

ILLUSTRATIVE

PROJECTIONS

CRAG Planning Area

1970 - 2000

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Columbia Region Association of Governments

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1973

This report contains a series of three projections covering population, households, enrollment, and employment. The projections are termed illustrative in that they show what the CRAG-area population and economy may look like in 1980 and 2000 if birth rates continue to decline and economic growth slows (the low series) or if birth rates pick up and high levels of economic activity are sustained throughout the projection period (the high series). The medium series is about midway between the two extremes.

None of the three series contained in this report can be termed a "business as usual" projection because long term growth rates were not simply extrapolated out for thirty years. On the contrary, the effects of the projected birth rates on age structure and the resulting number of households and employable persons in the resident population were taken into account in projecting economic growth (i.e. new jobs). Migration was projected as a residual function of employment. Of the three projections (high, low, and medium) the medium comes the closest in similarity to long term population and economic growth rates.

I. INTRODUCTION

A. GEOGRAPHIC COVERAGE

1. CRAG Planning Area

The CRAG Planning Area covers four Oregon State counties and Clark county in the State of Washington. The Oregon counties in the CRAG Planning Area are: Multnomah, Clackamas, Washington, and Columbia. The four Oregon counties coincide with Oregon's Administrative District #2.

2. Portland-Vancouver Metropolitan Area

The Portland-Vancouver Metropolitan Area, or SMSA,¹ is composed of all but one of the counties in the CRAG Planning Area. The county which is not part of the Metropolitan Area is Columbia County, Oregon.

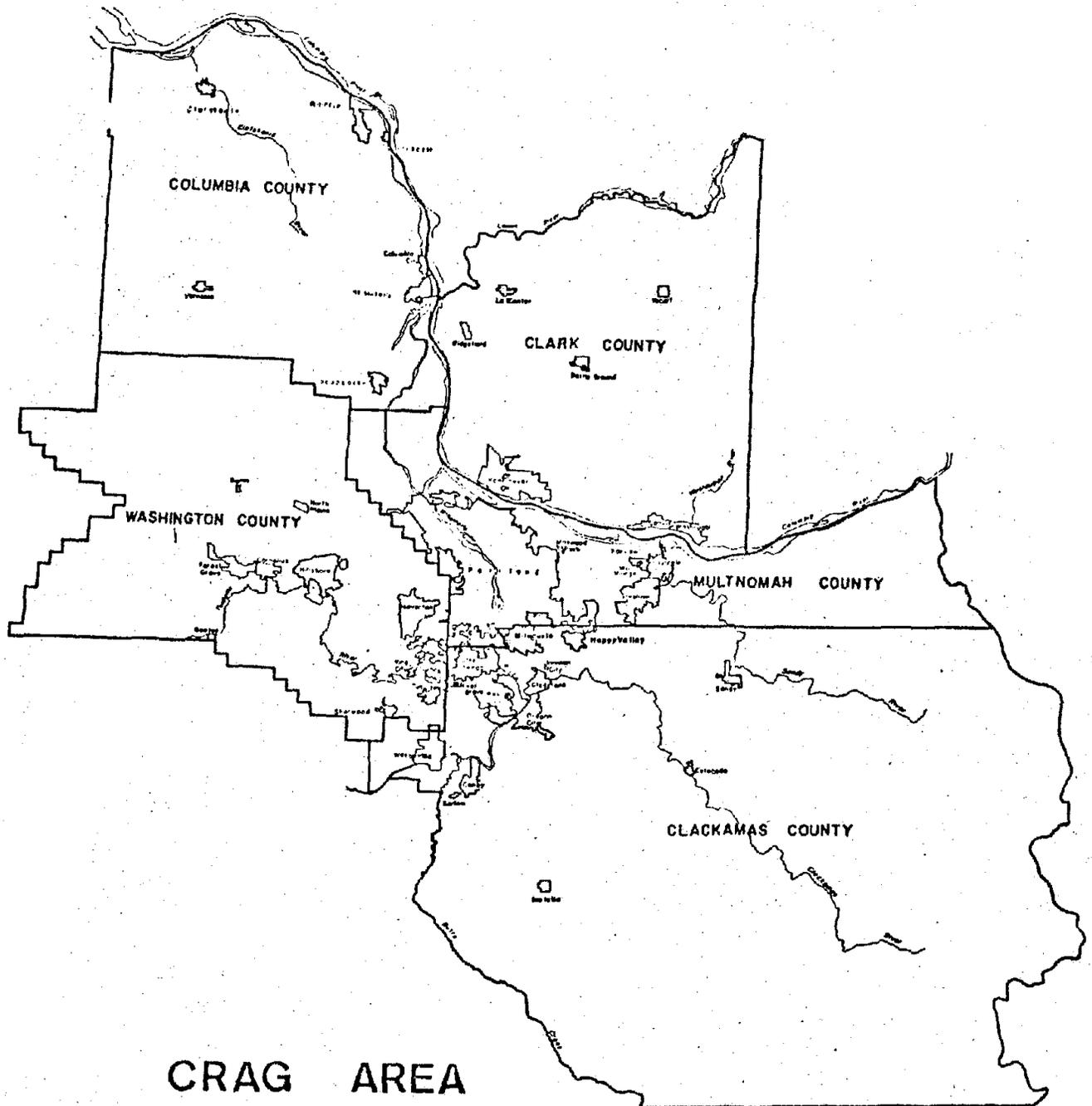
SMSA's are designated by the Bureau of the Budget. In general, they consist of a large city (50,000 or more inhabitants) and its surrounding counties.

3. Map

The CRAG Planning Area and the Portland-Vancouver SMSA are shown in Figure I.

¹ Standard Statistical Metropolitan Area

GREATER PORTLAND-VANCOUVER METROPOLITAN AREA



The Planning Area of the Columbia Region Association of Governments is comprised of the Portland-Vancouver Standard Metropolitan Statistical Area (SMSA) and Columbia County.

The SMSA covers Multnomah, Clackamas, and Washington Counties in the State of Oregon and Clark County in the State of Washington.

For ease of presentation throughout this report, the Planning Area of the Columbia Region Association of Governments is designated simply "The CRAG Area" or the "CRAG Planning Area," and the Portland-Vancouver Standard Metropolitan Statistical Area, as the Portland-Vancouver SMSA. The CRAG Area is also referred to as the Greater Portland-Vancouver Metropolitan Area.

