Economic and Demographic Profile Series: Number 95.1

Labor Force Analysis For Seneca County

The Outlook For Jobs and Workers

Prepared for:

Seneca County
Department of Employment and Training

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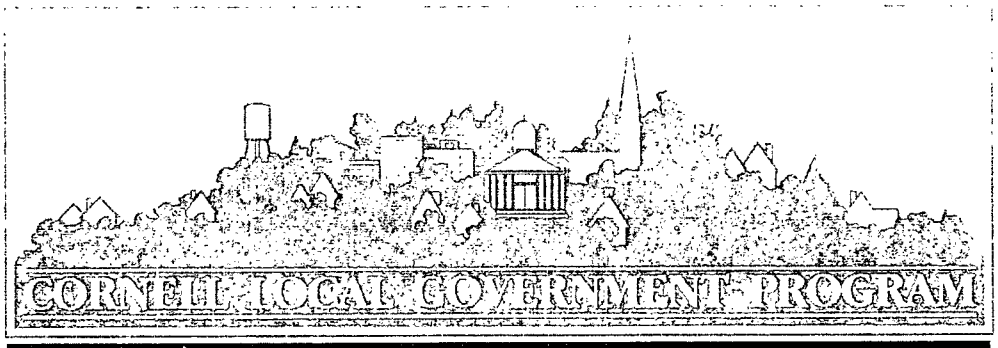
THE LOCAL GOVERNMENT PROGRAM



A program of the Department of Agricultural Economics, College of Agriculture and life Sciences of Cornell University. A Technical Assistance Center supported by the U.S. Department of Commerce Economic Development Administration. Affiliated with the Cornell Cooperative Extension.

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U.S. DEPARTMENT OF COMMERCE
ECONOMIC DEVELOPMENT ADMINISTRATION
Technical Assistance Program

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The Outlook For Jobs and Workers

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February 1995
revised March 1995

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This report was co-authored by staff of the Cornell Institute for Social and Economic Research, New York State Department of Labor, and Seneca County Department of Employment of Training. This report was produced under contract with the Seneca County Department of Employment and Training as a part of a Defense Conversion Adjustment Demonstration Project funded by the U.S. Department of Labor Employment and Training Administration.

Labor Force Analysis For Seneca County: The Outlook For Jobs and Workers

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OVERVIEW

Key to any economic development strategy is a human resource development strategy, based on an understanding of what the county labor force is today, how it came to be that way, and where it is headed. The purpose of this report, Labor Force Analysis For Seneca County: The Outlook For Jobs and Workers, is to provide planners, educators, and policy makers with an objective assessment of the County's labor force and the factors that shape it.

The labor market for Seneca County residents has been disrupted by the downsizing of the Seneca Army Depot and the Willard Psychiatric Center. As a relatively small county, dislocations of this magnitude require innovative solutions if levels of employment, earnings, and benefits are to be improved or even sustained. Key to innovative solutions is a detailed understanding of current situations, and an appreciation of what is possible. While there may be a temptation to focus locally, leaders and decision-makers must understand the position of the county within the regional economy. Part of the solution for displaced workers may be helping them to compete for employment opportunities in neighboring counties.

The first part of the report describes the geography of the labor market area in which Seneca County residents are employed. A description of commuting patterns and historic trends in out-commuting are presented and analyzed. The second part of the report moves to a discussion of how local labor markets work. Factors affecting the demand for workers by industry and occupation are given. Part three presents the outlook for jobs by occupation within the local labor market area. The degree to which fluctuations in employment within the labor market area are tied to state and national trends for the past twenty-five years are also presented. The fourth and final part of the report deals with the characteristics of the labor force residing within Seneca County. Trends in population growth and decline are given, as well as data on composition of the labor force by sex, race and ethnicity, and educational level. Information on the employment characteristics are also presented, including employment by industry and occupation.

The main body of the report is divided into four parts. All of the supporting figures, maps, and tables are collected together in a section following the four main parts. These are presented one to a page, in a size suitable for reproducing and transferring to overheads for use in a group presentation. Readers are encouraged to extract pieces of the report for their own purposes, and it is hoped that the physical organization of the report facilitates that process.

In this overview the major points which are highlighted in each part of the report have been brought forward. Along with the highlighted observation is a reference to the page number of the report on which you will find the statement and an expanded presentation of data and discussion. This should enable readers to go directly to those sections of the report in which they are most interested.

I. Labor Market Area For Seneca County Residents

- *One-third of Seneca County workers commute to places of employment outside the county.* (page I-1)
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- *Job training programs can promote a better match between skills workers offer and those employers seek.* (page II-2)

- *The human resources of an area are among the most important factors contributing to the success of businesses.* (page II-2)

- *Changes in technology will often increase demand for skilled workers.* (page II-4)

- *Job training can improve productivity, and in turn, increase competitiveness and profit margins.* (page II-5)

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- *Employment outlooks may be forecast by surveying employers or modeling the economy.* (page III-1)

- *Employment is projected to grow in the Seneca labor market area, however growth is expected to lag behind the nation.* (page III-3)

- *Growth occupations are in Teaching, Health Care, and Retail Sales.* (page III-3)

- *Most of the projected job openings are due to the need to replace workers who have retired, been promoted, or changed jobs; not from overall growth in employment.* (page III-4)

- *Among the growth occupations, the highest median weekly earnings are for Secondary School Teachers.* (page III-4)

- *Growth in jobs for the Seneca labor market area has been affected by national recessions.* (page III-6)

- *Just as in the national and state economies, most jobs in the Seneca labor market area are in the service producing sectors.* (page III-7)

- *Jobs in manufacturing have declined by 20 percent since 1979 in the Seneca labor market area. Declines in employment in manufacturing are part of a nation-wide trend.* (page III-7)

- *Jobs in the service producing sectors continue to grow.* (page III-8)

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- *Between 1971 and 1994 the population of Seneca County declined by 8 percent.* (page IV-1)

- *Seneca is the only county in the five-county labor market area to have declined in population size.* (page IV-1)

- *Between 1990 and 1994 there has been a net outmigration of 1,700 from Seneca County.* (page IV-2)

- *Only 3 percent of Seneca County's population is non-white, and 1 percent is of Hispanic origin.* (page IV-3)

- *America's population is increasingly diverse in racial and ethnic makeup, but not so for Seneca County.* (page IV-4)

- *Seneca County's adult population has a relatively higher proportion of adults with either a high school diploma or Associates degree, and lower proportions with Bachelors or advanced degrees.* (page IV-4)

- *The proportion of adults in Seneca County with some college training has grown dramatically over the past 20 years.* (page IV-5)

- *The overall rise in educational attainment is likely due to the reduction of psychiatric patients institutionalized in Seneca County, and a general increase in education attainment which has occurred statewide.* (page IV-6)

- *Until the downsizing of the Depot, military personnel were an important component of Seneca County's labor force.* (page IV-6)

- *The downsizing of Seneca Army Depot has had little apparent impact on unemployment rates.* (page IV-7)

- *Relatively few Seneca County residents employed in business services, a major growth industry.* (page IV-8)

I. LABOR MARKET AREA FOR SENECA COUNTY RESIDENTS

The labor market in which Seneca County residents sell their labor extends beyond the boundaries of the county itself. In 1990, one-third of the resident workers commuted outside the county to their place of work. In some counties of New York State virtually all of the residents work within their county of residence. There were ten counties in which less than 10 percent of the employed labor force worked outside their county of residence. Monroe County leads all counties in the state, with only 3 percent of its resident workers employed outside the county. Counties such as these tend to be centers of employment, not only providing jobs for their residents, but also attracting a significant number of workers from neighboring counties. These counties are net importers of labor.

In contrast, there are counties in which a high proportion of the resident workers travel outside their county of residence for employment. Counties that provide employment for less than two-thirds of their workers are often referred to as "bedroom communities." These are areas whose population shrinks at the beginning of each workday as commuting workers leave for their places of employment. Putnam County in the Hudson Valley region of the state is the leading "bedroom" county, with only 29 percent of its resident workers employed within the county. Although these "bedroom" counties provide employment for some of their residents, and even attract workers from neighboring counties, they are net exporters of labor. A large proportion of their residents is dependent on centers of employment outside the county.

One-third of Seneca County workers commute to places of employment outside the county.

In 1990 the number of employed Seneca County residents was 15,600, and 66 percent of them worked in Seneca County. Coincidentally, 67 percent was the statewide proportion of New Yorkers working in the same county in which they lived. A listing of all counties in New York State, ranked by the proportion of employed persons working within their county of residence is presented in Table I.1.[1] Seneca County ranked 37th out of 62 counties in New York State.

The county was the place of work for 2,800 persons residing in neighboring counties. In the balance of trade for workers and jobs, Seneca County had 5,300 workers who traveled outside the county for employment, and 2,800 workers who resided outside the

[1] All figures, maps and tables are presented in a separate section later in the report.

county and worked in the county. The net balance was then -2,500, making Seneca County a net exporter of labor.

Where does the third of Seneca County's workers who are out-commuters travel for employment? (See Map I.1) The leading destination for Seneca County commuters is Ontario County, where 2,500, or 16 percent, of the county's resident workers are employed. The second most popular out-of-county employment destination is Tompkins County, providing employment for over 7 percent of Seneca County's resident workers. Wayne County was next, as a place of employment for 3 percent of the employed labor force. The remaining 8 percent commuted to Monroe, Onondaga, Cayuga, and Yates Counties, and elsewhere.

With the decline in employment opportunities, commuting rates among Seneca County workers have probably increased more since 1990.

Since 1960 the proportion of Seneca County residents employed inside the county has decreased steadily. The trend in out-commuting among Seneca County employed persons is displayed in Figure I.1. In 1960, 83 percent of the workers were employed in Seneca County. Then in 1970 that proportion dropped to 76 percent, while in 1980 it declined another percentage point to 75 percent. In 1990 the proportion of all resident workers employed within the county fell to 66 percent.[2] With the decline in employment opportunities, commuting rates among Seneca County workers have probably increased more since 1990.

From 1960 through 1990, Ontario County remained the leading out-of-county destination for Seneca County commuters. The proportions have risen from 9 percent in 1960 to 10 percent in 1970, then 12 percent for 1980 and 16 percent most recently in 1990. In a similar fashion, Tompkins County has consistently been the second most popular destination for commuters, and just as steadily has grown in the jobs held by Seneca County residents. The proportion of Seneca County resident workers commuting to Tompkins County has increased from 3 percent in 1960, to 5 percent in 1970, holding steady at 5 percent again in 1980, and then increasing to 7.5 percent in 1990.

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[2] Data on commuting reported in the decennial censuses were coded differently in 1970, with a high proportion of the respondents classified as "Not Reported." Therefore comparisons over time which include 1970 data lack a high degree of precision, yet are useful for observing general trends.

A combination of physical barriers and job opportunities determine the directions that Seneca County commuters travel. Map I.2 is a map of Seneca County and surrounding counties in which population centers and water features are displayed. Cayuga and Seneca Lakes border Seneca County to the east and west, and the closest centers of employment outside the county are to the northwest in Ontario County, and to the southeast in Tompkins County. The sources of data used in this report do not identify where within the county commuting trips originate. It is probable that Ontario County draws commuters principally from the northern portion of the county, and Tompkins County draws from the southern part of the county.

The majority of growth in employment has come from outside the county.

The size of the employed labor force in Seneca County has grown from 10,500 in 1960 to 15,600 in 1990, an increase of 5,100 for the thirty year period. During the same period, 1960 to 1990, the number of Seneca County residents working in the county increased by 1,600, from 8,700 in 1960 to 10,300 in 1990. The increase in residents working within Seneca County accounted for only 31 percent of the total growth in employment among residents. Over two-thirds of the growth in employment among Seneca County residents has been due to the increase in workers employed outside the county. County residents are increasingly dependent upon employment opportunities beyond the county.

