1949	Pac. P & L	45,000 KW in 1950
California-Oregon	28,300 KW in 1949	Eugene Municipal	35,500 KW in 1950

The foregoing 164.800 KW is about equal to three generators at Bonneville.

Federal, under construction or proposed:

Detroit	90,000 KW	Meridian	115,000 KW	Hill's Creek	20,000 KW
Big Cliff	16,000 KW	Dexter	15,000 KW	McNary	828,000 KW

Residential and farm consumption increased 202% over 1940 and commercial and industrial increased 81%.

PGE paid Bonneville Power Administration $518,311 for power in 1940 and in 1947 it paid $2,545,500.

The two private power utilities in Portland gained 11,300 new customers last year. The additional accounts for this year has not been tabulated, but the customers keep pace with the swelling population. Portland General Electric customers used 3,745 KWH and Pacific Power and Light reported 3,640 KWH. One of the companies gained 1,386 new accounts of industrial users in 1947.

In the matter of long-range planning, the Corps of Army Engineers have prepared a preliminary report for the development of Hell's Canyon in the Snake River, between Oregon and Idaho. This development would require such a vast sum and require such an amount of preparation that it will be years before it commences to materialize.

PUBLIC SERVICE

This year the Pacific Telephone & Telegraph company because of the business growth and population in Oregon, has expended $21,000,000 in expansion. Its plant investment January 1, 1941 was $40,600,000 and today it is in excess of $100,000,000.

There were 168,000 telephones on its system in this state at the beginning of 1941 and as of today there are approximately 300,500. The employes have also increased from 2,200 to 6,700 and the payroll for 1948 will exceed $17,000,000.

To serve its customers in the larger communities it has had to erect buildings for administration purposes and exchanges, the building program alone running into the millions of dollars and creating employment for the construction trades. The war years prevented development of its program, but plans were prepared, blueprints made and the past two years has seen the buildings materialize. There will be additional buildings erected in the coming 1949 and additional telephones, too, to keep pace with the demand. Also in the coming year the company will have laid its coaxial cable to Portland from the California line, at a cost of $6,000,000 which will make television possible in 1949.

There is a telephone for every 5.62 of state population.

Some of the answers are contained in the following:

Fruit and vegetables are processed by 400-odd plants. Only one county in the United States has more food processing plants than Marion.

Fresh fruits are exported throughout the world and to the eastern market. Oregon raises 20 percent of the canned peas of the nation and its production of snap beans is exceeded only by New York state. Manufacturers of canned vegetable soups purchase practically all of the ingredients (except tomatoes) from Oregon.

Vetch, rye grass, Austrian peas and similar cover crops chiefly sold to the Southern states—with several shiploads consigned to Europe—bring an estimated $20,000,000 a year to growers in Willamette Valley and Union and Umatilla Counties.

Forest products range from lumber to pulp and paper products, ethyl alcohol, plywood, pres-to-logs and battery separators to veneer.

Under the heading of fibers, furs and hides, there are linen, woolen cloth, leather, furs of beaver, mink, fox, muskrats, chinchilla, mohair, skunks and hare. Fur farming has developed into big business, considered in the aggregate.

Partly processed or semi-manufactured products embrace aluminum, lumber, paper pulp, sulphate mill products, perlite, separators for motor batteries.

Finished products include news and magazine paper, paper bags, cartons, batteries, machinery, linen towels and rugs, woolen cloth, leather, alcohol from wood, ammonium sulphate fertilizer, tents, clothing from sportswear to bathing suits, shoes and blankets.

Labor interests the prospective new industry. For instance, the labor force in Oregon, at the moment is 660,000. The prevailing wage for common labor is important. As to the character of the labor force, the inquirers can be informed it is mostly dependable, the turnover being comparatively low, and that employer-employee relations have been excellent. Unemployment insurance pays a maximum of $20 for 20 weeks, but the claimant must have $300 credits in the basic year before being eligible.

Unemployment in the state is about 25,000 (population of Oregon, 1,626,000). All demands for seasonal employment are met (food processing, lumber operations, etc.). Approximately 17,000 to 20,000 housewives hold themselves in readiness for the food processing season then retire from the labor force until the succeeding year.