ILLUSTRATIVE EMPLOYMENT PROJECTIONS, WITH DETAILED MANUFACTURING SECTOR, SMSA

Percentage Distribution

Average Annual Growth Rate

	Percentage Distribution								Average Annual Growth Rate						
	1950	1960	1970	1975 State	1980 BPA	1990 low	CRAG med.	high	1950 1960	1960 1970	1970-1978 State	1970-1980 BPA	1970-80 Low	Med.	AC HI
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	1.38	2.95	2.33	2.62	1.95	2.48	2.4
Agriculture	6.37	5.19	2.69	1.51	1.71	1.61	1.32	1.02	-0.68	-3.59	-4.74	1.95	-3.11	-4.56	-6.5
Self-Employed	13.66	13.50	10.59	9.84	10.36	10.29	9.1	8.33	1.26	0.51	1.33	2.39	1.66	0.93	0.5
Wage-Salary	79.96	81.30	86.72	88.65	88.10	89.58	90.65	90.65	1.54	3.65	2.62	—	2.11	2.80	3.4
Manufacturing	19.96	19.68	19.53	18.71	18.12	18.38	19.46	20.27	1.23	2.90	1.81	1.86	1.34	2.44	3.3
Durable Goods	10.47	10.82	12.51	12.58	—	12.54	13.67	14.55	1.70	4.49	2.43	—	2.03	3.41	4.5
Lumber & Wood	3.99	2.63	2.01	1.82	—	1.50	1.71	1.32	-2.78	0.23	1.09	—	-0.24	0.99	1.1
Furniture & Fixtures	0.58	0.58	0.68	0.62	—	0.62	0.73	.77	-2.71	4.67	2.08	—	2.03	4.27	4.5
Primary Metals	*	1.59	1.50	1.32	—	1.35	1.34	1.38	*	2.41	0.74	—	1.03	1.44	2.1
Fabricated Metals	*	1.37	1.50	1.55	—	1.50	1.52	1.58	*	3.90	2.75	—	1.64	2.26	3.1
Machinery (Except Elec.)	1.12	1.31	1.80	1.74	—	1.88	2.05	2.13	*	6.27	1.92	—	2.39	3.83	4.7
Electrical Machinery	*	1.31	2.28	2.37	—	2.53	2.85	3.13	*	8.81	2.83	—	3.05	4.81	6.4
Transportation Equip.	0.49	0.92	1.57	1.74	—	1.88	2.05	2.21	7.92	8.69	3.48	—	3.78	5.24	6.1
Other Durable Goods	*	1.10	1.31	1.42	—	1.37	1.41	1.45	*	3.75	4.68	—	3.25	4.07	4.8
Non-Durable Goods	9.49	8.86	7.02	6.15	—	5.75	5.80	5.92	0.68	0.60	0.67	—	-0.10	0.51	1.33
Food & Kindred Products	3.61	3.09	2.35	1.95	—	1.88	1.86	1.34	-0.20	0.20	0.00	—	-0.30	0.10	0.2
Textile Mill Products	*	0.79	0.52	0.51	—	0.38	0.41	.46	*	-1.22	2.02	—	-2.21	0.83	.75
Apparel	*	0.95	0.77	0.74	—	0.64	0.64	.68	*	0.93	1.73	—	0.30	0.37	1.9
Paper & Allied Products	2.21	2.26	1.73	1.46	—	1.41	1.39	1.41	1.62	0.27	0.16	—	0.13	0.26	0.3
Printing & Publishing	1.30	1.04	0.91	0.81	—	0.75	0.77	.80	-0.84	1.64	0.91	—	0.00	0.73	1.6
Other Non-Durables	0.63	0.73	0.73	0.68	—	0.69	0.73	.73	2.92	2.92	1.48	—	1.46	2.51	3.0
Contact Construction	4.83	4.52	3.94	4.07	3.52	3.83	3.93	3.88	0.70	1.57	2.61	1.46	1.66	2.43	2.8
Eq ¹	10.65	8.40	6.88	6.15	5.77	5.91	5.80	5.70	-1.00	0.94	0.88	.83	0.42	0.74	1.0
Wholesale & Retail Trade	20.18	20.41	21.10	22.33	21.44	21.22	21.05	21.29	1.49	3.32	3.06	2.79	2.01	2.45	3.0
RE ²	3.99	4.55	5.63	6.05	5.65	6.01	5.98	5.95	2.71	5.18	3.24	2.66	2.62	3.09	3.5
Services	10.44	11.55	15.42	17.03	17.43	17.52	18.20	18.28	2.41	6.00	3.58	3.88	3.26	4.18	4.7
Government	9.91	12.19	14.22	14.30	15.92	15.23	15.17	15.30	3.49	4.57	2.51	3.79	2.66	3.14	3.7

* Data not available for 1950.

¹ Transportation, communication and public utilities

² Finance, insurance and real estate

SOURCE: See previous table.

B. PROJECTION COVERAGE

1. Decades

The projections contained herein cover the period from 1970 to 2000. Projections are given for the years 1980 and 2000.

Projections for 1990 were not made. They can be approximated by fitting a log-linear line to the data for 1970, 1980, and 2000.

2. Area

Projections are given for the CRAG Planning Area as a whole, for the SMSA, and for component counties.

3. Socio-economic Coverage

Projections are given for the following socio-economic characteristics: population, enrollment, (elementary school, high school, and college), households, and employment (by 1 digit SIC¹ for the CRAG Area and component counties, and by 1 and 2 digit² SIC for the SMSA).

4. High, Low and Medium

High, low, and medium projections are given for each socio-economic characteristic described above.

¹ Standard Industrial Classification System.

² Two digit projections are given for the manufacturing sector only.

C. PROJECTIONS MADE BY OTHERS

1. Projections Made by Other Agencies

For comparative purposes, projections made by other agencies have been included in this report. The projections included and their coverage are shown in Table 1, on page 6.

2. CRAG's Comprehensive Plan - Design Projections

CRAG is currently developing a Comprehensive Plan, scheduled for completion in the 1974-5 work program year. It is designed around a population of 2,000,000 people and adopted policies¹ covering controlled regional growth and the preservation of farm land and the environmental amenities which contribute so significantly to the quality of life in this region.

The design figure - 2,000,000 people - has been allocated to counties within the CRAG Area in three comprehensive sketch plans based on three "planned" development alternatives for the region. The alternatives are concentrated economic activity and residential development (the Concentration Plan), dispersed economic activity and housing (the Dispersion Plan) and a compromise between the two (the Radial Corridors Plan).

The 2,000,000 population design figure for the CRAG region is a "given", or control total, not only in the present sketch planning process but also for the final plan. To assure compatibility between CRAG's final plan and plans drawn up by other agencies for

¹ These policies are spelled out in Planning in the CRAG Region: An Appraisal and New Direction, CRAG, 1972.

the CRAG region, CRAG is interested in promulgating the use of its 2,000,000 design figure in federal, state and local plans drawn up for this region.

While final design population figures have not yet been chosen for individual counties, within the CRAG region, it is likely that they will be within the range existant in the three sketch plans. For this reason, the sketch plan design totals for individual counties are included in this report. Plans developed using the sketch-planning figures for individual counties are likely to be more compatible with CRAG's final Comprehensive Plan than those plans based on economic projections alone.

T A B L E I

PROJECTIONS PREPARED BY OTHERS

SERIES	SOCIO-ECONOMIC COVERAGE	PERIOD COVERED	YEARS GIVEN	GEOGRAPHIC COVERAGE	YEAR PREPARED
NPA	Population, Employment by SIC	1970-1980	1975, 1980	SMSA	1971
BPA	Population, Households, Employment by SIC	1970-1990	1975, 1980; 1985, 1990	CRAG Planning Area by County	1973
State of Washington	Population	1970-2000	1975, 1980, 1985, 1990, 1995, 2000	Clark County	1972
State of Oregon	Population, Households	1970-2000	1975, 1980, 1985, 1990, 1995, 2000	Oregon State portion of CRAG Planning Area by County	1973
	Employment by SIC	1970-1978	1973, 1974, 1978	SMSA	1973
Bell	Population, Households	1970-1985	1975, 1980, 1985	CRAG Planning Area by County	1972
EPA-HUD	Population, Employment	1970-2020	1975, 1980, 1985, 1990, 2000, 2020	SMSA	1972
OBERS	Population, Employment	1970-2020	1980, 1990, 2000, 2010, 2020	Economic Area 157 18 counties in Northwestern Oregon and 5 counties in Southwestern Washington	

Sources: NPA - "Metropolitan Area Growth Patterns for the Coming Decade," National Planning Association, 1971.

BPA - Population, Employment and Housing Units Projected to 1990; Bonneville Power Administration, Branch of Power Requirements, Portland, Oregon, 1973.

State of Washington - Interim Population Projections To the Year 2000, by County, State of Washington, Office of Program Management and Fiscal Planning, 1972.

State of Oregon - Population Projections, 1975-2000, Oregon Counties, Oregon State Center for Population Research, Portland State University, 1973; and Annual Manpower Planning Report, Feb. 1973, For the Portland Area, State of Oregon, Employment Division, Dept. of Human Resources, 1973.