In order to understand the demand for labor of Seneca County residents, the counties that make up its labor market need to be identified. The New York State Department of Labor divides New York State into ten regional labor markets. The major metropolitan centers of employment in the state serve as the nodes for these labor market regions. In this scheme, Seneca County is part of the Finger Lakes Region. This labor market, shown in Map I.3, consists of nine counties: Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates.

Commuting ties Seneca County to Ontario and Tompkins Counties.

Seneca County is on the fringe of the Finger Lakes Region. The central county that dominates the statistics for this regional labor market area is Monroe County. The number of resident workers within the nine-county region was 552,988 in 1990. The number of workers residing in Seneca County, 15,600, represented less than 3 percent of the regional total, while Monroe County with an employed labor force of 347,100 represented 63 percent of the region. Among Seneca County's employed labor force of 15,600, only 2

percent commuted to work in Monroe County. The primary destination for commuters from Seneca County was Ontario County, which in turn was more closely integrated into the Finger Lakes Region. Among Ontario County's resident workers of 46,200, there were 11,900, or 26 percent, which commuted to work in Monroe County.

From a statewide perspective the rationale for linking Seneca County to the Finger Lakes Region is fairly strong. Commuting patterns strongly link Seneca County to Ontario County, and Ontario County to Monroe County. If one starts from the major centers of employment in New York State, such as Rochester, Buffalo, Syracuse, and Binghamton, then putting Seneca County in the Finger Lakes Region makes sense. If however, one starts from the perspective of Seneca County and its resident workers, there are only weak primary links to Rochester and Monroe County. The second most popular out-of-county destination for Seneca County workers was Tompkins County, where 7.5 were employed. From the statewide perspective, Tompkins County is part of the Southern Tier Region, anchored by Binghamton and Elmira. This problem of not fitting well into any of the regions is common among counties that are located on the fringes of metropolitan areas.

For what geographic area should job training programs prepare Seneca County residents to seek employment? The straight-forward answer is, "For the geographic area in which residents currently are finding employment!" If the past data on commuting are a good predictor of the future, at least one-third of employed residents will work outside Seneca County, and most of the growth in employment opportunities will take place outside the county. The Finger Lakes Region is too large an area in which to expect Seneca County residents to search for employment. An extremely small proportion, only 2 percent, of residents commute to work in Monroe County, the dominant center of employment in the Finger Lakes Region. The focus of job training and placement should extend beyond the borders of Seneca County and include the surrounding counties where many of the county residents are currently employed.

The focus of job training and placement must include employment opportunities beyond the borders of Seneca County.

The Service Delivery Area (SDA) for job training activities, to which Seneca County belongs, serves well as a geographic area for planning purposes in determining the future demand for labor. The SDA is composed of Ontario, Seneca, Wayne and Yates Counties. Adding Tompkins County to the group better reflects the needs of Seneca County

residents. In this report the five-county area is referred to as the Seneca labor market. The boundaries of the Seneca labor market area are shown in Map I.3.

In addition to employment development within Seneca County's borders, residents will need to prepare to seek and compete for jobs in the five-county labor market area.

In Part III, this report turns to the outlook for employers demand for workers by occupation and industry in the Seneca labor market area. The history and outlook for this five county area have been and continue to be one of growth. In addition to employment development within Seneca County's borders, residents will need to prepare to seek and compete for jobs in the five-county labor market area. If Seneca County residents are to find suitable employment, then more workers may need to become commuters, and to travel longer distances. The alternatives to commuting may be unemployment, underemployment, or moving to another region of the country. In order to assist Seneca County residents to compete for jobs in the five-county labor market area, job trainers need to know more about the market in which job seekers will be searching.

Before presenting the outlook for the Seneca labor market area, the next section, Part II, presents information for understanding how a local labor market works, and what generates demand for workers.

II. HOW A LOCAL LABOR MARKET WORKS

The labor market is like any other market for goods and services, in that it is made up of buyers and sellers. A market serves to coordinate the exchange of goods and services offered by the sellers in return for compensation from the buyers. In a free market the balance between supply of and demand for goods and services sets the price of exchange offered by buyers and accepted by sellers.

Local variations in supply and demand for labor affect wage levels

The market for labor consists of the collection of buyers and sellers of labor services. Not all participants are actively trading on a frequent basis, nor are they participating in the same markets. On the stock exchange, the market for shares of a "blue chip" company consists of a large number of buyers and sellers. Willing buyers and sellers agree to a price for the shares. Transactions for the shares are carried out many times a day. Prices may fluctuate throughout the day, depending upon the vagaries of the marketplace. Labor markets are different. Sellers of labor do not actively participate in the selling of their labor in an open competitive bidding process very frequently. Similarly, most employers are not in the market buying labor on a daily basis. The prices paid and accepted by these inactive buyers and sellers are influenced by those who are "in the market" for workers or jobs.

The labor market also serves as the mechanism by which workers are distributed to jobs— in terms of geographic area and in terms of occupation. The geography of the labor market may be simplified by contrasting national with local labor markets. Buyers and sellers who restrict their search to the immediate area, generally defined as reasonable commuting distance, are dealing in the local labor market. If the search is broad, and is carried out nationally, then they are dealing in the national labor market.

There are many variations on this simple dichotomy for the employer and employee. An employer may advertise regionally to fill some positions. A worker may search for jobs in a local labor market distant from his or her current home, but close to relatives. The main point is that while national markets usually are characterized by a large number of active and potential buyers and sellers of labor, for which the demand and price is set by a more open market, local labor markets vary considerably in demand for workers by various occupations, and the supply of available workers to fill those positions. These local variations in supply and demand are largely responsible for determining rates of employment and earnings.

Job training programs can promote a better match between skills workers offer and those employers seek.

Workers and employers who are better informed regarding the conditions within their local labor market can better plan their search strategy. Job training programs can promote a better match between the supply and demand of workers by providing training in the skills that buyers will be shopping for, now and in the future.

The need for this kind of forward looking approach is more significant because of the changes in the economy brought about in large part by reduced federal spending on defense and defense related industries. With many of the companies that were involved in defense industries converting their activities to compete in new markets for their goods and services, the demand for new skills among the labor force is increased. Traditional relationships and demand for labor with those skills are undergoing significant changes.

> Worker training should focus on the greatest problem that exists—unskilled workers or those with mismatched skills for today's jobs. ... training must be directly tied to job growth strategies and needs of existing and potential new businesses. Training should carefully match workers' backgrounds and abilities. (Mayer, 1992)

The human resources of an area are among the most important factors contributing to the success of businesses.

The human resources of an area are among the most important factors contributing to the success of businesses. Job training programs in Seneca County can help to bridge the gaps between the skill levels of persons seeking employment and the requirements of employers seeking workers. In order to better match the needs of existing employers within the county, information gathered by the Business Retention and Expansion component of the Seneca County-US Department of Labor Defense Conversion Adjustment (DCA) Demonstration Project can be used.

In order to determine what skills and competencies will best serve workers, in today's and tomorrow's labor market, information presented in the Competencies component of the Seneca - DOL DCA Project will be invaluable to planners of training programs. In the next section of this report on the labor force, the outlook for growth in occupations and industries in the Seneca labor market area[1] is presented.

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[1] The Seneca labor market area is composed of the five counties—Ontario, Seneca, Tompkins, Wayne, and Yates—with which Seneca County residents are most closely tied, by commuting and/or job training through the regional Service Delivery Area for federal job training programs. The designation of the five counties is explained in section I. "Labor Market Area For Seneca County Residents."

In combination, the three reports on Business Retention and Expansion, Competencies, and Labor Force Analysis will equip job trainers and educators with the critical information needed to form strategic plans for better developing the human resources of Seneca County.

Dynamics of Local Labor Markets

Why is it that within a local labor market there is often a shortage of workers in certain occupations, while within the same market area there will be an abundance of persons seeking employment in an occupation for which there is little demand? The labor force supply and demand in these situations are apparently out of balance, with the result that some jobs go begging at the same time that unemployed workers cannot find jobs. The solution to overcoming a mismatch situation such as this may be clearer if strategic planners and job trainers have a better understanding of what factors lie behind changes in demand for workers by occupation within a local labor market, and on the other hand, what factors affect the supply of labor within the market area.

What Drives Demand For Workers By Occupation?

In order to account for past changes in demand, and in turn, to be better able to forecast future demand by occupation, labor market analysts break out the various factors affecting changes in the demand for workers by occupation. This type of analysis is carried out at the national level with equations using quantifiable values for each of the factors. That type of rigorous analysis is not possible at the local level, but it is instructive to at least review the impacts of these factors, and to observe how they play out in the local labor market. We point out five factors affecting demand for labor within a sector of the economy. These factors are:

- level of economic activity;
- demand for goods and services;
- technology of production;
- productivity of labor; and
- staffing patterns within an industry.

Measurement of these factors within a local labor market is not often possible, however they can be conceptualized.

The general **level of economic activity** within a region is an important factor. Imagine the increased demand for workers within a particular occupation that would result

purely on the basis of an expanded local economy. This would be the increase in demand that would result even though all of the other factors were held constant. This effect is often characterized by the old saying, "A rising tide lifts all boats."

Another factor affecting demand for workers within a particular occupation is an increase in the **demand for goods and services** produced by businesses that employ persons in those occupations. As an illustration, imagine that the demand for widgets[2] grows, while the general economy experiences no growth. The demand for widget-assemblers[3] will then outpace the general demand for all workers. In fact, demand for widget-assemblers may grow even though the general economy within the region is in decline. A scenario such as this can occur when widgets are shipped out of the area to consuming industries located in regions where the general economy is expanding, and with it the demand for items that require widgets.

Changes in technology will often increase demand for skilled workers

A third factor affecting demand for workers by occupation is changes in the **technology of production**. There are two aspects to changes in production technology that can affect demand for labor. In the first instance, a change in technology may affect demand for a product. To continue with our previous illustration, widgets may be a component in the manufacture of personal computers. The substitution of personal computers for typewriters, adding machines, and other office machines brought about by a change in office technology creates a booming market for personal computers, which in turn creates increased demand for widgets. The effect of this in the local labor market is the same as the previous factor, demand for goods and services in a particular segment. The workers making typewriters and adding machines, however, find the demand for their services to be greatly reduced.

Production technology also involves automation that is the substitution of capital for labor. The widget manufacturer may invest in automation that lowers the overall cost of production by replacing less skilled workers with machines. If widget-assemblers can be replaced by machines, then changes in production technology may reduce demand for labor in this occupation. At the same time, the general effect of the substitution of capital

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[2] Widgets are a make-believe product. They are referred to in this section in order to illustrate how the various factors of demand for labor would play out in an industry and company which is engaged in the manufacture of widgets.

[3] Widget-assemblers are the equally made-up occupation for persons engaged in the front-line production of widgets.

machinery for less skilled workers is to increase demand for skilled operators. In our illustration, while widget-assemblers may be laid-off or not replaced, hiring of widget-assembly machine operators may increase demand for skilled workers.

Changes in technology can greatly affect demand for workers within an industry. Just as importantly, changes in technology not only affect the overall demand for workers, but also the demand for workers in various occupations and skill levels. Assessing the impact of technology requires an understanding of the effect the change will have on the level of demand for the product. In addition, it is necessary to assess whether the change will permit employers to invest in machinery that will substitute for labor. Technology that increases demand for a product increases demand for labor. Technology that substitutes machines for human labor generally decreases demand for labor. However the shift in demand for labor may mean a reduced demand for laborers in one occupational category, while increasing demand for workers in another.

Job training can improve productivity, and in turn, increase competitiveness and profit margins.

The next factor we have identified is **productivity of labor**, which is the amount of output by a unit of labor. Training is a major ingredient in improving labor productivity. With all other factors held constant, gains in productivity can result in decreased demand for labor and at the same time help to push wages higher. The qualifier, "all other factors held constant," is critical and often not the case. Improvements in productivity can lead to increased competitiveness and profit margins, spurring growth in demand for products and investment in expansion, and leading to increased demand for labor. It is important to review the factors collectively as well as individually. Otherwise, an erroneous conclusion may be reached, such as job training will result in reduced demand for workers.