Sites. How much land is available for industrial expansion is a question that should be readily answered. Almost every community has sites within its boundaries and all have sites immediately adjacent outside. A few towns will lease a location for a nominal sum—one town offers a site for $1 a year. There are occasionally local difficulties; the industry finds the site exactly suitable for its purpose, but is driven away because people living near-by protest to the authorities.

Type and character of soil suggested for a site should be classified by soil authorities, and Oregon State College has this information. Topographical features should be explained and whether the location is subject to flood conditions.

Added to this subject, the industry will inquire as to the available facilities. These include from water, gas, sewers and electricity to accessability by various means of transport.

Next is the industrial fuel, whether oil, gas, sawdust, hog fuel or coal; the source of supply and its dependability.

An industry must have its raw materials and a means of shipping the finished article. Data on rail, water, highway and airway are necessary and the quality of service explained.

Market. The trading area depends on the product of the industry. Many markets are national in scope (battery separators, as an instance), others are strictly local and still others regional. The usual marketing area is Oregon, southwest and eastern Washington and the state of Idaho. There is the market of the Pacific Basin—China, Australia, Japan, the Philippines, etc., for some Oregon-made products.

Distribution facilities deal with storage, warehousing, transportation, terminal facilities, financial institutions and servicing. Inspections and grading is available. Wholesalers and jobbers have outlets.

It is advisable to learn the freight rates from the point where the raw materials are obtained to the site of the industry and a comparison of rates that a competing industry has in receiving and shipping its product. Freight agents will supply these data, gladly.

Power. Electric energy is furnished by private companies and the Federal Bonneville Power Administration. The latter contracts only with the large industries and does not retail. Both sources are dependable. Rates are among the lowest in the United States and are satisfactory to existing industries and an attractive selling point to those manufacturers requiring substantial blocks of power.

Water. Sources of supply are rivers and mountain streams. There has never been a shortage of domestic water nor an inadequate supply for industrial purposes. Local water rates should be made available to inquiring industries. Water (Bull Run) in the metropolitan area is so pure it does not have to be distilled to place in batteries. Chemical analysis is occasionally required.

Living conditions. In every locality where an industry may desire to locate there are facilities for education, recreation, shopping, religious and social life, health and professional services. If there is one drawback in this category it is shortage of houses,

but this will gradually and eventually be overcome. Some industries voluntarily solve this by erecting dwellings for the employes, especially in the smaller communities.

Laws and regulations. Within municipalities there are codes governing the construction of buildings but none in the "fringe" area. There are state restrictions covering the disposal of industrial waste, especially against emptying the waste into streams and causing pollution.

Climate. Great store is placed by some industries on climate. The number of days of sunshine a year and whether the weather is suitable for out-door or semi-out-door work. Records of precipation, pressure, wind, humidity and sunshine data are obtainable from the Oregon section of the U. S. Department of Commerce, Weather Bureau. These records are collected from 144 stations which blanket every section of the state. They give the complete answer to the weather.

Tax structure. Each community has a different tax picture and no general rule applies. State, county, school and municipal taxes are the principal imposts. There is a slight tax on payrolls for covered workers for unemployment insurance.

Communities also wish to know:

How much labor is required? This is to determine whether the town can provide sufficient housing within a reasonable distance of the plant and will existing school facilities require expansion.

Is a particular fuel required and is low cost heat important?

Does the product of a raw material require a certain type of transportation or low cost movement?

How many kilowatts of power are required?

How much water is necessary for processing and are special qualities called for requiring chemical analysis of the supply?

Does the process require special natural atmospheric conditions?

The community must know what it must furnish in way of utilities, if the industry must be located on a main line or a spur.

AVAILABLE RAW MATERIALS

There is a wealth of raw materials in Oregon that are essential in a long list of industries. Skipping the precious metals, the less spectacular but more practical minerals and non-metallics are available, many in unlimited quantities and with slight effort.