Bell - Population and Household Trends in Washington, Oregon, and Northern Idaho, 1970-1985, Pacific Northwest Bell Telephone Co., Business Research Division, 1972.

EPA-HUD - Population and Economic Activity in the U.S. and Standard Metropolitan Statistical Areas, Historical and Projected, 1950-2020, Prepared for the U.S. Environmental Protection Agency and HUD, by U.S. Dept. of Commerce, Social and Economic Statistics Administration, 1972.

OBERS - Economic Activity in the U.S. by Water Resource Regions and Sub Areas, 1929-2020, prepared for the U.S. Water Resources Council by the Office of Business Economics of the U.S. Dept. of Commerce and the Economic Research Service of the U.S. Dept. of Agriculture, 1973.

II. ASSUMPTIONS

Governmental Action

1. It was assumed that government at all levels would refrain from radical policies regarding population and employment location. Although governmental policies may change, assumptions about their implications could not be made because:
 - a. None of the policies currently proposed and discussed have resulted in a clear delineation of likely implementation procedures - eg. it is one thing to have a policy to limit population, but how it is to be effected and when is another thing.

In other words, until debated and/or proposed policies are translated into regulation or other governmental specifics, they cannot be accounted for in a meaningful way in the projection process.
 - b. Some of the proposed policies are of questioned constitutionality.
2. Existing regulations pertaining to land-use and pollution control were assumed to be in effect and enforced on a national and local basis through the projection period.
3. Current federal actions related to the maintenance of economic stability, full employment and world peace were assumed to continue, i.e. it was assumed that there would be no major economic depressions or world wars over the next 30 years.

B. Energy Crisis

Time and staffing precluded a thorough-going assessment of the energy crisis. Thus, the projections contain the implicit assumption that energy would be available over the projection period.

Problems related to incorporating the energy crisis into the projection process are centered about uncertainties concerning its severity and longevity due to:

1. differences in estimates by "experts";
2. possibilities of more efficient use of existing sources;
3. potential discoveries of new reserves; and
4. technological advances permitting utilization of alternative sources.

C. General Demographic

It was assumed in all three series:

1. That household size would continue its downward trend, but less precipitously than in the past 2-3 decades.
2. Median years of school completed would continue to increase, due primarily to higher proportions of persons with one or more years of college (especially at the Community College level).
3. Female labor force participation rates would continue to increase.
4. The fertility characteristics of migrants would be similar to those of the resident population.

D. Fertility and Migration

In the low series birth rates were projected to continue to fall through 1975 (averaging 15.5¹ for the 1970-75 period) then to rise slightly, levelling off at an average of 16.0 through 2000.

¹ Births per thousand population.

In the medium projections, it was assumed that birth rates would average 16.0 between 1970 and 1980; 16.5 between 1980 and 1990; and 17.0 from 1990 to 2000.

In the high series, assumed birth rates were: 16.0, 1970-75; 17.0 1975-80; 17.5, 1980-90; and 18.0, 1990-2000.

With reference to migration in all three series, the following general assumptions were made:

1. It would be impossible to stop migration to the CRAG area, since preventative measures are likely to be unconstitutional;
2. Given experience in other areas, comparable to CRAG's in population-size and economic characteristics,¹ it is likely that the CRAG area will continue to attract migrants.
3. Given the general westward movement migration flows, the CRAG area will continue to draw people from outside the area at least through 2000. The Census Bureau has postulated that migration flows between economic areas will tend to level off sometime after 2000 as economic disparities between regions diminish.

In all three series, migration was calculated as a function of the resident population and the number of job opportunities.

1

These economic characteristics put the CRAG area in the nodal-center type of metropolitan area. Other types are manufacturing, government, and recreation-tourist centers. A nodal center tends to be more diversified than the others having a fairly even distribution of employment types, with some emphasis on the trade and shipping sectors.

III. METHODOLOGY

A. EMPLOYMENT PROJECTIONS¹

1. 1980 - CRAG Region

These were derived on a sector by sector basis. Several standard procedures were used yielding a range of projections for each sector.

The high projection series for 1980 assumes a rapidly growing economy. That is, it assumes that employment will grow faster in the 1970-80 decade than it did in the 1960-70 one. The low projections are based on an analyses of cyclical and secular fluctuations and assume a fairly slow growing economy. The medium projections were generally based on shift and share analysis. This means they were tied to national projections most of which show employment in the current decade growing somewhat less rapidly than in than in the last one.

All three series were tested for reasonableness using linear and log-linear extrapolations of past trends (over the past ten and twenty years), basic-nonbasic multipliers, and employment-to-population ratios (for the residentiary industries).

Individual sectors were summed to yeild CRAG Area totals.

¹ Only civilian employment was projected. Unless otherwise stated, whenever the word "employment" is use in this text or its table, it refers to civilian employment.

2. Year 2000, CRAG Region

Year 2000 projections for the CRAG Area were done somewhat differently than those for 1980. Instead of projecting individual sectors and summing these to derive CRAG Area totals, as was done for the 1980 series, in the 2000 series totals for the CRAG Area were projected first and individual sectors, second.

CRAG Area totals were projected as a proportion of projected national employment,¹ on the basis of the historical relationship between the national and regional economy as measured by employment size. This relationship is shown in Table 2. The assumption was that regional projections 30 years into the future should be tied to national projections which, because of the size of the U.S. economy,² can be projected with somewhat more reliability than small economies with populations of 1-2 million persons.

Individual sectors for the CRAG Area were projected on the basis of their historical share of total CRAG Area employment and on the basis of recent and anticipated changes in that share. Also used were projected national sector shares of projected national employment. The resulting projections were tested for reasonableness in the same way as those for 1980 were.

¹ The national projection series used was that prepared by OBERS for 2000. See source notes, Table 1, page 6

² 200-300 million population.

T A B L E 2

COMPARISON - CRAG AREA AND
U.S. EMPLOYMENT

Year	CRAG Area as % of U.S. Employment
1950	0.48
1960	0.50
1970	0.56
2000 ¹	
Low	0.62
Medium	0.69
High	0.75

¹ Projected by CRAG

Source: National projections, OBERS, See Table 1, page 6.

3. Component Counties, 1980 and 2000

Employment projections for individual counties were derived on the basis of industrial and commercial investment between 1960 and 1971,¹ identification of growing, static and declining activity centers, transportation facilities and linkages, and historical and anticipated changes in each county's share of CRAG Area employment.

B. POPULATION

1. General

Natural increase² was projected in 5 year age cohorts using the survival rate technique. Total migration was projected as a function of employment, and allocated to 5 year age cohorts as a function of the age characteristics of migrants between 1955-60 and 1965-70. Projections for the CRAG Area were derived first.

2. County Population

Regression analyses, linear, and log-linear extrapolations of past county shares of total CRAG Area population were used to derive first approximations of projected county populations. The first approximations were adjusted to fit the CRAG Area totals³ on the basis of the age distribution within the county; household mobility between counties; size, age, and other characteristics of the housing inventory; accessibility to jobs, shopping, and schools; population and housing density, and other factors.

- 1 These were used to identify locational preferences of business and industry in an expansionary period.
- 2 Births minus deaths
- 3 Unadjusted, individual county populations when summed totalled more than the CRAG total area in all three first approximations.

These were projected for the CRAG Area as a whole using the historic and projected relationship in headship rates by age cohorts between the CRAG Area and the nation as a whole. Projected headship rates for the U.S., published by the U.S. Bureau of the Census¹ for 1967-1985 were extrapolated to 2000 based on Bureau of Census population projections for the nation to the year 2,000.²

Households were projected for individual counties in the CRAG Area on the basis of trends in their share of total households over time. Both linear and log-linear extrapolations of past shares were derived. The resulting projections were adjusted on the basis of the age structure of the population in 1960 and 1970, changes in household size between the two decades, the characteristics of the housing inventory, and new construction by housing type in recent years.