The final factor, **patterns of staffing**, is the distribution of employees among occupations in a particular industry. Changes in the staffing pattern, such as a reduction in middle managers along with increased reliance on production workers, will reduce the demand for middle managers within that industry, while boosting demand for production workers. In accounting for changes in past demand for workers by occupation, as well as forecasting future demands, changes in staffing patterns play a very important role. Labor analysts rely on detailed tables of occupation by industry in order to translate a forecast of total employment within a particular industry into demand for workers by occupation. Changes in these staffing patterns are an important determinant of changes in the demand

for workers by occupation. The statistical summaries used by analysts are based on national or state occupational employment by industry patterns, and assumed to hold within regional labor markets.

III. DEMAND FOR LABOR IN THE SENECA LABOR MARKET AREA[1]

Projecting Demand For Labor - A Strategic Planning Aid

One of the greatest pieces of strategic information to guide the planning of job training programs would be to know with certainty for future years which industries will be demanding how many workers and with what skills. This information could then be communicated to planners as well as current and future members of the labor force, serving as the basis for running training activities and recruiting participants. After all, such knowledge of the future labor market coupled with training in the appropriate skills should assure workers of secure employment at an attractive wage throughout their working lives. Unfortunately, the future can not be known with such certainty. For better or worse, the present state of economic forecasting is less than perfect. Even so, thoughtful projections, drawing upon the best information currently available, are still valuable tools for job trainers and individual workers to use in planning for the future.

Employment outlooks may be forecast by surveying employers or modeling the economy.

Two methods of forecasting future demand for workers are direct surveys of employers regarding their plans for hiring, and economic models forecasting future demand for goods and services. Direct surveys, such as the survey of employers in the Seneca County area conducted by Knowledge Systems & Research, Inc. for the Seneca County - US Department of Labor Defense Conversion Adjustment Demonstration Project, ask employers how many job openings they expect to be hiring for, and whether they will be changing their total level of employment. The forecast period for surveys such as these are generally short term, 3-to-6 months. Temporary employment agencies use such surveys to gauge the demand for their services. Sometimes, employer surveys may ask about the longer range outlook for hiring by the firm, for a 1-to-3 year horizon. Forecasts based on employer surveys, particularly the longer range type, are indicators of employer perceptions regarding the general and local economy. These forecasts are based on individual firms, building from the bottom-up to a general forecast for the area.

The alternative to asking employers their plans, is to base forecasts upon economic models of future demand for goods and services within an economy. Most efforts of this

[1] The Seneca labor market area is composed of the five counties—Ontario, Seneca, Tompkins, Wayne, and Yates—with which Seneca County residents are most closely tied by commuting and/or job training

type rely on models of the national economy, which disaggregate the projected level of Gross Domestic Product (GDP) into various sectors, private and public, of the national economy. The level of projected output within each sector is used to derive the projected level of employment, which in turn is translated into demand for workers by occupation. Economic projections for states and regions are generally linked to these national projections of output and employment by industry. For example, regions with relatively high concentrations of economic activity in rapidly growing sectors, would be projected to have higher than average levels of growth in employment. In this approach to forecasting, projected levels of regional employment must add up to the total level of employment for the larger economy. In this way the regions are constrained so that the sum of the parts must equal the whole. Since each region is limited to a share of the overall employment, these forecasts follow a top-down approach.

The forecasts of regional demand for labor prepared by the New York State Department of Labor are based on economic models and a methodology which follows this general approach. The Labor Department uses the New York State Division of the Budget's forecast of employment by industry for the state, which in turn, is linked to a national forecast of employment by industry. The Labor Department's regional Labor Market Analysts use their knowledge of economic trends within each of the state's ten labor regions to distribute the statewide figures on employment by industry to each region. The forecasts of demand for workers by occupation which are presented in the Labor Department's series, *Tomorrow's Jobs, Tomorrow's Workers*, are arrived at in this manner. The same methodology by which the regional forecasts are prepared was used by William Ramage and Patrick Berkery of the New York State Department of Labor to prepare the projected demand for workers by occupation for the Seneca labor market area.

Projections about local demand for workers by occupation can help to answer questions about the future labor market. What occupations are likely to be in greater demand? How many workers in which occupations are employers likely to need to replace over the next five years? Keep in mind that these are projections based on forecasts of the national, state, and local economies. They assume statewide rates of retirements, promotions, and job-transfers apply to a local labor market. The Department of Labor advises users of these data not to take them too literally. The art of employment projections is just not a highly precise science. Projections for local labor market areas may be thrown off by unforeseen movements of employers into (or, unfortunately, out of) a community.

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through the regional Service Delivery Area for federal job training programs. The designation of the five

Used properly, occupational projections prepared by the New York State Department of Labor for local labor market areas are valuable tools to guide strategic planning.

Outlook for Employment by Occupation, 1993-1998

Detailed projections of employment and openings in the Seneca labor market area for over 200 occupations are presented in Table III.1. The table presents estimates of employment by occupation for the base year, 1993, and projected employment in 1998. The table also presents projections of the average annual job openings by occupation, breaking these down into openings resulting from growth in overall employment, and openings due to the need to replace workers.

Employment is projected to grow in the Seneca labor market area, however growth is expected to lag behind the nation.

Between 1993 and 1998, total employment in the labor market area is expected to increase by approximately 2,600 jobs, from 125,850 in 1993 to 128,450 in 1998. This represents an average annual percentage increase of 0.4 percent, approximately one-fourth of the anticipated annual rate of growth of 1.5 percent for the nation. Table III.2 and Figure III.1 present the projected changes in employment by major occupation group. The groups with the greatest total increase are Professional, Paraprofessional, and Technician occupations, projected to grow by 1,450 jobs; and Service occupations, projected to grow by 1,140 jobs. Marketing and sales occupations are expected to add 590 jobs for the period. This projection includes the impact of the new Finger Lakes Outlet Center upon employment in the labor market area. Major occupational groups which are expected to decline in number of jobs are Administrative Support, Including Clerical occupations, losing 260 jobs; and Operators, Fabricators, and Laborers, losing 440 jobs.

Growth occupations are in Teaching, Health Care, and Retail Sales

Among individual occupations, many of the fastest growing in percentage terms are related to health care. In Table III.3, Home Health Aides, Personal Home Care Aides, Medical Assistants, and Dental Hygienists are expected to be the fastest growing occupations. Table III.4 presents growth in order of numerical increase, and the teaching occupations are well represented. Secondary School Teachers is anticipated to be the leading growth occupation, closely followed by Retail Salespersons. The health care

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counties is explained in part I. "Labor Market Area For Seneca County Residents."

occupations are well represented also, as Home Health Aides, and Nursing Aides/Orderlies rank third and fourth in terms of projected growth in jobs.

Overall growth in employment is only part of the story concerning the number of job openings. The other factor is the need to replace workers who have retired, quit, been promoted, or changed jobs. Whenever a worker separates from a job and the job remains, there is a need to replace that worker with a new hire.

Most of the projected job openings are due to the need to replace workers who have retired, been promoted, or changed jobs; not from overall growth in employment.

The average annual number of job openings in the Seneca labor market area is projected to be 3,250 per year. Of these, 520 are due to projected growth in total employment, and 2,730 are a result of anticipated need for replacement workers. Two major occupation groups will average about 900 job openings a year between 1993 and 1998: Professional, Paraprofessional, and Technicians; and Services. Figure III.2 illustrates that the overwhelming majority of these openings will be due to the need to replace workers currently in those occupations. Even the major occupation groups which are expected to decline or show almost no growth, will have significant openings each year. The total number of Clerical jobs is anticipated to decrease by 260 over the period, and yet an average of 420 job openings are projected to be available each year. The need to replace workers will create numerous openings in occupations such as Agriculture, Production and Repair, and Laborers.

Figure III.3 presents a graphic summary of the individual occupations which are projected to have the most job openings between 1993 and 1998. The leading occupation is Secondary School Teachers, where both growth and the need to replace workers will create approximately 170 net openings each year. A similar story of growth and replacements puts Retail Salespersons in the second position, with 140 openings per year in the five-county area. Rounding out the top five occupations, Cashiers, Secretaries, and Waiters/Waitresses will have significant openings due in large part to the need to replace workers.

Among the growth occupations, the highest median weekly earnings are for Secondary School Teachers.

The amount of money paid to persons in these occupations varies greatly. Among the growth occupations, the highest median weekly earnings in 1993 are for Secondary School

Teachers ($471). The occupation with the lowest median weekly earnings is a Fast Foods Worker ($136). Table III.5 lists earnings levels for occupations in these growth categories. The data were developed from information on prior earnings reported by unemployment insurance beneficiaries who registered as job applicants with the New York State Department of Labor during 1993. The applicants are all from the Seneca labor market area. For each occupation, 1993 median weekly earnings is listed, followed by the mid-range of reported earnings. The number of hours worked during the base period affects the level of earnings. Part-time work may be the norm in some establishments or occupations while long hours at premium overtime rates may be common in others. Rather than reflecting the comparable full-time equivalent earnings across occupations, these data reflect actual earnings by persons in those occupations (New York State Department of Labor, 1991: iii).

In preparing these projections, the New York State Department of Labor used current information on the level of employment in 1993, and included information about future employment levels for Seneca County's major employers. The baseline data for 1993 used in the occupational projections already reflect most of the loss of jobs from the Seneca Army Depot. The projections to 1998 assume that by then no jobs will remain at the Depot, and that employment at Willard Psychiatric will be down to 100. The addition of jobs in the retail sector due to the new Finger Lakes Outlet Center are also taken into account in the projections.

The Link Between Occupation and Industry

In Part II, "How A Local Labor Market Works," factors which affect the level of demand for workers by occupation were discussed. Two of the factors, level of general economic activity and level of economic activity within particular industries, are key elements in forecasting local demand for workers. Before discussing the general and industry specific economic outlooks, the historic trends in employment for the Seneca labor market area are presented, along with an analysis of the economic linkages of the area national and state economies.

Past Trends in Employment[2]

Total employment in the five counties of the Seneca labor market area grew at an average annual rate of 1.24 percent for the period 1988 - 1993. Taking a longer historical perspective, back to 1969, the total number of jobs in the area has increased from 106,600 in 1969 to an estimated 163,900. The total increase of 57,300 represents an average annual rate of growth of 1.81 percent. Growth in employment in the area has had its ups and downs, tending in an upward direction.

Figure III.4 presents annual data on jobs. Rather than a raw count of jobs, the units presented in Figure III.4 are an index of employment, in which the total number of jobs in 1969 is set equal to 100, and the number of jobs in subsequent years is expressed as an index based on the job count in 1969. In 1993, the most current year for which an estimate of employment is available, the index of employment is 154. This may also be interpreted as a percentage of employment compared to 1969. In 1993, total employment stood at 154 percent of its level in 1969.

Growth in jobs for the Seneca labor market area has been affected by national recessions.

Dividing the history of employment in the area into periods of ups and downs helps to identify periods of local economic expansion and recession. The period 1969-74 was a growth period, followed by a one year decline in total jobs for 1974-75. The next growth period ran from 1975 through 1979. Following 1979, jobs declined each year for the next three years, bottoming out in 1982. The period 1982-1990 saw steady growth in employment for eight years. A dip in jobs took place between 1990 and 1991, with little change to 1992. The total number of jobs in the area again increased between 1992 and 1993.

Since 1969, there have been three definite periods of economic expansion: 1969-74; 1975-79; and 1982-90. Since 1992, a fourth period of economic expansion is apparently underway also. The average annual rates of job growth during the four periods of

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[2] Data on employment in this section of the report are based on the count of jobs as reported by employers. The source for these data were the U.S. Bureau of Economic Analysis' Regional Economic Information System, and statistical estimates for the Seneca labor market area for 1993 derived from the New York State Department of Labor's annual ES 202 employment series.

economic expansion have been:

1969-74	2.73%
1975-79	2.46%
1982-90	2.78%
1992-93	1.10%

The current economic expansion has not been characterized by vigorous job growth in New York State.