Limestone is the backbone of many industries. It is essential in the manufacture of cement and lime, in pulp manufacturing, in tanning, sugar refining, in sulphite pulp mills, as a water purifier, in production of calcium carbide, mason's lime, soap manufacture, for insecticides, fungicides and disinfectants, masonry mortars, sewage and trade waste treatment, rock wool. Deposits of limestone are in Baker, Wallowa, Douglas, Josephine and other counties.

Clays of Oregon offer a wide variety of uses such as the common building brick, drain tile, sewer pipe, face brick, paving brick, fire brick, architectural terra cotta, art pottery, flower pots, china ware, porcelain, hollow building tile, calcimine, alumina, etc. Kaolin (very pure white clay) is found in Lake County, fire clays in the Roseburg, Molalla and Willamina areas; alumina clay especially in southern Oregon; brick terra cotta and pottery clays in the Willamette Valley. Pottery and porcelain of good quality are minor industries.

All of the elements required in the manufacture of glass are available. Silica sand, lime and soda ash, principal components are found in Oregon. There is no glass factory in the Pacific Northwest. Opportunity exists for the manufacture of glass building blocks, containers (milk bottles, jugs, etc.), glass wool for insulation. One eastern glass manufacturing concern has a site which was acquired several years ago at Longview (Portland trade area) and there the project rests.

Insulating materials are coming into increasing use for cold lockers, refrigeration, sound proofing, pipe coverings, retaining heat in dwellings, etc. Presently available are rock wool, diatomite, pumicite, tufa, perlite, each containing properties peculiarly adapted for insulation. Deposits of perlite are found south of Maupin, tufa in Marion county; diatomite in Deschutes, Malheur and half a dozen other counties; pumicites in the Crater Lake region.

The growing building block industry, encouraged by the shortage of construction materials, has been making great strides and using the inexhaustible supply of pumice and volcanic cinders of Central Oregon. Operators are shipping this material to California and Washington state by train and truck.

Abrasives are found in quantity in many counties and in the black sands of the Oregon Coast in Coos County. These are alumina, silica sand, pumicite, diatomite quartz and garnet.

With more uses than limestone are the diatomite deposits. At present principal markets are paint manufacturers, who use it as a filler. The diatomite is a natural filler, is converted into toothpaste, cosmetics, in sugar refineries and in the manufacture of nitroglycerine. More than one hundred industries require it.

Bauxite, some of high grade, is found in Columbia, Washington and Polk and Marion counties. Laboratory tests are now in process by a subsidiary of Alcoa.

One of the two only known nickel occurrances in the United States is in Douglas County.

Chromite is in several Oregon counties and in the beach sands of Coos County, can be used for direct melting into stainless steel. A stainless steel industry was considered before the war.

Oregon was one of the top producing states of Mercury during the war.

Iron ore (limonite deposits are in Columbia county) and with limestone is suitable for smelting. This is now receiving laboratory tests at the Bureau of Mines laboratory at Albany, Oregon.

Zirconium, a scarce metal, is being experimented with at the Albany plant to reduce the processing cost. It is recovered from the beach sands.

Saline salts becoming increasingly in demand are found in Alkali Lake in Lake County.

Artificial corundum (aluminum oxide) could be furnished at the Alumina-from-clay plant at Salem. Carborundum is made from silica sand and coke. A plant for carborundum production will be built at Vancouver (Portland metropolitan area) next year.

Copper deposits in Baker, Douglas and other counties.

Zinc deposits have not been developed.

And, of course there is the great resource of Oregon forests with its multitudinous by-products.

For more complete list of the geology and mineral resources of Oregon, refer to Bulletin No. 33, which is a bibliography just issued by the State Department of Geology and Mineral Industries, 702 Woodlark Building, Portland, Oregon.

ALCOHOL FOR JET PLANES

A stockpile of 100,000,000 gallons of ethyl alcohol is proposed to be used as oxygenated fuel for rocket planes and jet-propulsion missiles, as alcohol best serves the purpose for fuel of these new instruments of war.

The plant built at Springfield to distill alcohol from wood waste at a cost of about $5,000,000 to the Federal Government, is built for a capacity of 4,000,000 gallons of alcohol a year. The plant is now closed down with no definite leasee or purchaser at the time this report is made to the Governor.