D. ENROLLMENT

Total 1980 enrollment for the CRAG Area was projected on the bases of relationships in past trends between the nation (1940-1970) and the SMSA (1960-1970) by age cohort.³ These in turn, were related to projections for the nation as a whole by age cohort.⁴ The resulting proportions were applied to projected 1980 CRAG Area population by cohort to yield 1980 total projected CRAG Area enrollment.

¹ Projections of the Number of Households and Families 1967-1985, current Population Reports Series P-25, No. 394, June 1968.

² Projections of the Population of the United States by Age and Sex: 1970-2000, Ibid, Series P-25, No. 470, Nov. 1971.

³ That is, on the basis of the relationships in the proportions enrolled in each age cohort in each area: SMSA and nation.

⁴ Population Estimates - Summary of Demographic Projections, Series p-25, No.388, U.S.Bureau of Census, March 1968.

Total enrollment for the year 2000 was projected in much the same way, except that there were no national projections of enrollment for the year 2000. Annual growth rates, 1960-80, for the SMSA and nation, by age cohort, were calculated, and the relationship between the two extrapolated asymptotically to 2000.¹ The resulting proportions were applied to projected 2000 CRAG Area population by cohort.

Disaggregation of CRAG Area totals to county projections by grade class for 1980 and 2000 were based on trends in each county's share of enrollment and in relationships between enrollment, households, and population.²

¹ Asymptotic growth rates level off over time- that is, they grow at a deaccelerated rate as opposed to exponential growth rates which continue up at an increasing rate.

² That is, relationships in persons enrolled per household, per hundred population, etc.

IV. EMPLOYMENT PROJECTIONS

A. CRAG AREA

1. CRAG's Illustrative Projections *

	<u>1980</u>	<u>2000</u>
Low	542.4	765.0
Medium	570.9	845.0
High	599.4	920.0

* In thousands

NOTE: Projections by broad industrial sector for the CRAG Area are given in Appendix A. Similar projections for the SMSA are given in Appendix B.

2. Comparison, CRAG'S Illustrative Employment and Population Projections

	Pop. (000's)	Employment (000's)	Employable Pop. ¹		Employment	
			# (000's)	% Total Pop.	% Employ- able Pop.	% Total Pop.
			<u>1970</u>			
	1038.0	447.7	643.1	62.0	69.62	43.13
			<u>1980</u>			
Low	1227.8	542.4	805.0	65.6	67.38	44.18
Prob	1267.3	570.9	833.3	65.8	68.51	45.05
High	1306.8	599.4	861.7	65.9	69.56	45.87
			<u>2000</u>			
Low	1741.2	765.0	1185	67.4	64.6	43.9
Prob	1864.5	845.0	1261	67.6	67.0	45.3
High	2010.4	920.0	1355	68.1	67.9	45.8

¹ Population 15-64.

EMPLOYMENT PROJECTIONS (continued)

3. Comparison of Growth Rates in Total Population, Employable Population,* and Employment, CRAG Area, Illustrative Projections.

PERIOD	POPULATION		EMPLOYMENT
	TOTAL	EMPLOYABLE*	
	(average annual growth rates) ¹		
1960-70	2.01	2.63	2.97
1970-80			
low	1.69	2.27	1.95
medium	2.02	2.63	2.47
high	2.33	2.97	2.97
1980-2000			
low	1.76	1.87	1.73
medium	1.95	2.17	1.98
high	2.18	2.39	2.17
1990-2000			
low	1.74	2.01	1.81
medium	1.97	2.32	2.14
high	2.23	2.58	2.43

* Population 15-64.

¹ Compounded.

B. COUNTY PROJECTIONS1. CRAG'S ILLUSTRATIVE PROJECTIONS*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
1980	Low	349.9	58.2	74.9	49.6	9.7
	Medium	361.8	63.0	83.0	52.7	10.4
	High	372.4	68.7	89.5	57.6	11.2
2000	Low	447.3	95.5	131.3	77.1	13.8
	Medium	475.7	111.3	154.5	87.4	16.1
	High	503.7	126.6	172.0	99.8	18.0

* In thousands.

NOTE: Employment projections by broad industrial sector are given for individual counties in Appendix C.

2. Projections by Others*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
BPA	1975	346.4	50.2	60.7	48.9	9.0
	1980	381.5	57.8	72.2	57.0	9.7
	1985	417.0	66.0	84.3	65.9	10.5
	1990	452.5	74.7	96.8	75.5	11.2

* In thousands.

NOTE: For source, see Table 1, page 6.

A. CRAG AREA Population Projections

1. CRAG's Illustrative Projections *

	<u>1980</u>	<u>2000</u>
Low	1,227.8	1,741.2
Medium	1,267.3	1,864.5
High	1,306.8	2,010.4

* In thousands

2. Projections by Others for the CRAG Area *

	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>
NPA ¹	1,104.3	1,213.8	-	-	-
BPA	1,163.0	1,291.8	1,434.4	1,581.2	-
Bell	1,115.4	1,204.3	1,285.8	-	-
State Census Boards	1,113.4	1,245.1	1,377.3	1,512.9	1,753.6
EPA-HUD ¹	1,099.5	1,193.8	1,298.7	1,412.7	1,633.2
OBERS ²	-	1,924.0	-	2,251.1	2,577.7

* In Thousands

¹ Portland-Vancouver SMSA only.

² 18 counties in Oregon and 5 in Washington.

NOTE: for sources, see Table 1, page 6

B. COUNTIES

1. CRAG's Illustrative Projections *

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
Low	1980	589.3	219.8	225.4	158.4	34.9
	2000	651.0	369.0	412.2	261.2	47.9
Medium	1980	599.4	230.0	237.1	164.7	36.0
	2000	686.4	398.9	446.7	280.5	52.0
High	1980	614.2	237.8	246.5	171.2	37.1
	2000	731.6	434.2	484.8	303.6	56.1

* In thousands

2. CRAG's Comprehensive Design Projections *

	<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
Concentration Plan	725.5	324.0	442.5	289.3	77.7
Dispersion Plan	701.0	326.0	465.0	286.4	108.6
Radial Corridors Plan	755.5	284.0	448.2	299.5	99.0

* In thousands.

NOTE: These numbers are not final. However, the numbers settled on will likely fall within the range shown. All of the above are based on "planned" distributions of a CRAG Area design population of two million people. See page 4.

3. Projections by Others*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
BPA						
	1975	587.0	200.9	201.2	143.3	30.6
	1980	614.9	236.5	244.9	162.9	32.6
	1985	641.4	277.3	292.9	187.8	35.0
	1990	662.6	321.9	342.7	216.4	37.6
Bell						
	1975	588.0	183.2	175.0	137.5	31.7
	1980	620.8	201.5	194.8	151.3	35.9
	1985	638.0	221.0	215.0	174.0	37.8
State Census Boards						
	1975	576.9	183.7	183.6	138.3	30.9
	1980	602.1	214.5	237.4	157.6	33.5
	1985	626.0	245.0	289.9	179.4	37.0
	1990	650.0	274.1	341.7	207.5	39.6
	2000	695.7	329.1	435.8	248.5	44.5

* In thousands

NOTE: For sources, see Table 1, page 6

VI. HOUSEHOLD PROJECTIONS

A. CRAG AREA

1. General - CRAG Projections

The CRAG household projections below are from the illustrative projection series. The design population of two million has not been allocated to households yet. See page 4.

