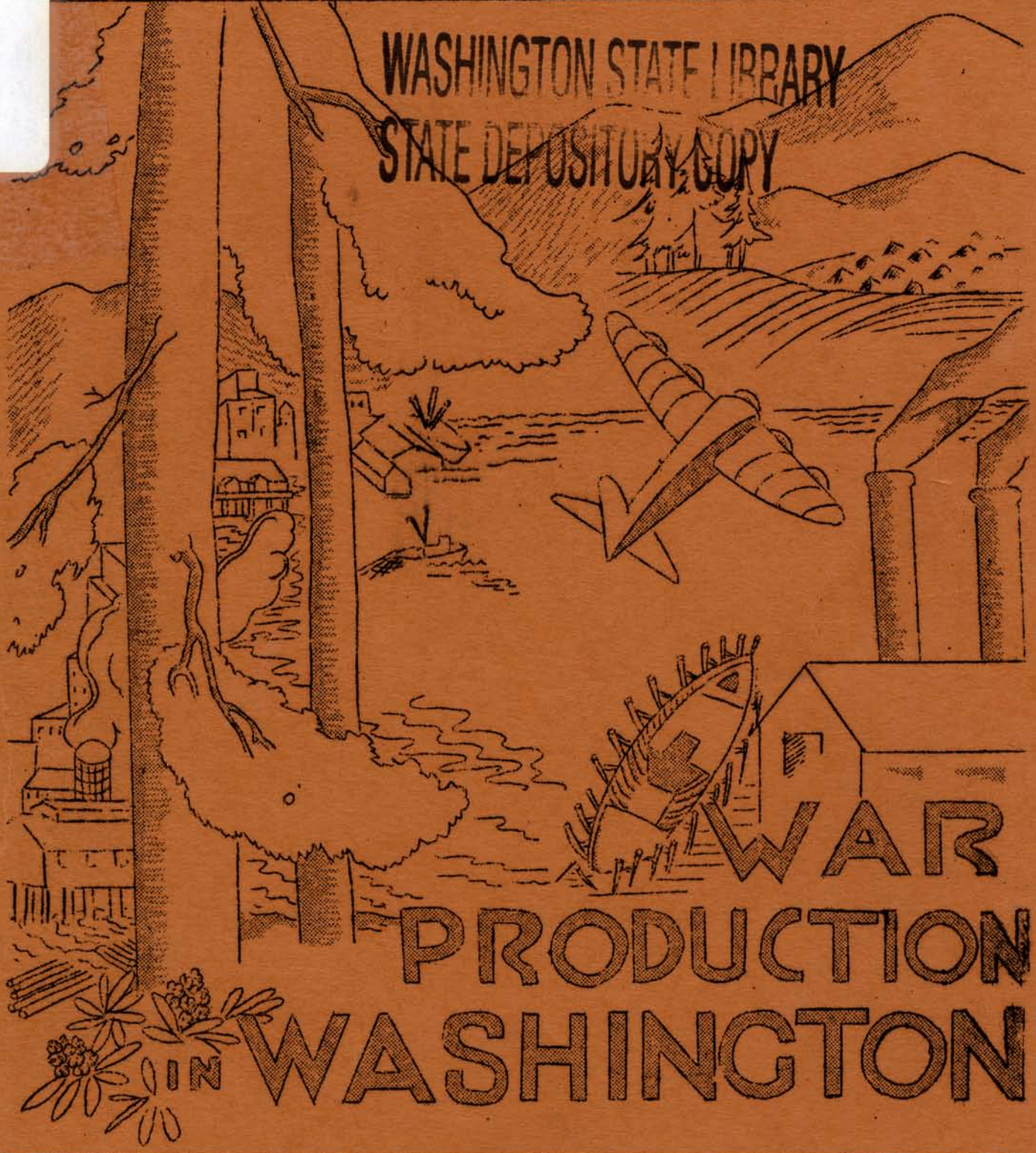


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WAR
PRODUCTION
IN WASHINGTON

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BELLE REEVES
Secretary of State



WAR PRODUCTION IN WASHINGTON

JANUARY - 1943

No State has been more profoundly affected economically by the expansion of war industries than Washington. By the middle of 1941 migration of war workers was already at full tide and the relation of prime military contracts in the Puget Sound Area to the value of manufacturing products in 1939 was relatively five times greater than for the country as a whole. This relationship of war work to normal activity has been about twice as great as for Los Angeles and four times greater than for San Francisco.