New methods of using blackstrap from sugar cane have been found. There is a steadily decreasing quantity of molasses available for distillation into alcohol. This molasses shortage is also curtailing the source of yeast for breweries and livestock feed and, to some degree, the bakeries.

Molasses is one of the early steps in the production of alcohol from sawdust. One ton of sawdust equals one ton of molasses,

which is 50 percent sugar. Or a ton of dry slabwood will provide from 1700 to 1800 pounds of molasses.

Alcohol can be made from grain and equally good (190 proof) ethyl alcohol can be derived from sawdust.

These needed scarce articles — alcohol and molasses — the Springfield plant can produce in quantities.

Those interested in rocket ships and jet propulsion, now in the experimental stages being conducted by the Army and the Navy, express concern over the inadequacy of the alcohol supply. A spokesman has even suggested that farmers build distilleries, using potatoes, corn and wheat for alcohol—corn and wheat unfit for human consumption. Something must be done if the 100,000,000 gallons are to be placed in reserve in 1949.

During the war Germany obtained its alcohol from its limited supply of wood. The process was devised by a scientist named Scholler. It is this Scholler Process that the Federal Government adopted for increasing the supply of ethyl alcohol. A pilot plant was constructed at Madison, Wisconsin, at the wood laboratory and the results were hailed as a success. Because of the quantity of sawdust and other wood waste available in the Springfield area, a large commercial plant was built. A Government scientist declares that sawdust is the second cheapest method of obtaining alcohol and asserts that on a 24-hour basis the Springfield plant could yield a profit of $1,500,000 a year, saying this is a conservative estimate.

Furthermore, the plant would yield 10 to 12 tons of non-fermentable sugar a day (yeast feed) and this compares with fish feed which sells for $200 a ton. Other profitable by-products would be calcium sulphate, furfural, etc.

A group of 15 lumbermen obtained a lease to operate the plant and they did produce and ship 10,000 gallons. Only one of the half dozen "percolators" was used and the process was watched for bugs. One such was the appearance of an insoluble resin. The Willamette Valley Wood Chemical Company, surrendered its lease. The lumbermen paid $250,000 to solve some of the problems that developed.

Engineers have been studying the plant and report that $150,000 is required for redesigning the machinery; $100,000 for improvements and $250,000 for operating capital. With this money, six months would be required to again pass through the experimental stage and go into production.

A few nibbles have been received by the government for the plant but no deal has been closed.

The government does not favor selling the Springfield installation outright, and believes it should be leased for five-year periods and the experiments continued.

NUMBER ONE INDUSTRY

Oregon's lumbering operations have been moving to the heavily timbered Willamette Valley in the past two years and along the coast.

New operations with new capital, together with old established firms, gave employment this year to 82,000 in the wood-working industry. The coastal counties employed 13,463. This was all in the fir division; the pine division of central Oregon is not included.

Leading county is Lane, which had 10,500 engaged. Second county is Multnomah, then Linn, Douglas, Jackson and Polk. On the coast, Coos leads with Lincoln and Tillamook. Klamath is the outstanding county in the pine belt.

Aside from sawmills, plywood plants are increasing and representing millions of dollars. In 1949 there will be a plywood plant at Coos Bay which will involve $2,000,000; three others in Douglas county involving $2,374,000; a sawmill and sulfate pulp mill in Lane county, estimated to cost $10,000,000 and still another big operation at Coos Bay which has been planned but not announced, and a new plywood plant to start in 1949 in the Portland area costing $1,000,000.

In fiscal 1948, government land was sold by the U.S. Forest Service, O & C counties and private timber, substantially in excess of $30,039,266.

The lumber industry has expanded so remarkably, largely due to the demand for housing throughout the nation, that there are counties which received the greater part of their payrolls from this source. For example, Lincoln county credited 80 percent to lumber; Douglas 70 percent; Coos 66 percent, Linn 65 percent and Lane 55 percent.