2. CRAG Illustrative Projections - CRAG Area *

	<u>1980</u>	<u>2000</u>
Low	440.7	649.4
Medium	456.0	697.2
High	471.2	754.4

* In thousands

3. Projections by Others - CRAG Area *

BPA	
1980	464.7
1990	592.8
Bell	
1980	432.6

* In thousands

NOTE: for sources, see Table 1, page 6

Household Projections (continued)

B. COUNTY PROJECTIONS*1. CRAG's Illustrative Projections*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>"Col.</u>
Low	1980	228.1	72.3	74.9	54.0	11.5
	2000	257.8	131.5	149.1	93.9	17.1
Medium	1980	233.0	75.7	79.1	56.4	11.9
	2000	272.1	142.8	162.0	101.7	18.7
High	1980	239.3	78.4	82.4	58.7	12.3
	2000	292.5	155.5	176.0	110.2	20.2

* In thousands.

2. County Projections by Others*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
BPA	1975	218.4	64.3	64.7	47.5	10.0
	1980	235.2	79.3	82.7	56.3	11.2
	1985	250.4	96.0	102.7	67.0	12.4
	1990	263.5	113.4	123.6	78.8	13.5
Bell	1975	218.3	59.6	56.4	46.4	9.7
	1980	236.7	66.6	64.5	52.7	12.1
	1985	245.9	73.9	72.5	61.3	12.9

* In thousands.

NOTE: For sources, see Table 1, page 6.

VII. ENROLLMENT PROJECTIONS

A. CRAG Area (000's) ¹

		Total	K-8	9-12	College
1980	low	318.5	171.1	87.8	59.7
	med.	331.5	179.5	90.0	61.9
	high	344.6	188.0	92.1	64.4
2000	low	415.8	237.8	103.2	74.7
	med.	453.0	262.3	112.0	78.7
	high	504.3	291.9	125.5	87.0

Note: Rows may not add to totals due to rounding

B. County Projections (000's) ¹

		Mult.	Clack.	Wn.	Clark	Col.
<u>1980-Low</u>	K-8	70.0	34.7	34.5	26.5	5.4
	9-12	37.1	17.8	17.2	12.8	2.8
	College	34.7	8.3	10.8	5.4	.4
	Total	141.8	60.7	62.6	44.8	8.6

Note: Columns may not add to totals due to rounding

¹ These are part of the illustrative projections series. Enrollment projections for a design population of 2,000,000 have not been prepared yet. See page 4. Comparative projections are not shown because enrollment projections for the CRAG Area and its component counties have not been prepared by others.

Enrollment projections (continued)*

		<u>Mult.</u>	<u>Clack.</u>	<u>Wn.</u>	<u>Clark</u>	<u>Col.</u>
<u>1980 - Med.</u>	K-8	72.2	36.8	36.9	28.0	5.7
	9-12	37.4	18.5	18.0	13.3	2.9
	College	35.5	8.8	11.5	5.7	.4
	Total	145.1	64.0	66.4	47.0	9.0
<u>1980 - High</u>	K-8	75.0	38.6	38.9	29.5	5.9
	9-12	38.0	19.0	18.6	13.7	2.9
	College	36.7	9.1	12.1	6.0	.4
	Total	149.7	66.8	69.6	49.2	9.3
<u>2000 Low</u>	K-8	71.2	56.4	61.4	41.3	7.6
	9-12	31.8	24.7	26.3	17.1	3.3
	College	37.4	12.0	17.2	7.6	.5
	Total	140.4	93.1	104.8	66.0	11.4
<u>2000 Med.</u>	K-8	76.8	62.7	68.5	46.0	8.3
	9-12	33.7	27.1	28.8	18.8	3.6
	College	39.1	12.7	18.4	8.0	.5
	Total	149.6	102.5	115.6	72.8	12.4
<u>2000 High</u>	K-8	83.4	70.4	77.0	51.8	9.3
	9-12	36.9	30.6	32.7	21.3	4.0
	College	42.7	14.2	20.5	9.0	.6
	Total	162.9	115.3	130.2	82.0	13.8

* In thousands

Note: Columns may not add to totals due to rounding

APPENDIX A

CRAG AREA EMPLOYMENT

PROJECTIONS

BY

BROAD INDUSTRIAL SECTOR

ILLUSTRATIVE PROJECTIONS
EMPLOYMENT, CRAG AREA
1980 and 2000
(000's)

	1960	1970	1980			2000		
			LOW	MED.	HIGH	LOW	MED.	HIGH
Total Civilian	333.7	447.1	542.4	570.9	599.4	765.0	845.0	920.0
Agriculture	18.4	12.8	9.5	8.2	6.7	7.6	6.6	5.6
Self-Employed	45.4	47.9	56.4	52.5	50.5	67.2	62.2	59.5
Manufacturing	66.3	88.1	100.7	112.3	122.8	137.7	157.1	174.8
Construction	14.7	17.5	20.7	22.3	23.1	27.5	31.0	35.0
TCPU ¹	27.7	30.4	31.8	32.8	33.8	37.5	40.6	43.2
Trade	67.3	93.5	114.2	119.4	126.8	161.6	179.7	196.1
FIRE ²	15.0	24.8	32.2	33.7	35.2	45.9	52.0	58.0
Services	38.0	68.2	94.0	102.8	108.4	147.7	171.5	193.2
Government	40.9	63.8	82.9	86.9	92.1	132.3	144.0	154.6

PERCENTAGE DISTRIBUTION

Total Civilian	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture	5.51	2.86	1.75	1.44	1.12	.99	.78	.61
Self-Employed	13.61	10.71	10.40	9.20	8.43	8.78	7.36	6.47
Manufacturing	19.87	19.70	18.57	19.66	20.49	18.00	18.60	19.00
Construction	4.40	3.91	3.82	3.91	3.85	3.59	3.70	3.80
TCPU ¹	8.30	6.80	5.86	5.75	5.64	4.90	4.80	4.70
Trade	20.17	20.91	21.05	20.91	21.15	21.12	21.27	21.32
FIRE ²	4.50	5.55	5.94	5.90	5.87	6.00	6.15	6.30
Services	11.39	15.25	17.33	18.01	18.08	19.31	20.30	21.00
Government	12.26	14.27	15.28	15.22	15.37	17.30	17.04	16.80

AVERAGE ANNUAL GROWTH RATES

	1960-70	1970-80			1980-2000			1970-2000		
		LOW	MED.	HIGH	LOW	MED.	HIGH	LOW	MED.	HIGH
Total Civilian	2.97	1.95	2.47	2.97	1.73	1.98	2.17	1.81	2.14	2.43
Agriculture	-3.56	-2.94	-4.36	-6.27	-1.08	-1.04	-0.91	-1.72	-2.18	-2.72
Self-Employed	.54	1.65	.92	.53	.88	.85	.82	1.13	.87	.73
Manufacturing	2.88	1.35	2.46	3.38	1.58	1.69	1.78	1.50	1.95	2.31
Construction	1.76	1.69	2.45	2.82	1.43	1.71	2.10	1.52	1.96	2.34
TCPU ¹	.93	.45	.76	1.07	0.83	1.07	1.23	.70	.96	1.18
Trade	3.34	2.02	2.48	3.09	1.75	2.07	2.20	1.84	2.20	2.50
FIRE ²	5.16	2.65	3.11	3.56	1.79	2.19	2.53	2.07	2.50	2.87
Services	6.02	3.26	4.19	4.74	2.93	3.46	2.93	2.61	3.12	3.53
Government	4.55	2.65	3.14	3.74	2.36	2.56	2.62	2.46	2.75	2.99