Just as in the national and state economies, most jobs in the Seneca labor market area are in the service producing sectors.

Job growth and decline has not been experienced in the same manner across the major industry divisions of the Seneca labor market area. In Figure III.5, the distribution of jobs in the labor market area for 1993 are displayed as percentages of total employment. The largest industry division is the services sector, with 34 percent of the jobs in the area. The services sector is made up of a broad array of diverse industries, including hotels, auto repair shops, legal offices, hospitals, and cleaning services. The wholesale and retail trade division are second at 20 percent, followed by government at 15 percent, and manufacturing at 13 percent. The remaining 18 percent include jobs in agriculture, mining, construction, transportation and public utilities, and finance, insurance and real estate.

Figure III.5 also shows the distribution of jobs by major industry division in 1993 for New York State and the United States. There is not much of a difference in the distribution of jobs by sector for the three areas. The United States matches the Seneca labor market area very closely, except for a smaller proportion of jobs in the services industry division. Compared with both the United States and the Seneca labor market area, New York State has a smaller proportion of its jobs in manufacturing, and wholesale and retail trade, while having a higher proportion in services.

Jobs in manufacturing have declined by 20 percent since 1979 in the Seneca labor market area. Declines in employment in manufacturing are part of a nation-wide trend.

The historical trend in jobs by these major industrial divisions for the Seneca labor market area differ considerably. Figure III.6 presents the history of employment in manufacturing for the area. Between 1969 and 1993, there were four periods of expansion in jobs in manufacturing, and five periods of recession. The total number of jobs in manufacturing peaked in 1979, at 27,200. In 1993, the number is estimated to be 21,700.

Jobs in the service producing sectors continue to grow.

By contrast the trend in employment for the wholesale and retail trade (Figure III.7), and services (Figure III.8) industry divisions, has been relatively smooth and upward. Jobs in the wholesale and retail trade sectors, declined somewhat between 1979 and 1982, and again 1990 to 1991. The services sector has seen an increase in number of jobs in every year since 1969, except for a small downturn of approximately 100 jobs between 1974 and 1975.

The level of employment in the government sector[3] (Figure III.9) has fluctuated also. This sector includes military, federal civilian, state, and local government employees. Between 1969 and 1979, the total number of jobs in the government sector rose and fell a number of times, and the overall trend was upward. Following 1979, there was a sizable drop from 24,000 to 22,600 in 1983. From 1983 to 1990, the number of jobs increased, reaching a plateau of 25,400, which was maintained for the next couple of years. Between 1992 and 1993, there has been a sizable drop of over 5 percent.

Links To State And National Economies

Trends in employment in the local labor market are strongly influenced by the larger state and national economies. Much of the demand for the goods and services which are produced within the five county labor market area comes from outside the area. In this section, historical trends of employment in the Seneca labor market area in comparison with trends for New York State and the United States are reviewed.

Employment trends in the Seneca labor market area closely follow national trends.

Figure III.10 presents historical trends in total employment for the local labor market, the state, and the nation. An index of employment has been created for all three economies, so that they may be plotted on the same set of axes for direct comparison. Data on employment for New York State and the United States are available for 1994, allowing us to extend the series on employment forward, a year beyond the most recently available data for the five county labor market area. The similarities between the Seneca labor market area and the United States are striking. From 1969 to 1993, jobs in the Seneca labor market area had grown 54 percent, and in the nation the rate of increase was 56 percent. Job

[3] The government sector includes military, federal civilian, and state and local government employees. Examples of government employers are the U.S. Postal Service, state hospitals, local government transit services, local government education, and state and local general government services.

growth in New York State had lagged far behind at 12 percent. Not only are the overall rates of growth similar, but the timing of periods of expansion and recession are very compatible, as are the magnitudes of change.

The major periods of recession in the Seneca labor market area coincide with recessions in the national economy. This is strong evidence of a link between the local labor market and the national economy. Later in this report the economic outlook for the national economy is presented, and because of this link it is argued that the national outlook has relevance to the Seneca labor market area. Before moving to the national outlook, similarities and differences in employment trends between the local labor market, the state, and the nation by the major divisions of industry are examined.

The trend lines for jobs in manufacturing (Figure III.11) have been very similar for the Seneca labor market area and the United States. The overall decline in jobs in manufacturing in the local labor market since 1979 is not unique to the local area, rather it is closely matched by the national trend. The fluctuations of growth and decline have been more severe locally than nationally, which is to be expected in a local economy with a relatively small number of jobs. When change does occur, it has a greater impact due to the smaller number of jobs in the base. The Seneca labor market area has fared considerably better than New York State as a whole, in retaining jobs in manufacturing. The trend line for the United States extends a year beyond the one for the Seneca labor market area, ending in 1994. Between 1993 and 1994, the number of jobs in manufacturing increased nationally. Have jobs in manufacturing also risen within the local labor market? Or at least have they remained at the same levels and stopped the decline they have been on since 1989?

Employment in the wholesale and retail trade industries has grown greatly in the Seneca labor market area since 1969. From 1977 until 1982 the rate of increase for these jobs lagged behind the national rate, and looked very similar to the trend line for New York State (Figure III.12). Beginning in 1982, all three areas experienced a similar upsurge in employment. While New York State's rate of growth cooled around 1985, the Seneca labor market area rate of increase picked up speed and caught up to the national growth in employment by about 1987. The local labor market and the nation have followed virtually identical paths since then.

A very similar tale holds for an analysis of patterns of change in employment in the services industry division, presented in Figure III.13. Just as with wholesale and retail

trade, the Seneca labor market area has followed the national trend line, except for a period of slower growth in the late 70's and early 80's, that was overcome in the mid through late 80's.

Government is the only major division in which the Seneca labor market area follows New York State trends.

Employment in the government sector is the major exception to the rule of compatibility regarding trends in employment between the local labor market and the nation. Whereas the prior graphs have shown unmistakable similarity in patterns of job growth between the United States and the Seneca labor market area, Figure III.14 shows greater similarities between the local labor market area and the state. The greatest separation between the state and the local labor market area is for the period of the mid-70's, when local growth outpaced state-wide growth, and declines were less severe. Since then, the state and local labor markets have followed very similar paths in term of jobs in government. The major exception to this observation is the most recent interval. There has been a sizable drop in the number of jobs in the government sector of the local labor market. That the five county area is much like the state in terms of government jobs makes sense. Whereas the other major industry divisions generally rose and fell in response to market conditions, the number of government jobs rise and fall in response to public policy. Policy that affects government workers statewide, also affects them locally. The drastic downsizing of the Seneca Army Depot accounts for the sudden drop in the local jobs between 1992 and 1993.

The conclusion to be drawn from this examination of the historical trends in employment by industry, is that the Seneca labor market area is very sensitive to changes in the national economy. In fact, the local labor market follows national trends much more closely than it does state trends. In the next section is a review of what economists in the U.S. Bureau of Labor Statistics see as the outlook for the national economy, in order to guide the outlook for local employment by industry.

The National Outlook

Based on projections prepared by the U.S. Bureau of Labor Statistics, employment in the U.S. is anticipated to grow at an average annual rate of 1.5 percent over the next decade. Projections of employment in the Seneca labor market area, prepared by the New York State Department of Labor, anticipate the annual rate of growth in jobs to be 0.4

percent for the next five years. For the past five years, the average annual rate of growth in jobs was 1.1 percent for the nation, and was 1.2 percent for the local labor market area.

Even though the rates of growth for jobs are anticipated to differ over the next five years for the Seneca labor market area and the United States, many of the same factors affecting the national employment outlook will affect the local area. It is important to be aware of these factors and assess their impact locally.

There are a number of major factors expected to affect demand for outputs in the U.S. economy and hence growth in jobs. One group of factors is demographic. Principal among these are rapid growth in the elderly and middle aged segment of the population; and slower growth of the labor force. Other factors include decreased spending on defense, growth in demand for business equipment, growth in expenditures by consumers, and an improving trade climate for the export of goods and services.

Business services and health services industries will be the leading job generators nationally.

The major industry divisions can be classified as either goods producing or service producing. The goods producing sector includes agriculture, mining, construction, and manufacturing. The service producing sector includes transportation, communications and utilities; wholesale and retail trade; finance, insurance and real estate; services; and government. Almost all of the future growth in employment, 98 percent, is anticipated to come from the service producing sectors of the economy. The business services and health services industries alone are expected to contribute more than one-fourth of the increase in jobs. Employment in the health services industry group—which includes medical offices, nursing and personal care facilities, and hospitals—is projected to grow at an annual rate of 3.0 percent. The business services industry group includes advertising, facilities management, office equipment sales and leasing, personnel supply services, computer and data processing services, security services, and photocopying and art services. The business services group is projected to grow at an annual rate of 3.6 percent.

IV. SUPPLY OF LABOR IN SENECA COUNTY

The size of the labor force that resides in Seneca County is drawn from the population of working age[1]. As was stated in the beginning of the report, the size and characteristics of a local population and labor force is greatly shaped by the demand for labor within the local labor market. This part of the report begins by analyzing trends in the population of Seneca County, making comparisons with neighboring counties in the same local labor market.[2]

Total Population

Between 1971 and 1994 the population of Seneca County declined by 8 percent.

Over the past 25 years the population of Seneca County has decreased slowly. The most recent estimate of population for 1994, prepared by the U.S. Bureau of the Census, puts the county's total population at 32,600. In 1969 the population was estimated to be 35,200. For the entire period, the greatest population size was 35,400 persons in 1971. Figure IV.1 presents the annual trend in population for Seneca County since 1969. There have been three principal periods of population decline for the county. Following the crest in population of 35,400 in 1971, the total dropped to 33,900 in 1974. After a five year period of growth the population once again declined from 34,800 in 1979 to 33,300 in 1983. For the next eight years there was little change, as total population edged up to 33,800 in 1991. Since 1991 the total population has declined to the most current estimate in 1994 of 32,600. This represents a low-point in population for the entire 25 year period.

Seneca is the only county in the five-county labor market area to have declined in population size.

Figure IV.2 illustrates the different trends in population growth for Seneca County compared with New York State, and the four neighboring counties of the local labor market area—Ontario, Tompkins, Wayne, and Yates. Compared with New York State, population

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[1] The population of working age is persons aged 16 years and over. This is the practice followed in the United States by analysts working with labor force issues. In the past, the age was 14 years and over. This does not mean that all persons 16 years and over are considered to be in the labor force. Rather that is the population that could potentially be employed or seeking employment.

[2] The Seneca labor market area is composed of the five counties—Ontario, Seneca, Tompkins, Wayne, and Yates—with which Seneca County residents are most closely tied by commuting and/or job training through the regional Service Delivery Area for federal job training programs. The designation of the five counties is explained in part I. "Labor Market Area For Seneca County Residents."

change has been flat since 1980 and declining since 1991. The greatest contrast is in comparison with the other counties in the local labor market. Ontario and Tompkins consistently led the area in growth from about 1970 through 1986. Since then, Yates has grown more rapidly, and all four counties followed roughly the same rate of growth. The contrasts between Seneca County and the four neighboring counties is most pronounced since 1990.

Seneca County has declined in population since 1990, from 33,700 to 32,600 in 1994 for a loss of approximately 1,100 persons. The older population, persons age 65 years and older, as well as the population under age 65, both declined in size since 1990. The Census Bureau estimates the population age 65 years and older from Medicare enrollment records, and so population change for older persons as well as the under-65 age group may be computed by subtracting the older persons from the estimate of total population. These changes need to be interpreted with caution, because aging naturally moves a person from the younger to the older group over time. A person who was 62 in 1990 would be 66 in 1994, and show up as a loss in population for the younger age group and a gain for the 65-and-over age group.

Persons living in group quarters are included in these population numbers. Persons living in institutions such as mental hospitals and prisons are part of the group quarters population, as well as those living in college dormitories and military barracks. The patients at Willard Psychiatric and soldiers in barracks at the Seneca Army Depot would be counted as persons living in group quarters. The number of persons living in group quarters in Seneca County has declined from 1,200 to 800 between 1990 and 1994. This decline is sizable and accounts for over one-third of the loss in total population. Almost two-thirds of the total loss in population has come from a reduced number of persons living in households.