With the exception of two small wheat growing counties, every county in the state in 1947 exceeded its 1946 payrolls. Following are examples of a few of the timber counties: Lane, gain $15,397,583; Douglas $7,997,508; Lincoln $7,197,167; Marion $4,969,106; Klamath $3,148,648; Tillamook $3,154,066; Polk $2,691,262; Yamhill $2,230,121. The increased payroll continues through the counties.

And the pay in the lumber industry is excellent. Out of some 82,000 employees, there were 11,490 who received $4,000 and more last year.

There is speculation as to how long the lumber industry can ride high without experiencing a decline. Operators have made deep gashes in the standing timber, cutting more, it is observed, than should be logged, but the demands have been heavy and prices in proportion. The industry does not depend upon a national house-building program, although that presents an excellent market and the market will continue for several years more. Some mills devoted too much of their energy to the production of low grade

material, which commanded a high price. A slump in the price of low grade has developed and finds many mills with docks piled high with this inferior stock.

This may be a hint of things to come and lumbermen are in disagreement on that question.

What is desirable in the industry are more remanufacturing plants where a log, instead of being sawed into planks, can be further manufactured thus providing more employment and a greater payroll. A plywood plant, for instance, uses more workmen in following through on a peeler log than the sawmill.

DEVELOPMENT BY FEDERAL GOVERNMENT

Interrupted by war when manpower and materials were required for war purposes, the Willamette Valley Project was resumed in 1947 and this year the work is beginning to materialize. On Detroit, Dorena and Meridian, construction is in the earth-moving stage.

Buildings for the workmen number 535 at estimated cost of $3,111,774, can accommodate 2,719 on the three damsites, or 4,457 including family capacity. For this fiscal year it is calculated there will be 1,110,000 man-hours on-site at Detroit; at Meridian 1,550,000 man-hours on-site and at Dorena 780,000 man-hours on-site. Meridian will work 1,000 men on the average, with 1,200 at the peak; Detroit will have 550 on an average with 700 men at the peak, and Dorena 350 on an average with 450 at the peak, or an average working force of 1,900.

When completed the reservoir system in the Willamette Valley is expected to cause many changes in the economic structure of the valley. With floods eliminated and water for irrigation, the crop production will be greatly increased and the water can be placed upon the land in the two months when it is most needed. There will be hydro-electric power which can attract more power-consuming industries to the Valley. Navigation will be improved above the falls at Oregon City to the vicinity of Albany. Equally important is the fact that the reservoirs can supplement the domestic water supply of several towns.

It should not be overlooked, that at each reservoir site there will be a recreational area. Anticipating this, yacht clubs have been formed at Cottage Grove and Eugene which are now using the Fern Ridge and Cottage Grove reservoirs.

Dams in the Willamette Valley will not be limited to those now under construction, for the Army Engineers are studying between 10 and 15 re-regulating reservoirs. Estimated cost of the development including money already appropriated is $406,598,000. The program will be advanced gradually.

Since the end of the war the U. S. Corps of Army Engineers have been compelled to revise their estimates of what the multiple-

dams in Oregon will cost. Labor costs and material have increased since then and the Willamette Valley reservoirs and McNary dam are now expected to cost $217,767,000 more than the calculations of 1945.

	1945 est.	1948 est.	Increase
Dorena	$ 4,000,000	$ 14,000,000	$ 10,000,000
Detroit	20,422,000	46,347,000	25,925,000
Meridian	21,518,000	45,383,000	23,865,000
McNary	69,051,000	227,028,000	157,977,000

The increased costs will require some extension in construction, for the increase is not entirely confined to wages and materials, for the revision has resulted in further development which had not been taken into account when the earlier estimates were made.

The dams in the Valley are built as flood control projects principally, although there will be some power, improve navigation and lessen stream pollution. The floods caused approximately $5,000,000 damage at their occurrence. The reservoirs are to impound flood waters and prevent the floods on the main Willamette stream, or materially reduce floods and property damage.

There is no flood control by the dams on Columbia River as these are principally for hydro-electric power. To be useful to hold back floods, such as occurred in May-June, 1948, the dams must be empty to catch the water, but as they are to generate power the dams or reservoirs must be filled with water to revolve the turbines. Flood control and power require diametrically opposite treatment and cannot be combined in a multiple purpose dam without one or the other being sacrificed.