¹ Transportation, communication, and public utilities

² Finance, insurance, and real estate

APPENDIX B

SMSA EMPLOYMENT PROJECTIONS

BY

BROAD INDUSTRIAL SECTOR

WITH SPECIAL DETAIL

IN THE MANUFACTURING SECTOR

Illustrative Employment Projections
with Detailed Manufacturing Sector

SMSA

(000's)

Industry	1950	1960	1970	1978 State ¹	1980 BPA ²	1980 CRAG		
						low	med.	high
Total	285.5	327.3	438.9	528.5	568.5	532.6	560.5	588.2
Agriculture	18.2	17.0	11.8	8.0	9.7	8.6	7.4	6.0
Self-Employed	39.0	44.2	46.5	52.0	58.9	54.8	51.0	49.0
Wage-Salary	228.3	266.1	380.6	486.5	—	469.2	502.1	533.2
Manufacturing	57.0	64.4	85.7	98.9	103.0	97.9	109.1	119.2
Durable Goods	29.9	35.4	54.8	66.5	—	67.3	76.6	84.4
Lumber & Wood	11.4	8.6	8.7	9.6	7.0	8.0	9.6	10.1
Furniture & Fixtures	2.5	1.9	2.7	3.3	—	3.3	4.1	4.5
Primary Metals	*	5.2	6.5	7.0	—	7.2	7.5	8.1
Fabricated Metals	*	4.5	6.8	8.2	—	8.0	8.5	9.3
Machinery	3.2	4.3	7.9	9.2	—	10.0	11.5	12.5
Electrical Mach.	*	4.3	10.0	12.5	—	13.5	16.0	18.4
Transportation Equip.	1.4	3.0	6.9	9.2	—	10.0	11.5	13.0
Other Durable Goods	*	3.6	5.3	7.5	—	7.3	7.9	8.5
Non-Durable Goods	27.1	29.0	30.9	32.5	—	30.6	32.5	34.8
Food & Kindred Products	10.3	10.1	10.3	10.3	11.1	10.0	10.4	10.8
Textile Mill Products	*	2.6	2.5	2.7	—	2.0	2.3	2.7
Apparel	*	3.1	3.3	3.9	—	3.4	3.6	4.0
Paper & Allied Products	6.3	7.4	7.6	7.7	—	7.5	7.8	8.3
Printing & Publishing	3.7	3.4	4.0	4.3	—	4.0	4.3	4.7
Other Non-Durables	1.8	2.4	3.2	3.6	—	3.7	4.1	4.3
Contract Construction	13.8	14.8	17.3	21.5	20.0	20.4	22.0	22.8
TGPU ³	30.4	27.5	30.2	32.5	32.8	31.5	32.5	33.5
Wholesale & Retail Trade	57.6	66.8	92.6	118.0	121.9	113.0	118.0	125.2
FIRE ⁴	11.4	14.9	24.7	32.0	32.1	32.0	33.5	35.0
Services	29.8	37.8	67.7	90.0	99.1	93.3	102.0	107.5
Government	28.3	39.9	62.4	75.6	90.5	81.1	85.0	90.0

* Data not available for 1950

¹ Oregon State Employment Division: for source, see page 6.

² Bonneville Power Administration: for source, see page 6.

³ Transportation, communication, and public utilities

⁴ Finance, insurance and real estate

Source: 1950-1970 data: Labor Force and Employment in the Portland SMSA,
Oregon State Employment Division, Annual

APPENDIX C

COUNTY EMPLOYMENT PROJECTIONS

BY

BROAD INDUSTRIAL SECTOR

ILLUSTRATIVE EMPLOYMENT PROJECTIONS: CLACKAMAS COUNTY

A. EMPLOYMENT (000's)									B. PERCENTAGE DISTRIBUTION (total county employment = 100.00%)							
	1960	1970	1980			2000			1960	1970	1980			2000		
			low	med.	high	low	med.	high			low	med.	high	low	med.	high
TOTAL CIVILIAN	30.7	44.6	58.2	63.0	68.7	95.5	111.3	126.6	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
AGRICULTURE	6.3	4.1	2.6	2.3	1.9	2.2	2.0	1.8	120.52	19.19	4.47	3.65	2.77	2.30	1.80	1.42
SELF-EMPLOYED	6.1	9.7	10.5	9.6	9.2	13.8	13.1	12.5	19.37	17.26	18.04	15.24	13.39	14.45	11.77	9.87
MANUFACTURING	6.2	8.7	10.0	11.7	13.5	16.0	17.3	22.5	20.20	29.51	17.18	18.57	19.65	16.75	17.34	17.77
CONSTRUCTION	1.0	1.9	2.7	3.1	3.3	4.7	5.5	6.2	3.26	4.26	4.64	4.92	4.80	4.92	4.94	4.90
T.C.P.U.	.5	1.0	1.2	1.4	1.6	2.2	2.8	3.4	1.63	2.24	2.06	2.22	2.33	2.30	2.52	2.69
TRADE	3.9	8.2	11.7	13.0	15.0	21.6	26.1	30.9	12.70	18.39	20.10	20.63	21.52	22.62	23.45	24.41
F.I.R.E.	0.4	0.9	1.2	1.5	1.7	2.3	3.5	4.5	1.30	2.02	2.06	2.38	2.47	2.41	3.14	3.79
SERVICES	2.3	5.2	8.6	10.1	11.2	14.9	19.1	22.9	7.49	11.66	14.78	16.03	16.30	15.60	17.16	9.40
GOVERNMENT	4.0	6.9	9.7	10.3	11.3	17.8	19.9	21.6	13.03	15.47	16.67	16.35	16.45	18.64	17.88	17.06

C. PERCENTAGE DISTRIBUTION (county employment as % of SMSA, by sector)									D. AVERAGE ANNUAL GROWTH RATES *						
	1960	1970	1980			2000			1960 1970	1970-1980			1980-2000		
			low	med.	high	low	med.	high		low	med.	high	low	med.	high
TOTAL CIVILIAN	9.35	10.16	10.93	11.24	11.68	12.71	13.43	14.03	3.81	2.70	3.51	4.41	2.51	2.89	3.10
AGRICULTURE	37.06	34.75	30.23	31.05	31.67	31.88	33.33	36.00	-4.20	-4.45	-5.62	-7.40	-0.33	-0.46	-0.27
SELF-EMPLOYED	13.80	16.56	19.16	18.52	18.78	21.13	21.54	21.63	2.36	3.15	2.23	1.80	1.38	1.57	1.54
MANUFACTURING	9.63	10.15	10.21	10.72	11.33	11.93	12.61	13.25	3.45	1.40	3.01	4.49	2.38	2.53	2.59
CONSTRUCTION	6.76	10.98	13.24	14.00	14.47	17.34	17.74	17.97	6.63	3.58	5.02	5.68	2.81	2.91	3.20
T.C.P.U.	1.82	3.31	3.81	4.25	4.78	5.91	6.95	7.84	7.18	1.84	3.42	4.91	3.05	3.53	3.84
TRADE	5.84	8.86	10.40	11.00	12.00	13.50	14.90	16.00	7.71	3.62	4.72	6.23	3.11	3.55	3.65
F.I.R.E.	2.68	3.64	3.75	4.60	4.86	5.05	6.80	8.36	3.45	2.92	5.24	6.57	3.31	4.33	5.33
SERVICES	6.08	7.68	9.22	9.91	10.42	10.20	11.28	12.00	8.50	3.69	5.16	6.86	2.51	2.79	3.24
GOVERNMENT	10.03	11.06	11.96	12.09	12.56	13.75	14.15	14.29	5.60	3.46	4.09	5.06	3.08	3.35	3.29

T.C.P.U. - Transportation, Communication, Public Utilities
 F.I.R.E. - Finance, Insurance, and Real Estate