While the Seattle-Tacoma-Bremerton area as a whole has received a tremendous impact from war contracts, the city of Seattle, particularly, has become one of the great war production centers of the nation. In August 1942, it was revealed by the statistics division of the War Production Board that more than \$1,000,000,000 in contracts had been awarded to Seattle's aircraft industry up to July 1, 1942 and \$708,866,000 had been awarded for shipbuilding. The State now ranks eighth in airplane manufacturing. Seattle is among the first three American cities in war contracts per capita and the State is one of the first two of the nation in war contracts per capita. The total of these contracts amounts to more than \$2,000 for every person in the Puget Sound region at the time of the 1940 census.

These figures are so large that the extent of the expansion may be more readily grasped by pointing out that the total value of all Washington's manufacturing industries in 1939 (including all lumber products) amounted to only \$636,649,809, or less than the amount awarded to shipbuilding by the middle of 1942. The amount of war contracts for airplanes and ships alone in the past three years has been three times the total of all manufacturing in Washington in 1939.

The immensity of the shift to war industry is further emphasized by comparison with pre-war shipbuilding. In 1939 this particular industry had shrunk from its World War I expansion

to a value of less than \$6,500,000. The present value of contracts for approximately 200 vessels of all kinds in the 16 private and one government plant in the Puget Sound Area is over \$700,000,000 and represents an increase of more than 100 times the figure for shipbuilding.

Since contracts for military planes now exceed one billion dollars, these orders, placed in the past three years, are nearly double in value the total of all Washington's manufactured products in 1939. Floor space of Seattle airplane plants had been increased from 800,000 square feet to 2,400,000 by the first of 1942 and has since been increased another 1,700,000 square feet. The Boeing Aircraft company employed about 7,500 persons in 1940. The Seattle plant now has over 22,000 workers and the new Renton plant about 10,000. Even with this greatly expanded plant capacity it will take several years to fill these orders for planes.

Such tremendous industrial expansion could not, of course, occur without a population change of major proportions. In 1940 King county had a population of 504,980. Two years later the county was conservatively estimated, on the basis of careful surveys by a number of responsible agencies, to have at least 100,000 more persons. The Seattle-Tacoma-Bremerton area had a population of approximately 750,000 in 1940. By the end of 1943 this section of the State will have from 950,000 to 1,000,000 persons. By the middle of 1942, Kitsap county had increased 90% in population, King 20%, Mason 28%, and Pierce 10%. From 1930 to 1940 the population of the State increased 11%. In the two year period from 1940 to 1942 it had increased that much again.

In 1940 the Puget Sound area had somewhat less than half the population of the State; in 1942 it had nearly half; by the end of 1943 it will have not less than half if present trends continue and the area should total 1,000,000 persons. The State as a whole will at the

same time have increased from 1,736,191 in 1940 to over 2,000,000 by 1944.

The other area of principal population gain in the State is in the Vancouver region. In the two year period 1940-1942, Clark County increased at the phenomenal rate of over 40% and adjoining Cowlitz County increased over 11%. Shipbuilding and aluminum production are responsible for this increase.

No less spectacular than the rise in shipbuilding and aircraft production has been that of aluminum, which has occurred outside the Puget Sound Area, although the northwest's fifth aluminum reduction plant has recently begun operation in Tacoma. Bonneville and Grand Coulee power have brought Washington a brand-new industry in the production of aluminum. From a production of zero at the beginning of 1940, the State of Washington now produces one-third of all the aluminum refined in the United States. This production, with the exception of the new Tacoma plant, is centered in the Longview-Vancouver and the Spokane areas.

The immense amounts of low-cost power made available by Bonneville and Grand Coulee have been responsible for the State's new position in the field of aluminum manufacture although the ore must be shipped in from great distances. After the war, however, large-scale processes will undoubtedly be developed which will make it possible to utilize Washington's ample resources of low-grade aluminum-bearing clays, thus stabilizing the industry here for successful competition during peacetime. The Washington State Planning Council and the Engineering Experiment Stations of the University of Washington and the State College have been working on this problem for some years.

Due to the unprecedented demand for metals caused by the war, Washington has very materially increased its production of all strategic minerals, including lead, zinc, copper, tungsten and others. From the standpoint of war production it is unfortunate that as yet no process has been developed on a commercial scale to utilize the State's practically inexhaustible deposits of magnesite in eastern Washington and magnesium silicate in

the Puget Sound area. Magnesium production is one of the critical war necessities.

Not the least of Washington's important contributions to the war effort is in the production of lumber products. In peacetime lumbering was the State's most important industry and one third of our people were dependent directly or indirectly upon lumber for their living. Lumber in all its branches has now gone to war and many billions of board feet are being used in the many ways that this versatile product is essential, from barracks to mine-sweepers.