HOSPITALS

Oregon should have 17,000 hospital beds if this state is to meet the requirements of the U. S. Public Health Service.

Beds which now qualify number 8,594.

Some dozen cities, large and small, are now endeavoring to provide their respective communities with hospitalization facilities, and they are looking to the federal government for cooperation. The communities which are planning these facilities hope for 550 beds, which would still leave the state substantially short.

Uncle Sam is prepared to contribute $1 for each $2 raised by local interests for a non-profit sharing hospital. It is this assistance that towns now considering such institutions wish to receive. But Uncle Sam wants to know that the new hospital can operate successfully for two years. The U. S. Public Health Service has no intention of interfering with the operation and management of the institutions which it finances to the extent of 30 percent.

The need of more hospital beds has made itself felt increasingly with the growing population and long before the federal cooperation was decided on by Congress there was agitation in many towns for such facilities. Few, however, had the means to finance

even a modest installation and the 30 percent contribution by the federal government comes as a spur to the planning.

Hospital facilities are urgently required to serve the lumbering and similar industries as well as the general public. Traffic accidents on the highways strengthen the demands. There are communities which require a drive of several hours to reach a hospital.

The Veterans' Administration is now constructing a tuberculosis hospital at a cost of $3,500,000 in Portland, but this is intended only for veterans. The State of Oregon is reconstructing the State Hospital in Salem at a cost of $3,600,951 and is to expand accomodations for the T. B. Hospital at The Dalles and facilities at the Eastern Oregon Hospital at Pendleton. Multnomah County is to erect a T. B. Hospital at Troutdale. At Klamath Falls the Veterans' Administration had plans for a facility, but construction costs were estimated at $4,000,000, which was in excess of the available funds and a revision of plans and a different site is being considered.

Two general hospitals at Salem—The Salem General and the Memorial— find they must expand and each program called for $1,000,000. Still undetermined is whether the hospitals shall have a joint drive or each have a drive of its own.

Applications have been made and approved for the 30 percent assistance for hospitals at Tillamook, Burns, Heppner and Enterprise and $610,000 is involved. Other communities anxious to obtain the financial cooperation are Newport, 40 beds; St. Helens, 30 beds; Sandy, 18 beds; Florence, 15 beds; Ocean Lake, 11 beds; Toledo 10 beds.

First to receive the green light was Tillamook, which for several years has been talking of a hospital that would cost $1,000,000. There will be 75 beds in this hospital with 14 rooms for nurses, which in emergency can be given to patients. Newport has acquired a site while awaiting approval of its application.

FOREIGN TRADE ZONE

When there were but two foreign trade zones in the United States, one in New York, the other in New Orleans, this agency of the Governor endeavored to interest port officials and others in establishing such a zone in Portland, but without success.

Within the year, San Francisco has established a foreign trade zone while Los Angeles and Seattle are advocating such facilities, with a prospect of both achieving their end.

A foreign trade zone is a warehouse, under strict guard, where imported commodities can be processed and reshipped out of the country. If the merchandise is shipped to points within the United States it would pay import duty. Repackaging and other processing makes possible substantial import customs savings.

The desire for such zones by ports in California and Washing-

ton has been prompted by the success of the zones in New York and New Orleans. Chicago, an inland port, is now being promoted by two organizations.

POTENTIAL BUSINESS

Provided China's civil war terminates and the country starts to rehabilitate, it will present an excellent market for certain Oregon products. Here are a number of the items China will require, according to Chinese agents who have been in the United States:

Lumber for reconstruction to provide first shelters for the people who have lost their homes.

China plans to construct six cement mills, but will require an estimated $4,600,000 from this country while the mills are being constructed.

Another need is 30,000,000 bushels of wheat and flour and and this has been an old market for the millers of the Oregon country.

Six hundred thousand tons of fertilizer a year is desired and about 90 percent to be ammonium sulphate, such as the Salem plant has been manufacturing.

DDT and other insecticides are required in immense quantities. Oregon chemical plants are manufacturing these items.