ILLUSTRATIVE EMPLOYMENT PROJECTIONS: CLARK COUNTY

	A. EMPLOYMENT (000's)								B. PERCENTAGE DISTRIBUTION (Total County Employment = 100.00%)							
	1980				2000				1980				2000			
	1960	1970	low	med.	high	low	med.	high	1960	1970	low	med.	high	low	med.	high
Total Civilian	31.5	40.6	49.6	52.7	57.6	77.1	87.4	99.8	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Agriculture	3.6	1.8	1.3	1.1	.8	.9	.7	.5	11.43	4.43	2.62	2.09	1.39	1.17	.80	.50
Self-Employed	5.5	6.2	5.2	7.2	6.8	11.7	8.9	8.3	17.46	15.27	16.53	13.66	11.81	15.18	10.18	8.31
Manufacturing	8.4	10.3	11.5	12.8	14.7	16.4	19.6	23.0	26.67	25.37	23.19	24.29	25.52	21.27	22.43	23.07
Construction	1.0	1.6	2.2	2.5	2.6	3.8	4.5	5.1	3.17	3.94	4.44	4.74	4.51	4.93	5.15	5.11
T.C.P.U.	1.7	1.9	2.0	2.2	2.4	2.7	3.3	3.8	5.40	4.68	4.03	4.17	4.17	3.50	3.78	3.71
Trade	3.2	4.8	6.0	6.6	8.0	10.0	12.2	15.1	10.16	11.82	12.10	12.52	13.89	12.97	13.96	15.13
F.I.R.E.	0.5	1.1	1.6	1.9	2.1	2.7	3.9	5.2	1.10	2.71	3.23	3.61	3.65	3.50	4.46	5.21
Services	2.8	4.6	6.1	7.1	7.9	10.4	13.8	16.4	8.89	11.33	12.30	13.47	13.72	13.49	15.79	16.43
Government	4.8	7.9	10.7	11.3	12.3	18.5	20.5	22.4	15.24	19.46	21.57	21.44	21.35	23.99	23.46	22.44

	C. PERCENTAGE DISTRIBUTION (County Employment as % of SMSA, By Sector)								D.. AVERAGE ANNUAL GROWTH RATES						
	1980				2000				1960 1970	1970-1980			1960-2000		
	1960	1970	low	med.	high	low	med.	high		low	med.	high			
Total Civilian	9.62	9.25	9.31	10.26	9.40	10.54	9.79	11.06	2.57	2.02	2.64	3.56	2.23	2.56	2.79
Agriculture	21.18	15.25	15.12	14.86	13.33	13.04	11.67	10.00	-6.70	-3.20	-4.81	-7.79	-1.82	-2.23	-2.23
Self-Employed	12.44	13.33	14.96	14.12	13.83	17.86	14.79	14.29	1.21	2.84	1.51	0.93	1.79	1.58	1.00
Manufacturing	13.04	12.01	11.75	11.73	12.33	12.23	12.81	13.55	2.06	1.11	2.20	3.62	1.79	2.15	2.26
Construction	6.76	9.25	10.78	11.49	11.40	14.02	14.61	14.78	4.81	3.24	4.56	4.97	2.77	2.98	3.43
T.C.P.U.	6.18	6.29	6.35	6.72	7.16	7.26	9.20	8.58	1.12	.51	1.48	2.32	1.51	2.05	2.34
Trade	4.79	5.18	5.30	5.60	6.40	6.30	6.90	7.80	4.14	2.20	3.24	5.24	2.59	3.12	3.23
F.I.R.E.	3.36	4.45	5.00	5.54	6.00	5.93	7.72	9.06	8.20	3.82	5.62	6.68	2.65	3.66	4.64
Services	7.41	6.79	6.10	6.94	7.35	7.12	5.15	5.60	5.09	2.86	4.44	5.56	2.70	3.38	3.72
Government	12.03	12.66	13.19	13.29	13.67	14.29	14.55	14.81	5.11	3.08	3.64	4.53	2.78	3.02	3.04

T.C.P.U. - Transportation, Communication, Public Utilities
 F.I.R.E. - Finance, Insurance, Real Estate

ILLUSTRATIVE EMPLOYMENT PROJECTIONS: COLUMBIA COUNTY

A. EMPLOYMENT (000's)

	1960	1970	1980			2000		
			low	med.	high	low	med.	high
Total Civilian	6.42	8.15	9.71	10.36	11.19	13.84	16.06	18.01
Culture	1.35	.97	.55	.79	.70	.69	.64	.59
Unemployed	1.15	1.35	1.61	1.51	1.46	1.92	1.80	1.73
Manufacturing	1.88	2.45	2.77	3.07	3.58	3.64	4.14	4.98
Construction	.08	.24	.28	.30	.31	.38	.46	.51
P.U.	.24	.22	.28	.32	.35	.32	.40	.45
Health	.50	.93	1.24	1.43	1.58	2.08	2.98	3.35
R.E.	.06	.13	.20	.23	.24	.39	.49	.56
Services	.21	.49	.72	.84	.91	1.62	2.06	2.42
Government	.95	1.36	1.76	1.87	2.06	2.80	3.09	3.42

B. PERCENTAGE DISTRIBUTION (Total County Employment = 100.00%)

	1960	1970	1980			2000		
			low	med.	high	low	med.	high
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Culture	21.43	11.90	8.75	7.63	6.26	4.99	3.95	3.28
Unemployed	17.91	16.56	16.58	14.58	13.05	13.7	11.21	9.68
Manufacturing	29.29	30.06	28.53	29.63	31.99	26.30	25.78	27.65
Construction	1.25	3.94	2.88	2.90	2.77	2.75	2.86	2.83
P.U.	3.74	2.70	2.88	3.09	3.13	2.31	2.49	2.50
Health	7.50	11.41	12.77	13.90	14.12	15.03	18.56	18.60
R.E.	0.93	1.72	2.06	2.22	2.14	2.82	3.05	3.11
Services	3.27	6.01	7.42	8.11	8.13	11.71	12.83	13.22
Government	14.80	16.69	18.13	18.05	18.41	20.23	19.24	18.99

C. AVERAGE ANNUAL GROWTH RATES

	1960	1970 - 1980			1980 - 2000		
	1970	low	med.	high	low	med.	high
Total Civilian	2.41	1.77	2.43	3.22	1.79	2.22	2.41
Culture	-3.25	-1.31	-2.03	-3.21	-1.04	-1.05	-.85
Unemployed	1.91	1.78	1.13	.79	.88	.88	.85
Manufacturing	2.68	1.34	2.28	3.87	1.37	1.51	1.66
Construction	11.68	1.55	2.26	2.59	1.54	2.16	2.52
P.U.	-.87	2.44	3.82	4.75	.67	1.12	1.26
Health	6.40	3.00	4.40	5.44	2.62	3.74	3.83
R.E.	6.52	3.63	5.09	5.54	3.39	3.85	4.33
Services	9.62	3.92	5.54	6.39	4.13	4.59	5.01
Government	3.65	2.61	3.24	4.24	2.35	2.54	2.57