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More spectacular in some respects than the traditional uses of lumber in production for war, has been the continued development and expansion of specialized lumber products which have enabled us to substitute for critically scarce materials such as metals. Plywood was already coming into its own during peacetime. It is now finding a multitude of uses in war manufacture, from training planes to barges. The technical knowledge for the processing of wood has received much added impetus from the war, such as in the development of water-proof plywood, the manufacture of an infinite variety of plastics with as many different uses, the manufacture of cork from fir bark, the extraction of tannic acid from hemlock bark and the processing of a practically fire-proof wood for use in construction where lumber was not formerly practicable.

Washington is a great agricultural State. No less important than any other phase of production for war is food. Preliminary figures indicate that both in quantity of production and dollar value the State will establish an all-time high record in the harvest of 1942. This increased production has only been achieved in the face of many very real obstacles, the most critical of which have been a labor shortage and the difficulty of getting necessary farm machinery and repairs. In 1941, Washington produced approximately \$250,000,000 worth of agricultural products.

Fully as important as growing these victory crops is the solving of the grave problem of getting the food in the required quantities to the proper places at the proper time. In order to preserve these tremendous stocks

have been undergoing a tremendous expansion. Dehydration of fruits, vegetables, milk and eggs has been increasing as war demands have been stepped up and the state has dehydrated its share of the 100,000,000 pounds of fruit and vegetables processed in 1942. This figure is to be raised four times in 1943. So far this year eggs in the United States are being dehydrated at the rate of about 250,000,000 pounds, but the requirement for powdered eggs is estimated at 400,000,000. At the present time the country is producing at the rate of about 450,000,000 pounds of powdered milk and the State will make every possible effort to raise its quota to meet the Government's need of more than 500,000,000 pounds from the entire country during 1943.

In the production of food for war, Washington's great fishing industry has also made an important contribution. It is not generally known that this State is one of the leading producers of seafoods. In addition to the large annual salmon catch, Seattle has long been the world's chief halibut port. The needs of the armed forces for canned salmon and other seafoods are such that the Army and Navy are now taking virtually all of the canned salmon of both Washington and Alaska. The products of Alaska fisheries, of course, pass almost exclusively through Washington ports. The past year has been especially favorable for meeting the requirements of the war since some of the largest salmon runs in history provided record breaking catches in a number of fishing areas.

The demands of war have served to point up the wisdom of such conservation measures for the preservation of Washington's resources as are now in force and to emphasize the absolute necessity for a continuing conservation program. Fisheries, like forests, are a renewable resource. A significant example is the fact that one of the largest salmon runs in the Columbia in 1942 was the direct result of the installation of proper temporary fish ladders during the construction of Bonneville dam. Last year's run completed the cycle which was provided for at that time.

The country's construction industry handled the greatest volume of work in its history in 1942, about \$14,000,000,000 worth.

In 1942, construction totals were down somewhat from the Pacific Northwest's 1941 high of approximately \$100,000,000. This is accounted for, in the State of Washington, by the fact that the aircraft, shipbuilding and aluminum plants had largely been converted and expanded for war production by the end of 1941. In Washington, as in the country as a whole, 1943 construction will fall off about 50 per cent. Seattle's total of over \$28,000,000 in building permits in 1941 was the highest since the pre-depression building boom of the 1920-1930 decade. The City's 1942 total decreased to \$19,062,040, still a very high figure considering the cessation of private building and the number of defense projects which had previously been completed.

The influx of workers to the defense industries of Puget Sound and the Vancouver area necessitated an enormous housing program which is still expanding at a considerable rate. The cities of Seattle, Renton, Bremerton, Tacoma and Vancouver each have housing projects numbering from several hundred to several thousand each. Vancouver's McLaughlin Heights had a population of over 12,000 in January, 1943. In two years the population of Bremerton doubled from 15,000 to 30,000. Renton has more than tripled its population from 5,000. These are the most impressive gains, but war activities in eastern Washington, particularly in Spokane, Pasco, Yakima, Walla Walla and Ephrata have also necessitated many large construction projects.

Population movement into and out of eastern Washington as a whole has operated to preserve a balance and the 1940 census figures have remained substantially unchanged. The most serious effect of the population's war-time changes on the eastern part of the State has been the very severe shortage of migratory labor for the harvest of the district's important field and fruit crops. Largely as the result of heroic efforts by the local populations these crops were harvested without serious loss in 1942. This year strenuous efforts by State and Federal agencies will be required to avert a catastrophe in Washington's production of food for war.