Vitamin tablets and 20 tons of fish liver oil are on the agenda. These can be supplied in part from Astoria laboratories, made from soup-fin sharks and other fish.

Among medical supplies is listed 500 tons of milk powder and soup powder. Milk plants in this state can contribute.

Telegraph poles and railroad ties by the shipload will be needed.

Pending the time China is provided with factories to make soap, hats and shoes it will look to the Pacific Coast for these articles.

Among other needs are hydro-electric plants, irrigation works, and small self-propelled craft to ply along the coast and rivers.

All types of heavy machinery.

This is but a part of what Oregon can provide when and if that country finds peace restored.

Under the Marshall plan, Oregon will supply seeds for the farm lands of Europe and of the fertilizer which will be sent in large quantities, Oregon may provide a portion, if there is a surplus beyond the needs of the farmers of the state and the part which will be earmarked for the orient.

The high grade pears and apples, in which Oregon horticulturalists specialize and which Europe and especially England provided the largest market, have been practically barred under the Marshall plan. England and Europe say they are a luxury and are more interested in necessities.

EROSION AND CONSERVATION

A situation has developed in Oregon of which the general public is unfamiliar but which requires immediate attention.

The Department of the Interior has under its jurisdiction 18,796,000 acres, about 30 percent of the area of Oregon. Of this acreage, 3,698,000 acres is in a critical condition so serious that unless something is done it can be written off as useless. It is the victim of erosion.

It is estimated that to save this critical acreage will cost the federal government about $5,000,000. The lands are classified in three catagories. Priority No. 1, acres most critical on which there must be no delay in an attempt to save them, 3,698,000 acres; Priority No. 2, land damaged and eroding too fast, 4,610,000 acres; Priority No. 3, land moderately eroded and which can wait until Priorities No. I and No. 2 have been taken care of.

Soil conservation districts are increasing. These are locally sponsored and governed units. Any 25 owners of land may petition the State Committee for organization of a district embracing a specific area. A majority of the votes of landowners within the boundaries of the proposed district must be cast in favor of the district and three local landowners nominated by petition by local farmers are selected as supervisors at this referendum. Two supervisors are appointed by the State Committee. After five years the district can be terminated on petition of 25 landowners who own more than 50% of the acreage. There are some 14 districts now actively engaged in the conservation program and they can request and receive assistance from counties, state and federal agencies to perform conservation jobs which the individual farmer is unable to do without technical or other assistance. The district has no authority to levy taxes or assessments and, therefore, look to these agencies for necessary assistance.

The fundemental task of the districts is to conserve the top soil, which is an average of 8 inches. It is this thin covering that is productive.

IRRIGATION

Oregon has been neglected by the federal government in the matter of reclamation. This state has an abundance of water available for new projects but has had to become an interested bystander while Washington, California, Idaho and Colorado are being developed.

Oregon has four federal projects and has eight other potentials. Of the four federal projects, two are not entirely located

in Oregon, for Oregon must share the Vale-Owyhee with Idaho and the Klamath-Modoc with California.

We have 240,000 acres in our projects of which 57,000 acres are in adjoining states. The total cost of these projects will cost the government about $50,000,000. Oregon's projects are the Klamath with 67,7000 acres and 26,000 acres in California. The Vale-Owyhee will cost about $24,000,000 watering about 104,000 acres in Oregon and another 31,000 acres in Idaho. The North Unit of the Deschutes has about 50,000 acres and will cost approximately $11,000,000 and the Umatilla with 18,000 acres.

The potentials are Bully Creek, with 5,000 acres; Crooked River with 50,000 acres; Rogue River with 74,000 acres and 40,000 additional for supplemental water; Klamath with 500,000 acres; possibly 250,000 acres adjacent to McNary Dam—mostly in Washington; Willamette Valley with 1,000,000 acres available and about 60,000 irrigated, and Grand Ronde.

Washington has the Grand Coulee project with 1,200,000 acres and the Yakima Valley with 250,000 acres developed and 191,700 acres for supplemental water. Idaho has 445,000 acres and 993,320 for supplemental water. California has the Imperial Valley, the San Joaquin Valley and the Sacramento Valley.