T.C.P.U. - Transportation, Communication, Public Utilities

F.I.R.E. - Finance, Insurance, Real Estate

ILLUSTRATIVE EMPLOYMENT PROJECTIONS: MULTNOMAH COUNTY

A. EMPLOYMENT (000's)									B. PERCENTAGE DISTRIBUTION (Total County Employment = 100.00%)								
	1960	1970	1980			2000			1960	1970	1980			2000			
			low	med.	high	low	med.	high			low	med.	high	low	med.	high	
Total Civilian	240.3	304.1	349.9	361.8	372.4	447.3	475.7	503.7	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	
Agriculture	3.1	2.1	1.6	1.3	1.0	1.2	1.0	.7	1.29	0.69	.46	.36	.27	.27	.21	.14	
Self-Employed	27.2	25.1	25.0	24.0	23.5	23.8	22.9	22.0	11.32	8.25	7.14	6.63	6.31	5.32	4.81	4.3	
Manufacturing	43.8	50.1	54.2	58.1	61.0	65.1	70.1	74.0	18.23	16.47	15.49	16.06	16.38	14.55	14.74	14.1	
Construction	11.6	11.6	12.0	12.5	12.8	13.1	14.3	15.8	4.83	3.81	3.43	3.45	3.44	2.93	3.01	3.0	
T.C.P.U.	24.6	26.1	26.9	27.3	27.7	30.1	31.3	32.3	10.24	8.58	7.69	7.55	7.44	6.73	6.58	6.1	
Trade	57.1	71.7	80.8	82.4	84.7	99.9	103.6	108.2	23.76	23.58	23.09	22.78	22.74	22.33	21.78	21.1	
F.I.R.E.	13.6	21.7	27.7	28.3	29.1	37.7	40.0	42.1	5.66	7.14	7.92	7.82	7.81	8.43	8.41	8.1	
Services	30.9	53.1	69.5	73.8	76.3	103.1	114.2	125.2	12.86	17.46	19.86	20.40	20.49	23.05	24.01	24.1	
Government	28.4	42.6	52.2	54.1	56.3	73.3	78.3	83.4	11.82	14.01	14.92	14.95	15.12	16.39	16.46	16.1	

C. PERCENTAGE DISTRIBUTION (County Employment as % of SMSA, By Sector)									D. AVERAGE ANNUAL GROWTH RATES								
	1960	1970	1980			2000			1970	1970-1980			1980-2000				
			low	med.	high	low	med.	high		low	med.	high	low	med.	high		
Civilian	73.42	69.29	65.70	64.55	63.31	59.55	57.39	55.84	2.38	1.41	1.75	2.05	1.24	1.38	1.52		
Agriculture	18.24	17.80	18.60	17.57	16.57	17.39	16.67	14.00	-3.82	-2.68	-4.68	-7.15	-1.43	-1.30	-1.77		
Self-Employed	61.54	53.98	45.62	47.06	47.06	36.46	37.94	38.15	-0.80	-0.40	-0.45	-0.66	-0.25	-0.23	-0.33		
Manufacturing	68.01	58.46	55.36	53.25	51.17	48.55	45.82	43.58	1.35	.79	1.49	1.99	.92	0.94	.97		
Construction	78.38	67.05	58.82	56.93	56.14	48.34	46.47	45.80	0.0	.34	.75	.99	.44	.67	1.06		
T.C.P.U.	89.45	86.42	84.76	84.13	82.69	80.71	77.77	75.47	.59	.30	.45	.77	.56	.68	.71		
Trade	85.48	77.43	71.50	69.00	67.80	62.00	59.40	56.00	2.30	1.20	1.40	1.68	1.07	1.15	1.23		
F.I.R.E.	91.28	87.85	86.56	84.44	83.84	82.86	77.60	73.34	4.78	2.47	2.69	2.98	1.55	1.75	1.86		
Services	81.75	78.43	74.49	72.36	70.98	70.57	67.41	65.62	5.56	2.73	3.35	3.69	1.99	2.21	2.51		
Government	71.18	68.27	64.36	63.66	62.56	56.60	55.94	55.16	4.14	2.05	2.42	2.83	1.71	1.87	1.98		

T.C.P.U. - Transportation, Communication, Public Utilities
 F.I.R.E. - Finance, Insurance, Real Estate

WASHINGTON
COUNTY

ILLUSTRATIVE EMPLOYMENT PROJECTIONS: WASHINGTON COUNTY

A. EMPLOYMENT (000's)

	1960	1970	1980			2000		
			low	med.	high	low	med.	high
Civilian	24.8	49.6	74.9	83.0	89.5	131.3	154.5	172.0
Culture	4.0	3.8	3.1	2.7	2.3	2.6	2.3	2.0
Employed	5.4	7.5	11.1	10.2	9.5	16.0	15.5	15.0
Manufacturing	6.0	16.2	22.2	26.5	30.0	36.6	44.0	50.3
Construction	1.2	2.2	3.5	3.9	4.1	5.5	6.5	7.4
T.C.P.U.	.7	1.2	1.4	1.6	1.8	2.2	2.8	3.3
	2.6	7.9	14.5	16.0	17.5	28.0	34.8	38.6
F.I.R.E.	0.4	1.0	1.5	1.8	2.1	2.8	4.1	5.3
Services	1.6	4.8	9.1	11.0	12.1	17.7	22.3	26.3
Government	2.7	5.0	8.5	9.3	10.1	19.9	22.2	23.8

B. PERCENTAGE DISTRIBUTION

(Total County Employment = 100.00%)

1960	1970	1980			2000		
		low	med.	high	low	med.	high
100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
16.13	7.66	4.14	3.25	2.57	1.98	1.49	1.1
21.77	15.12	14.82	12.29	10.61	12.19	10.03	8.5
24.19	32.66	29.64	31.93	33.52	27.88	28.48	29.1
4.84	4.44	4.67	4.70	4.58	4.19	4.21	4.1
2.82	2.42	1.87	1.93	2.01	1.68	1.81	1.1
10.48	15.93	19.36	19.28	19.55	21.33	22.52	22.1
1.61	2.02	2.00	2.17	2.35	2.13	2.65	3.1
7.26	9.68	12.15	13.25	13.52	13.48	14.43	15.1
10.89	10.08	11.35	11.20	11.28	15.16	14.37	13.1

C. PERCENTAGE DISTRIBUTION

(County Employment as % of SMSA, By Sector)

	1960	1970	1980			2000		
			low	med.	high	low	med.	high
Civilian	7.58	11.30	14.06	14.81	15.22	17.48	18.64	19.07
Culture	23.53	32.20	36.05	36.49	38.33	37.58	38.33	40.00
Employed	12.22	16.13	20.26	20.00	19.39	24.55	25.72	25.88
Manufacturing	9.32	18.90	22.68	24.29	25.17	27.29	28.76	29.62
Construction	8.11	12.72	17.16	17.58	17.98	20.30	21.18	21.45
T.C.P.U.	2.56	3.97	4.44	4.90	5.37	5.91	7.08	7.71
	3.89	8.53	12.80	13.50	14.00	17.50	19.70	20.00
F.I.R.E.	2.68	4.05	4.69	5.42	6.00	6.15	7.96	9.23
Services	4.76	7.09	9.75	10.79	11.26	12.11	13.16	13.78
Government	6.77	8.01	10.48	10.96	11.22	15.37	15.76	15.74

D. AVERAGE ANNUAL GROWTH RATES

1960	1970	1970-1980			1980-2000		
		low	med.	high	low	med.	high
7.18	4.21	5.28	6.08	2.85	3.16	3.32	
-0.51	-2.02	-3.36	-4.90	-0.88	-0.80	-0.70	
3.34	4.00	3.12	2.39	1.84	2.11	2.31	
10.44	3.20	5.04	6.36	2.53	2.57	2.62	
6.25	4.75	5.89	6.42	2.29	2.59	3.00	
5.54	1.55	2.91	4.14	2.29	2.83	3.08	
11.74	6.26	7.31	8.28	3.35	3.96	4.03	
9.60	4.14	6.05	7.70	3.17	4.20	4.74	
10.31	6.61	8.65	9.69	3.38	3.60	3.96	
6.36	5.45	6.40	7.29	4.34	4.45	4.38	

T.C.P.U. - Transportation, Communication, Public Utilities

F.I.R.E. - Finance, Insurance, Real Estate