Between 1990 and 1994 there has been a net outmigration of 1,700 from Seneca County.

Associated with the loss of persons in group quarters there is a loss of jobs for persons providing support services to the group quarters population. There are no direct data in the Census Bureau's estimates of population size and components of change that allow us to specify how many people in the resident population were affected by the reduction in group quarters population. The Bureau does estimate change in population size due to net migration, international and domestic. Between 1990 and 1994, it is estimated that Seneca County had a net increase of 50 in population due to international

migration. Domestic net migration, the net difference between persons moving to Seneca County from other counties in the U.S. and persons leaving Seneca County for other areas of the U.S., was -1,700. These numbers include persons living in group quarters who left the county. This loss due to net migration was offset partially by an excess of births over deaths, which is termed natural increase. The estimated number of births to county residents between 1990 and 1994 was 1,800, and the number of deaths to residents was 1,300, thereby increasing the total population by 500. The net effect of births, deaths, net migration—international and domestic, and other adjustment factors was a decrease in total population of 1,100.

Working Age and Labor Force Population

Details on the size and characteristics of the working age population for counties is generally only available from the decennial censuses of population and housing. In this section Seneca County's working age and labor force populations are compared with New York State and the five county total of the Seneca labor market area for 1990.

Racial and Ethnic Diversity

Only 3 percent of Seneca County's population is non-white, and 1 percent is of Hispanic origin.

The growing racial and ethnic diversity of America's and New York State's labor force is an important theme among human resource and job training planners for the 90's. Projections of growth among non-white and Hispanic origin persons point out that a very important source of future supply of labor lies with minority populations (Briggs). While these trends are very evident in the nation and statewide, they are less apparent in Seneca County and the Seneca labor market area. Only 3 percent of Seneca County's population is non-white, and 1 percent is of Hispanic origin. (NOTE: Persons of Hispanic origin may be of any race. The counts for non-white and Hispanic are not additive in order to arrive at number of minority persons.) In the Seneca labor market area, there are slightly higher proportions of non-whites (5 percent) and persons of Hispanic origin (1.5 percent). For New York State the proportions are significantly higher, where the population is almost 26 percent non-white and 12 percent Hispanic origin.

America's population is increasingly diverse in racial and ethnic makeup, but not so for Seneca County.

Much of the increase in non-white and Hispanic origin population in New York State is fed by international immigration. The proportion of the state population in 1990 who were foreign born was 16 percent. An additional 2.5 percent were born in Puerto Rico. For Seneca County 2 percent were foreign born, and only 0.1 percent were born in Puerto Rico. Among residents of the five-county Seneca labor market area, less than 4 percent were foreign born, and 0.3 percent were born in Puerto Rico. The immigrants from abroad typically follow a pattern of settlement in the major metropolitan centers, and then subsequent moves to the secondary urban centers. As international immigration continues to play a significant role in the growth of U.S. population, the spread of immigrants and their children to smaller labor markets is likely. As of yet, the impact has been small in the Seneca labor market area, and virtually absent from Seneca County. Job training for Seneca County residents needs to incorporate lessons on working in racially and ethnically diverse groups. Lack of exposure to peoples of various racial and ethnic groups may serve to hinder Seneca County residents in adapting to job situations outside the county.

Levels of Educational Attainment

Among the characteristics of a labor force, few are more important than the level of educational attainment. While more education does not necessarily mean a higher quality labor force, the match between well-paying occupations and the levels of educational training required to fill those jobs, can be better gauged if the various levels of educational attainment in the population are determined.

Seneca County's adult population has a relatively higher proportion of adults with either a high school diploma or Associates degree, and lower proportions with Bachelors or advanced degrees.

These data on educational attainment (Figure IV.3) pertain to the adult populations, aged 25 years and older. The proportion of the adult population with less than a high school diploma is 24 percent in Seneca County, just below the statewide average of 25 percent, and considerably higher than the local labor market average of 20 percent. The proportion of the population with a high school diploma, including high school equivalency diplomas, is 37 percent in Seneca County, 32 percent in the Seneca labor market area, and

29 percent in New York State. The proportion with some college, but no degree, is 16 percent in all three areas.

In both Seneca County and the five-county local labor market 9 percent of the adults hold an Associates degree, compared with 6.5 percent for the statewide average. Seneca County has a relatively low proportion of adults with a Bachelor's degree (9 percent), and Graduate or Professional degrees (5.5 percent), compared with the averages for the five-county local labor market (12 percent Bachelors and 10 percent Graduate/Professional); and the state (13 percent Bachelors and 10 percent Graduate/Professional). Seneca County's adult population has a relatively higher proportion of adults with either a high school diploma or Associates degree, a combined 46 percent, compared with 41 percent for the local labor market, and 36 percent for New York State. The statewide average shows relatively higher proportions of persons at the extremes, those without a high school diploma, and those with graduate or professional degrees.

Compared with the five-county labor market area, a greater proportion of Seneca County residents lack a high school diploma (Seneca LMA - 20% versus Seneca County - 24%). Persons without high school diplomas will be at a disadvantage competing for high wage, skilled jobs. Seneca County's lower proportion of persons with 4-year college or more advanced degrees means there is a more limited pool from which employers can attract persons for management and professional positions.

Trend in Educational Attainment

The proportion of adults in Seneca County with some college training has grown dramatically over the past 20 years.

The proportion of the adult population in Seneca County who have attended college increased considerably between 1970 and 1990. Data for Seneca County on the educational attainment of adults, aged 25 years and older, for the years 1970, 1980 and 1990 are presented in Table IV.4. The proportion of adults with less than 12 years of high school has decreased most significantly. Approximately half of the adult population residing in Seneca County in 1970 were not high school graduates. In 1980 that declined to one-third, and in 1990 the proportion was roughly one-quarter. At the same time the proportion with some college training beyond high school has grown dramatically, from one-sixth of adults in 1970, to one-fourth in 1980, and almost one-half in 1990. Whereas in 1970 persons with less than a high school diploma represented half the adult population,

the level of educational attainment has shifted such that almost one-half the adult population had at least some college education.

The overall rise in educational attainment is likely due to the reduction of psychiatric patients institutionalized in Seneca County, and a general increase in education attainment which has occurred statewide.

What accounts for this change? Part of the change is probably due to the de-institutionalization of patients at Willard Psychiatric Center that took place between 1970 and 1990. In 1970 there were 2,872 persons reported in the census as residing in institutions in Seneca County. In 1980, the number reported in the census dropped to 1,083. By 1990, the census reported the number of persons living in institutions to be 670. To the extent that patients at the Willard Psychiatric Center had educational levels lower than the non-institutional population, the reduction in institutional population would have increased the average level of schooling for the county.

A second factor is the general increase in educational attainment among adults that took place across New York State between 1970 and 1990 (Figure IV.5). The proportions of adults with less than a high school diploma in New York State has been almost identical to the proportions for Seneca County cited above for 1970, 1980 and 1990. Similarly, the proportions of New York State adults with some college education have increased in a manner similar to Seneca County's adult population, although the statewide proportions have consistently been higher.

Status of the Labor Force

Until the downsizing of the Depot, military personnel were an important component of Seneca County's labor force.

In addition to the size, diversity, and educational characteristics of the general population, descriptive measures relating to the supply of labor include the labor force participation rate and unemployment rate. The presence of personnel in the Armed Forces at the Seneca Army Depot when the 1990 Census was taken affects the overall picture of the status of the labor force in Seneca County, more than it does for the Seneca labor market area or New York State. The data in this section were taken from the 1990 Census as well as the Department of Labor's official statistics on resident employment status. These data are not directly comparable and the reader should note carefully whether data

cited here are an employment statistic from the 1990 Census summary reports, or the Department of Labor's reports on resident employment status.

Based on the 1990 Census summary reports, the proportion of the county's resident labor force which was in the Armed Forces in 1990 was 3.8 percent, compared with 0.5 percent for the local labor market area, and 0.4 percent for the state. For males the proportions were higher. The proportion of males in the labor force in Seneca County who were in the Armed Forces was 6.1 percent, considerably greater than the five-county labor market average of 0.8 percent, and the state-wide average of 0.7 percent.

The downsizing of Seneca Army Depot has had little apparent impact on unemployment rates.

Along with the reduction of Armed Forces personnel at the Seneca Army Depot, civilian employees were laid off. The Census data for 1990 report the number of military personnel and civilians in the labor force. Armed Forces personnel are not included in the Department of Labor's reports on resident employment status for Seneca County and so changes in the unemployment rate do not reflect changes in military personnel, only the impacts upon the civilian labor force. The unemployment rate in Seneca County has consistently been lower than the statewide rate since 1991. Unemployment rates for Seneca County, New York State, and the United States for the period 1991-94 are shown in Figure IV.4. Unemployment rates for Seneca County do not show a major impact due to layoffs at the Seneca Army Depot in spring of 1993. Unemployment rates dropped from 6.7 percent in 1992 to 6.2 percent in 1993.

The civilian labor force participation rate, the proportion of adults 16 years and over who are employed or seeking employment, is very similar for the county, the local labor market area, and the state. For all males the rates in 1990 were 72.3 percent in Seneca County, 72.2 percent in the five-county labor market, and 72.4 percent in New York State. For females the civilian rates were 55.7 percent in Seneca County, 58.8 percent in the five-county labor market, and 55.4 percent in New York State

Industry and Occupation

This section reports on the major industries and occupations in which Seneca County residents work, whether those jobs are in Seneca County or neighboring counties. The

Census reports employment for 17 categories of industry[3]. These categories may be further grouped into two, goods producing and services producing. The categories are:

Goods Producing

Agriculture, forestry, and fisheries
Mining
Construction
Manufacturing, nondurable goods
Manufacturing, durable goods

Services Producing

Transportation
Communications and other public utilities
Wholesale trade
Retail trade
Finance, insurance, and real estate
Business and repair services
Personal services
Entertainment and recreation services
Health services
Educational services
Other professional and related services
Public administration

Relatively few Seneca County residents employed in business services, a major growth industry.

In Seneca County and the five-county labor market area, goods producing industries employed almost 1/3 of all workers, while the state-wide average was 1/5. In Table IV.1, the major industry categories of employment in 1990 are presented for residents of Seneca County, the Seneca labor market area and New York State. Figure IV.5 compares relative employment in selected industry categories and combinations for Seneca County, the Seneca labor market area, and New York State. A higher proportion of workers living in Seneca County are employed in agriculture, durable goods manufacturing, health services and public administration than the state-wide average for workers in New York State. Compared with workers across the state, there are proportionally fewer workers in the county employed in the transportation and communications; and finance, insurance, and real estate, and business and repair services.

The Seneca County resident labor force also differs with the state and region in the distribution of workers by major occupational category. Table IV.2 presents employment

[3] Data on employment by industry reported in the Census is based on individuals' responses to the household survey. The data on employment by industry reported in the Bureau of Economic Analysis' Regional Economic Information System and the New York State Department of Labor's ES202 series are based on surveys filled out by employers.

in 1990 by major categories and sub-categories of occupation for Seneca County, the Seneca labor market area, and New York State. In Figure IV.6 employed persons are presented by the proportion in major occupational categories. The detailed occupations are summarized in six categories. Seneca County has proportionally fewer persons working in the higher paying occupational category that includes managers and professionals, than the state or the five-county labor market area. There are also relatively fewer persons working in technical, sales, and administrative support occupations. A higher proportion of Seneca County residents work in service occupations; farming, forestry, and fishing occupations; precision production, craft, and repair occupations; and as operators, fabricators, and laborers than the state-wide average. The county also has relatively more residents employed in service occupations; and precision production, craft, and repair occupations than does the five-county labor market area. Proportions employed in farming, forestry, and fishing occupations; and as operators, fabricators, and laborers are similar to the proportions in the Seneca labor market area.