In one very important field of war pro-

duction, synthetic rubber, Washington is not, in common with other sections of the country, making the contribution that it well might. Eastern Washington is one of the great grain-production areas of the Nation and Grand Coulee Dam is the greatest single power-development in the world. Had the grain-alcohol process for synthetic rubber been adopted, eastern Washington is one of the most logical places in the United States for the manufacture of this product.

It is entirely possible that the post-war period may find this country on the threshold of complete independence of world production of natural rubber. This possibility, with the expectation of further progress in the low-cost mass production of the synthetic product, opens up a vast opportunity for the further economic development of Washington's strategically located resources.

The table on the following page will serve to indicate how very general the business upswing has been throughout the State since the beginning of the defense program in this area. Virtually all phases of business continued to expand during 1942 with the exception of automotive sales and services. Retail sales reached the highest level in the history of the Puget Sound area and public utilities sales and postal receipts showed very marked increases.

Postal receipts particularly, which are affected by change in population, as well as in business activity, gave added evidence in 1941 and 1942 of the almost universal up-trend in the business cycle throughout the State. Telephones in service, as reported by

the Pacific Telephone and Telegraph Company on November 30, 1941, showed an increase for Washington of 11% over the same date in 1940, Bremerton leading with an increase of over 30%.

During 1943, restriction and curtailment of business lines engaged in the ordinary production of consumers goods and services will become apparent in general business indexes. Employment as a whole should, however, continue to increase on account of further expansion of war industry and further conversion of other plants to war production. Salmon canning will encounter increasing difficulties due to the war, such as protection of fishing fleets, procurement of time and necessary materials, and the securing of essential labor.

Electric power sales should continue to increase and Washington's power pool may, fortunately, be expected to meet all the demands that the war will make upon it. The importance of an increased coal production for 1943 is clearly indicated by the gas and coal shortage which has developed in the Seattle-Tacoma area. Ample resources of coal are available. A further increase in metallic mineral production is also of utmost importance and measures will have to be taken to insure the channeling of an adequate labor supply to such production and also to maintain lumber production at not less than its present output.

The year 1943 will be another period of tremendous productivity in the successful prosecution of the war. Many serious problems in industry and agriculture will be encountered and solved, and the people of this State will meet the challenges with the same resourcefulness that they have shown in the past.

CHANGES IN BUSINESS ACTIVITY
THE PUGET SOUND AREA AND WASHINGTON
1941 compared with 1940 and with 1939

Series	Number of Months	Percentage Change 1941 from 1940	Percentage Change 1941 from 1939
PRODUCTION			
Electric Power Sales - Seattle City Light ¹	10	39.3	20.0
Electric Power Sales - Puget Sound P.&L. ¹	12	14.3	23.8
Electric Power Sales - Tacoma Municipal ¹	12	22.0	47.2
Lumber Production, West Coast - Wash. & Ore.	11	22.9	35.7
Coal Production - Washington	10	16.4	9.8
Employment in Factories - Washington ²	Nov.	28.0	35.0
Payrolls in Factories - Washington ²	Nov.	58.0	69.0
Fish Landed at Seattle, Pounds ³	11	18.7	. . .
TRADING			
New Car Registrations - Puget Sound Area ⁴	11	44.3	97.5
New Car Registrations - Washington	11	36.5	82.6
Gasoline Sales - Washington	11	11.7	21.0
Newspaper Advertising - Seattle	11	7.0	12.4
SHIPPING and TRANSPORTATION			
Carloading, all kinds - Pac. Advisory Board Area ⁵	12	15.7	21.2
Imports, Value - Wash. Customs District ⁶	8	43.2	78.5
Exports, Value - Wash. Customs District	9	-27.2	-15.5
Egg Carlot Shipments - Washington	11	-51.8	-54.3
Wheat Carlot Receipts - Seattle & Tacoma	12	7.6	-4.0
Flour Carlot Receipts - Seattle & Tacoma	12	4.0	4.1
FINANCIAL			
Bank Debits - Seattle	12	36.2	55.7
Bank Debits - Tacoma	12	38.8	57.5
Bank Debits - Bellingham	12	26.4	49.6
Bank Debits - Everett	12	24.9	35.5
Bank Debits - 4 Cities combined	12	35.9	55.1
Bank Deposits, Total - Seattle	Dec. 31	18.1	38.9
Bank Deposits, Demand - Seattle	Dec. 31	26.3	58.4
Life Insurance Sales, ordinary - Washington	11	20.4	24.3
Real Estate Foreclosures - King County	12	-46.9	-68.3
REAL ESTATE and BUILDING			
Building permits, Numbers 11 cities	11	24.1	42.3
Building Permits, Value - 11 Cities	11	109.0	155.2
Construction Value - Washington ⁷	Nov.	46.0	156.0
Real Estate Transactions, Numbers 9 P.S. Counties	12	20.8	35.0
Real Estate Mortgages, Value - King County	12	8.5	52.7
COMMUNICATION			
Postal Receipts - 15 P. S. Area Cities	11	13.6	21.3
Telephones in Service - Puget Sound Area ⁸	Nov. 30	12.3	20.4
Telephones in Service - Washington	Nov. 30	11.0	18.2
Street Transit passengers - Seattle	12	15.6	29.7

¹ Sales to consumers exclusive of inter-utility sales.