V. SUMMARY

This report was conceived to address the many questions raised in response to the downsizing and potential closure of Seneca Army Depot. What would the impact be on the labor market of a small, rural area with high levels of government employment? What potential existed for absorbing the large numbers of unemployed workers at a time when the local economy would suffer the loss of income generated by the Army base? Would the job skills used at the Depot be readily transferable to other employment opportunities? What was actually known about the labor market in which Seneca County residents are employed? What information would leaders and decision-makers need to plan for the economic readjustment of a county affected not only by the Army's actions, but also by cutbacks in state employment and funding and the loss of manufacturing jobs from the area?

The authors believe that a more thorough understanding of how a local labor market works and recognition of the unique qualities of a specific labor market area will lead to more productive use of available resources. Among those resources, the *human resources of an area are among the most important factors contributing to the success of businesses.* Understanding the direction in which demand for, supply of, and skill levels of the labor force are heading greatly enhances the abilities of policy makers, planners, and trainers to meet the needs of present and potential employers. The size and characteristics of the resident labor force in Seneca County have been shaped by job opportunities and wage levels available within the county and neighboring counties in the local labor market. The changes in employment brought about by the downsizing and potential closure of Seneca Army Depot, similar changes for Willard Psychiatric Center, and changes that have taken place among private sector employers in higher education and manufacturing have all had an impact on the labor force. Recent data on the labor force provides a snapshot of a dynamic process whose direction continues to be affected by changes in employment opportunities as they arise. A government facility ceases operation, then reopens to carry out a different function. Central to the ability to adapt to these changes are well-planned training programs, that can assist residents to equip themselves for the job opportunities—local and regional—that arise. Life long job security has been replaced by the need for life long learning.

The advantages of completing a focused analysis of this nature is that decision-makers can replace *perceptions* of their economic realities with a set of *facts*. They can draw

strength from identifying their advantages and use scarce resources more efficiently by targeting specific weaknesses. This report has shown that Seneca County is in a local labor market which has a diversified economic base, and more closely follows national trends than state trends. The loss of jobs in manufacturing throughout the region is not unique, rather it is evident throughout the state and the nation. That does not reduce the problem created by a loss of relatively high-paying jobs in manufacturing, but it helps to demonstrate that this loss is part of a larger economic change, that local economic development incentives alone are not going to be able to change that reality.

Questions which have not yet been answered and have major implications relate to wage levels and what may be termed the level of underemployment. The unemployment rates of Seneca County do not indicate a serious lack of employment opportunities. What is not apparent is whether job-seekers have accepted positions which do not utilize their skills, accepted two or more part-time positions in place of a previous full-time position, or left the area entirely. Is part of the loss of population a loss of those who had bachelor's degrees or above and were able to relocate out of the area, a "brain drain"? What happens to present county residents when they complete college? What might the age composition of the labor force suggest about the need for further training and life-long learning? Are older workers staying in the market longer to supplement retirement incomes, thereby competing with younger workers? Is the labor pool large enough to support the strategic business plans proposed by county leaders?

The most significant question raised is one of wages relative to performance. There is a *perception* that wages in the Seneca labor market area are lower than other parts of the state. If true, is it indeed a competitive advantage in attracting employers, or a disadvantage in that it does not help to retain highly skilled labor? Wage data is one of the most frequently requested and most difficult to obtain. Potential employers need to evaluate the labor costs of relocation. In assisting job-seekers, the information is needed to efficiently evaluate opportunities with similar skill requirements but different wage levels. The efforts here to match available wage data to growing occupational areas are hindered by the relatively small size of the population. If as has been indicated, the future workforce will change occupations as well as employers numerous times over the course of a work life, and that continuous learning and training opportunities will be necessary for the efficient use of resources, then rational decision-making by both leaders and individuals will require answers to these questions.

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Labor Force Analysis For Seneca County: The Outlook For Jobs and Workers

VII. FIGURES, MAPS AND TABLES

Figure I.1

An Increasing Proportion of Seneca County Workers Are Employed in Ontario and Tompkins Counties

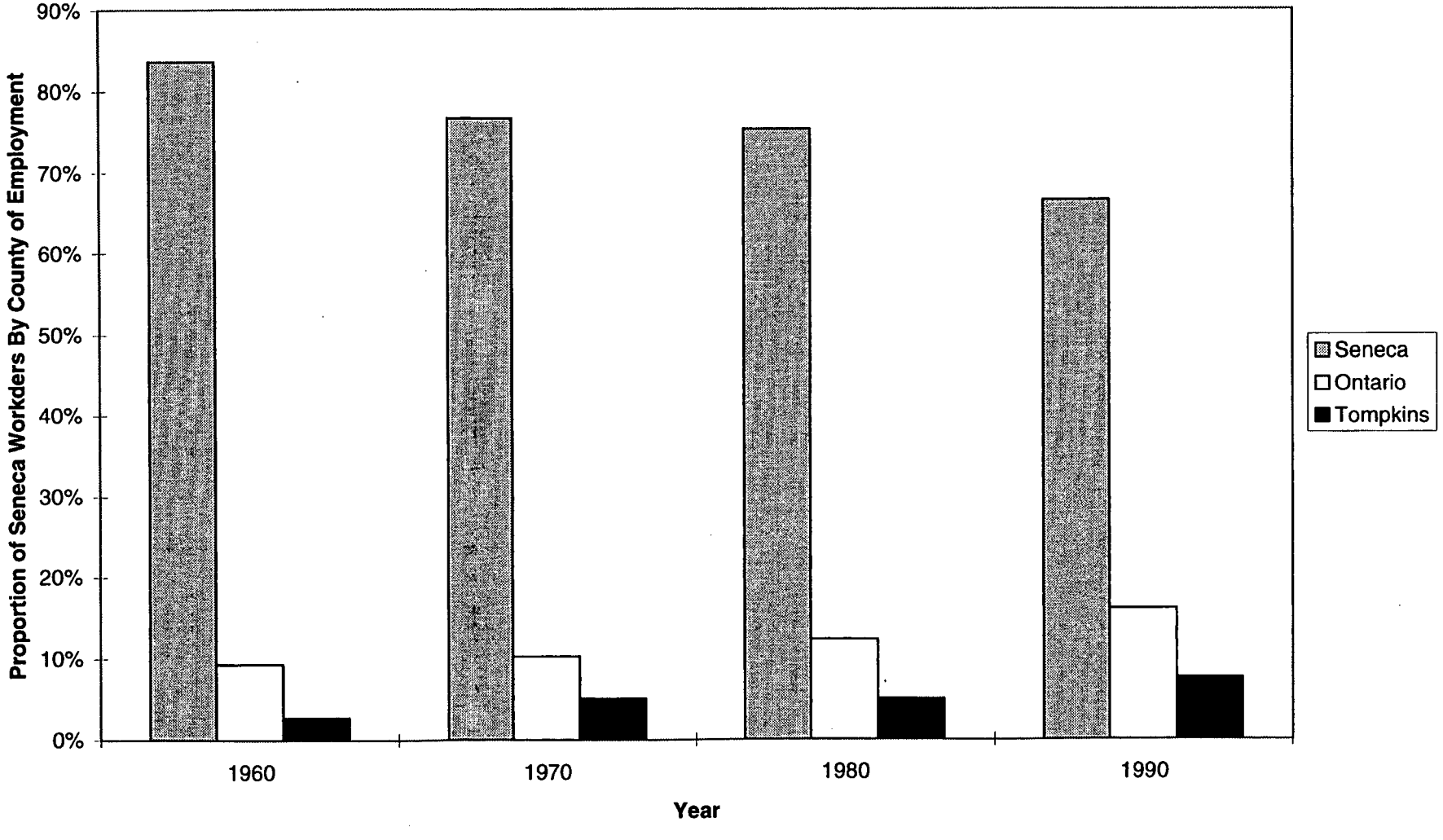


Figure III.1

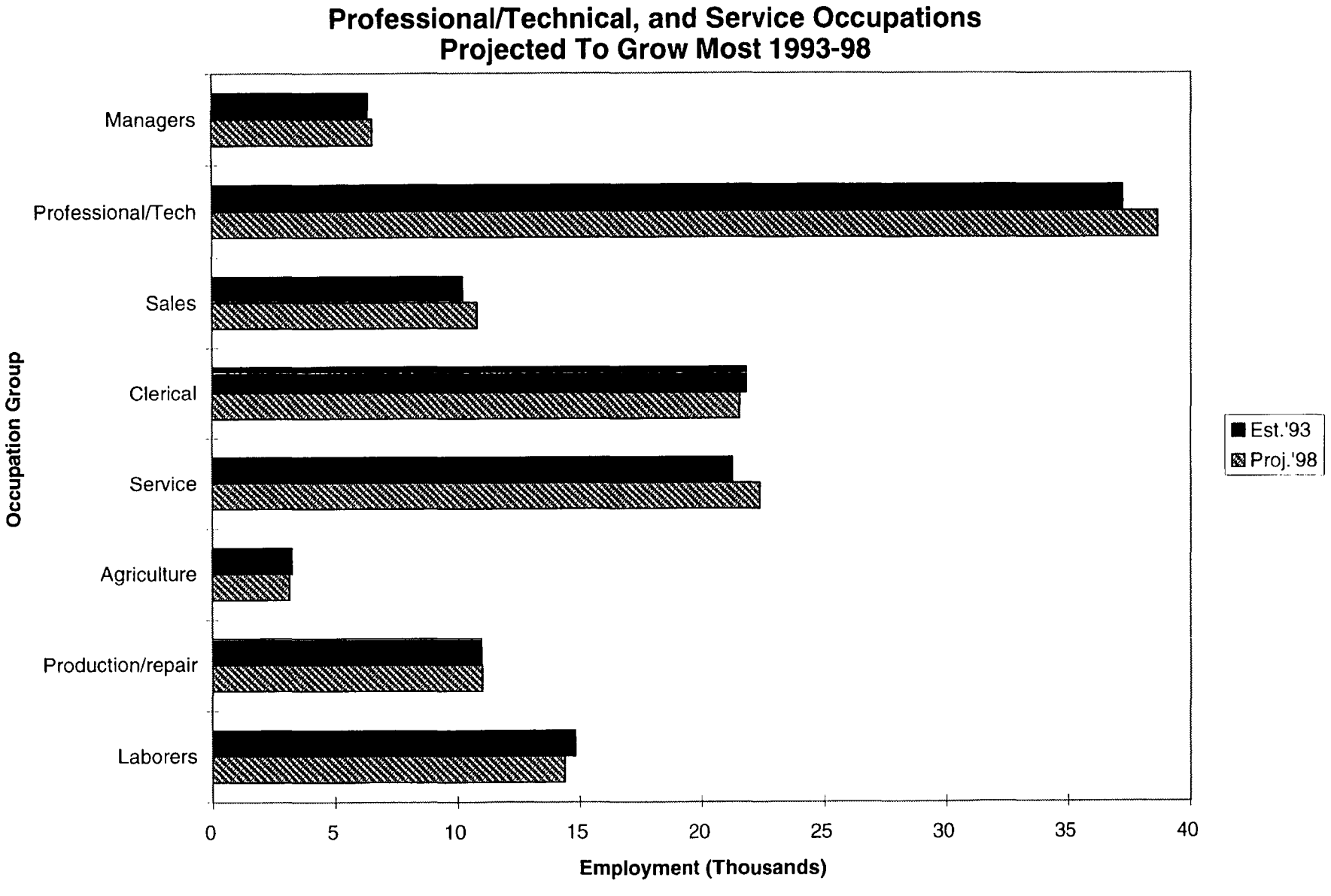

Professional/Technical, and Service Occupations
Projected To Grow Most 1993-98
Occupation Group
Managers
Professional/Tech
Sales
Clerical
Service
Agriculture
Production/repair
Laborers
0
5
10
15
20
25
30
35
40
Employment (Thousands)
Est.'93
Proj.'98

Figure III.2

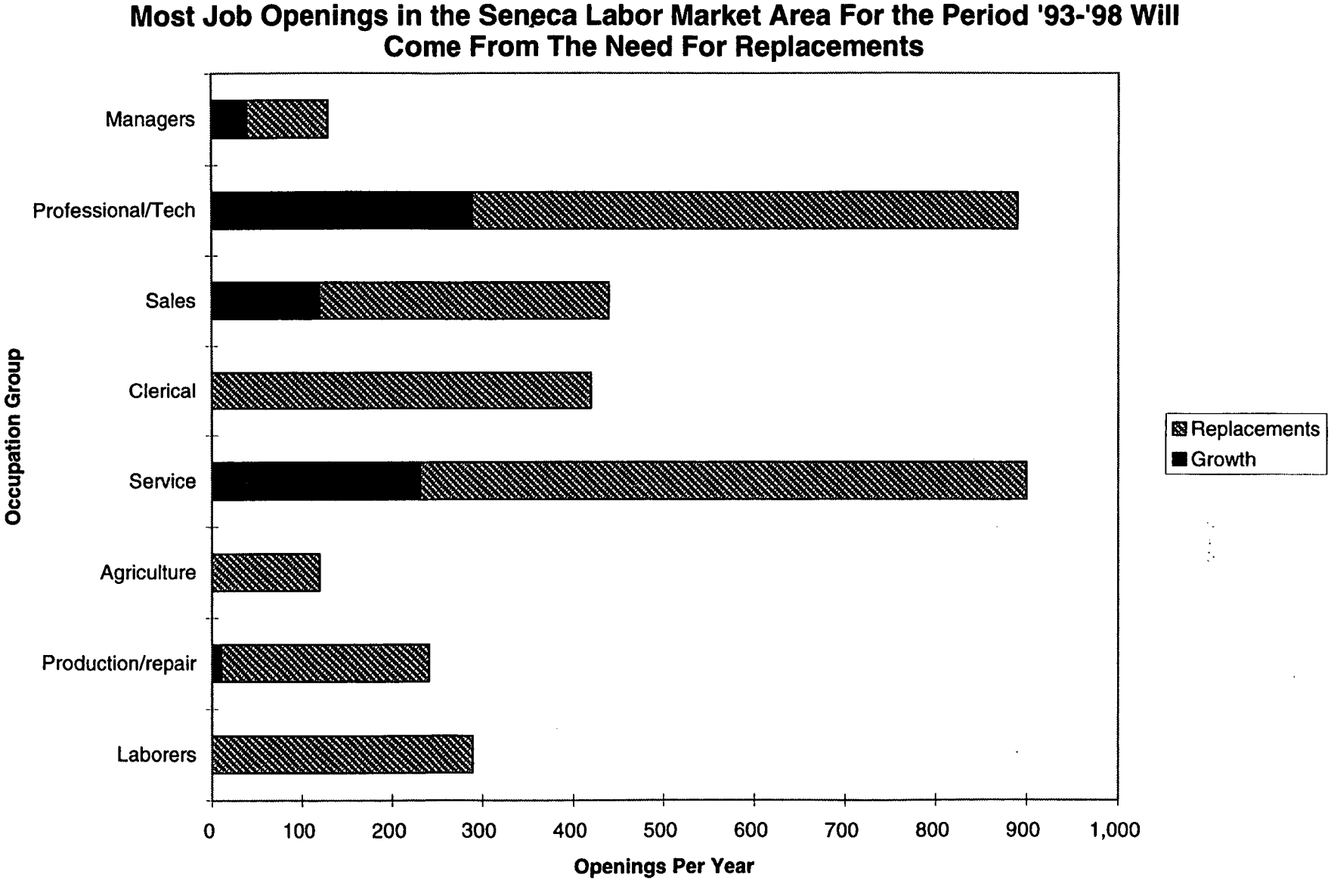

Most Job Openings in the Seneca Labor Market Area For the Period '93-'98 Will Come From The Need For Replacements
Occupation Group
Managers
Professional/Tech
Sales
Clerical
Service
Agriculture
Production/repair
Laborers
0
100
200
300
400
500
600
700
800
900
1,000
Openings Per Year
Replacements
Growth

Figure III.3

Secondary School Teachers and Retail Salespersons Will Be In Greatest Demand

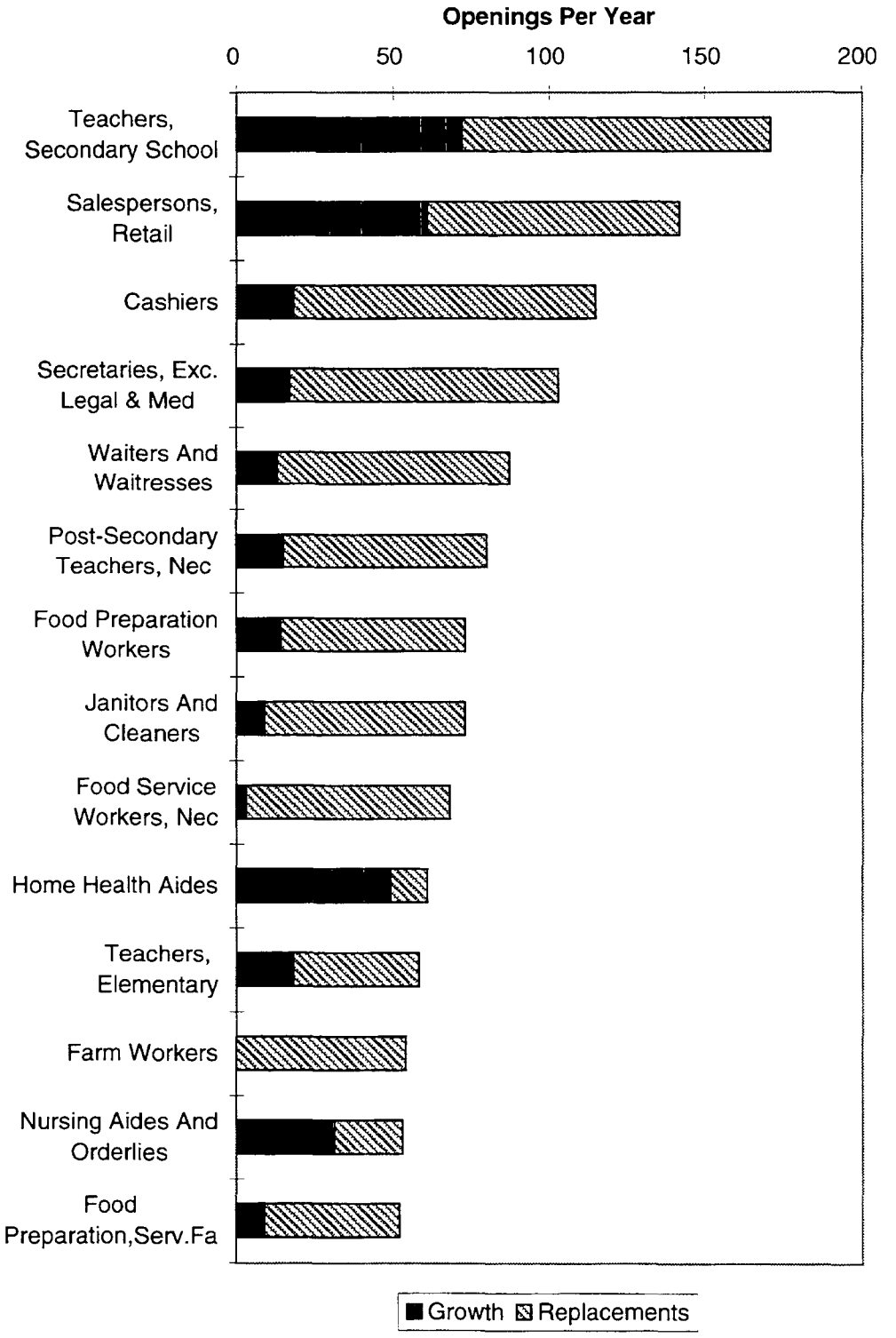


Figure III.4

Growth in Jobs in the Seneca Labor Market Area Has Been Affected By National Booms and Recessions

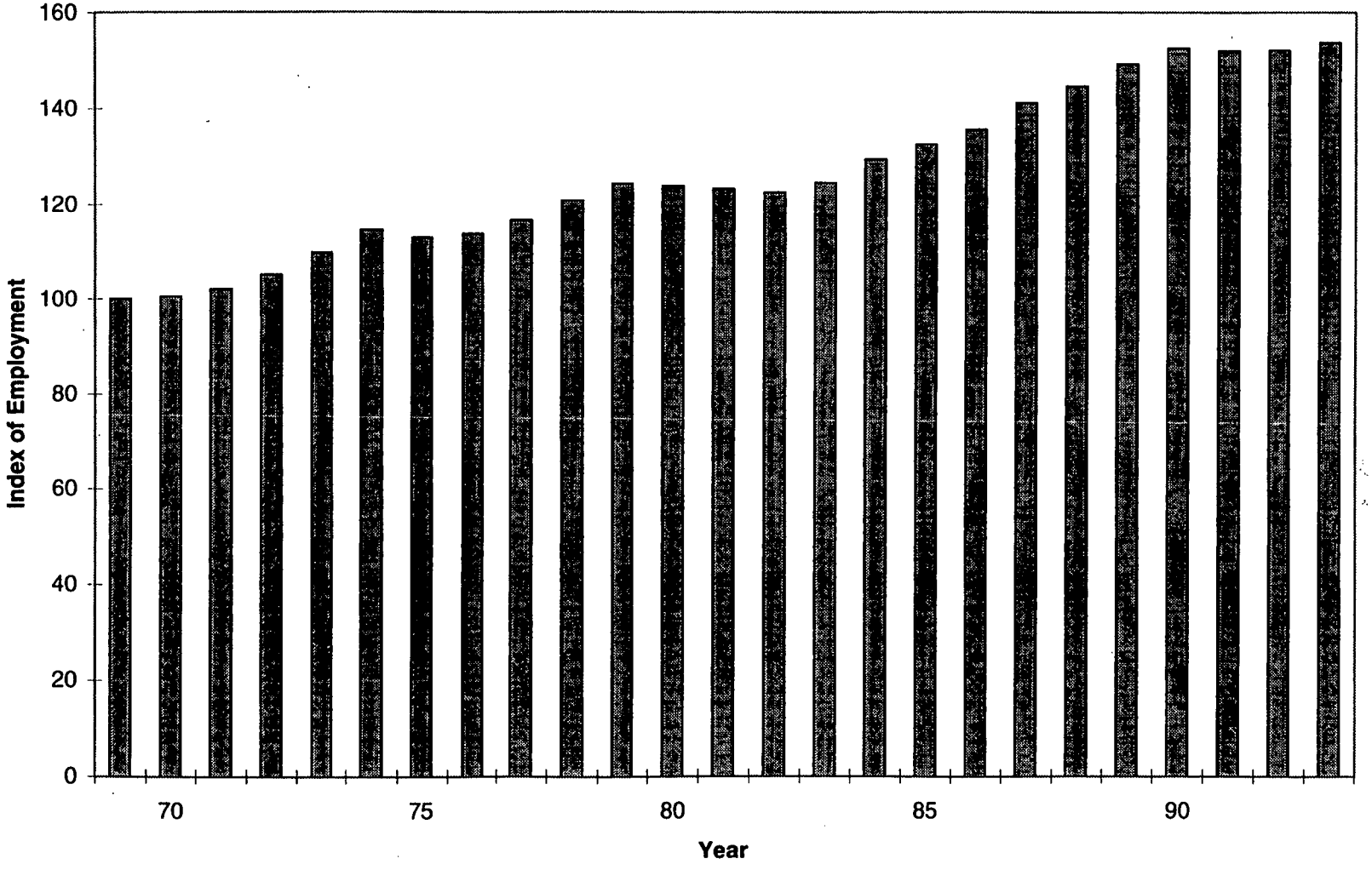


Fig. III.5

Distribution of Jobs by Industry Is Very Similar for Seneca LMA, New York State, and United States