² Excludes fish, vegetable and fruit canning. Compiled by Federal Reserve Bank of San Francisco. 1923-25 average equals 100 per cent.

³ Includes Halibut fleet, receipts by Seattle Wholesalers, imports from Canada, and receipts from coastwise vessels and Alaska. Data not readily obtainable for 1939.

⁴ Includes 15 counties out of 19 on west side of Cascades; excludes Clark, Cowlitz, Skamania and Wahkiakum.

⁵ Includes all of Washington, most of Oregon, ten northern counties of Idaho, and western section of Montana.

⁶ Imports entered for consumption, that is, payment of duties or immediate use.

⁷ Compiled by Federal Reserve Bank of San Francisco. 1923-25 average equals 100 per cent.

⁸ Pacific Telephone and Telegraph Co.

Population by CountiesWASHINGTON

County	Population			Percent increase	
	4-1-30 ^{1/}	4-1-40 ^{1/}	5-1-42 ^{2/}	1930-40	1940-42
Adams	7,719	6,209	5,726	-19.6	-7.8
Asotin	8,136	8,365	8,522	2.8	1.9
Benton	10,952	12,053	13,267	10.1	10.1
Chelan	34,634	34,412	36,722	8.8	6.7
Clallam	20,449	21,848	23,185	6.8	6.1
Clark	40,316	49,852	70,033	23.7	40.5
Columbia	5,325	5,549	5,464	4.2	-1.5
Cowlitz	34,906	40,155	44,809	25.9	11.6
Douglas	7,561	8,651	5,372	14.4	-37.9
Ferry	4,292	4,701	4,479	9.5	-4.7
Franklin	6,137	6,307	7,942	2.8	25.4
Garfield	3,662	3,383	3,449	-7.6	2.0
Grant	5,666	14,668	10,243	158.9	-30.2
Grays Harbor	59,982	53,166	52,150	-11.4	-1.9
Island	5,369	6,098	5,887	13.6	-3.5
Jefferson	8,346	8,918	9,069	6.9	1.7
King	63,517	504,980	605,262	8.9	19.9
Kitsap	30,776	44,387	83,959	44.2	89.2
Kittitas	18,154	20,230	19,698	11.4	-2.6
Klickitat	9,825	11,357	11,100	15.6	-2.3
Lewis	40,034	41,393	42,221	3.4	2.0
Lincoln	11,876	11,361	11,911	-4.3	4.8
Mason	10,060	11,603	14,935	15.3	28.7
Okanogan	18,519	24,546	20,711	32.5	-15.6
Pacific	14,970	15,928	14,533	6.4	-8.8
Pend Oreille	7,155	7,156	6,485	0	-9.4
Pierce	163,842	182,081	196,592	11.1	8.0
San Juan	3,097	3,157	2,889	1.9	-8.5
Skagit	35,142	37,650	37,399	7.1	-0.7
Skamania	2,891	4,633	4,411	60.3	-4.8
Snohomish	78,861	88,754	94,685	12.5	6.7
Spokane	150,477	164,652	168,590	9.4	2.4
Stevens	18,550	19,275	17,375	3.9	-9.9
Thurston	31,351	37,285	39,559	18.9	6.1
Wahkiakum	3,862	4,286	3,760	11.0	-12.3
Walla Walla	28,441	30,547	32,199	7.4	5.4
Whatcom	59,128	60,355	60,380	2.1	0
Whitman	28,014	27,221	29,341	-2.8	7.8
Yakima	77,402	99,019	99,035	27.9	0
State	1,563,396	1,736,191	1,923,319	11.1	10.8

^{1/} United States Census^{2/} Calculated from statistics on registration for sugar rationing on the assumption that 91 percent of the population registered.

These figures are believed to be reasonably accurate and indicative of trends, but it is suggested that they be used with caution.

BRITISH COLUMBIA



INDUSTRIAL MAP OF THE STATE OF WASHINGTON

BELLE REEVES - SECRETARY OF STATE