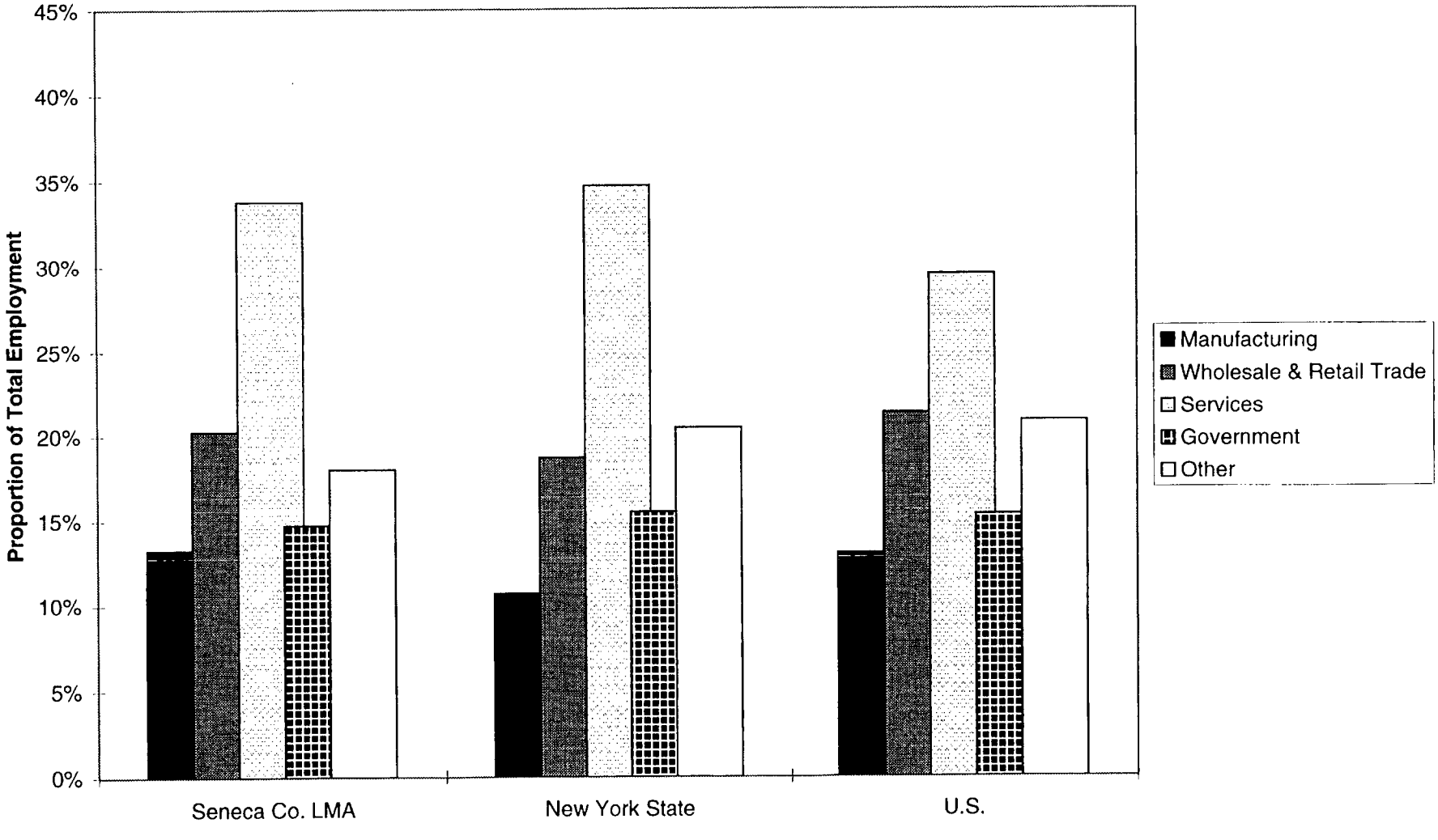


Figure III.6

There Has Been A Downward Trend In Manufacturing Employment In The Seneca Labor Market Since 1979

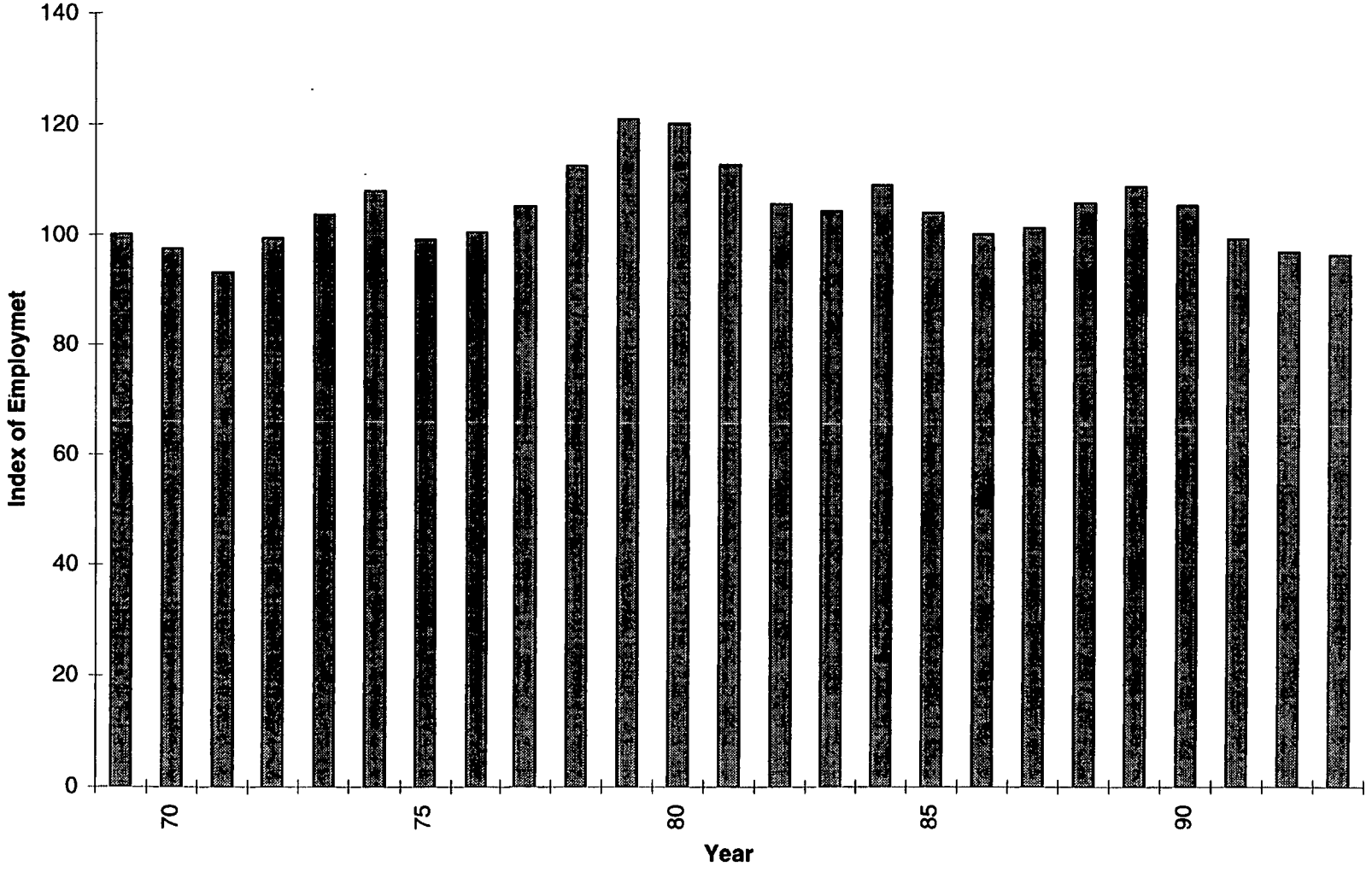


Figure III.7

Employment in Wholesale & Retail Trade In The Seneca Labor Market Is Up More Than 70% Since 1969

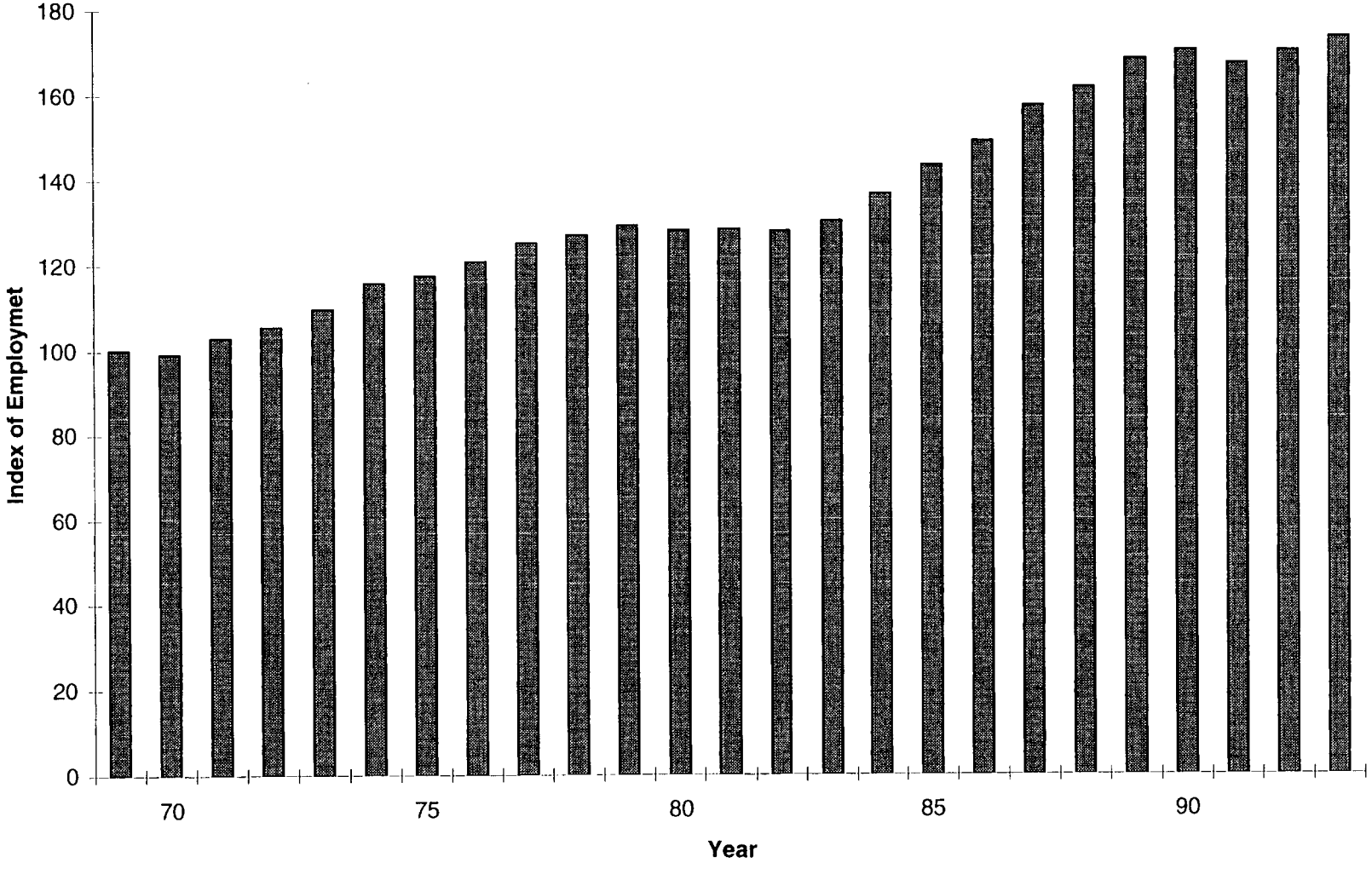


Figure III.8

Employment In the Services Sector of the Seneca Labor Market Area Has Grown More Than 250 Percent In The Past 25 Years

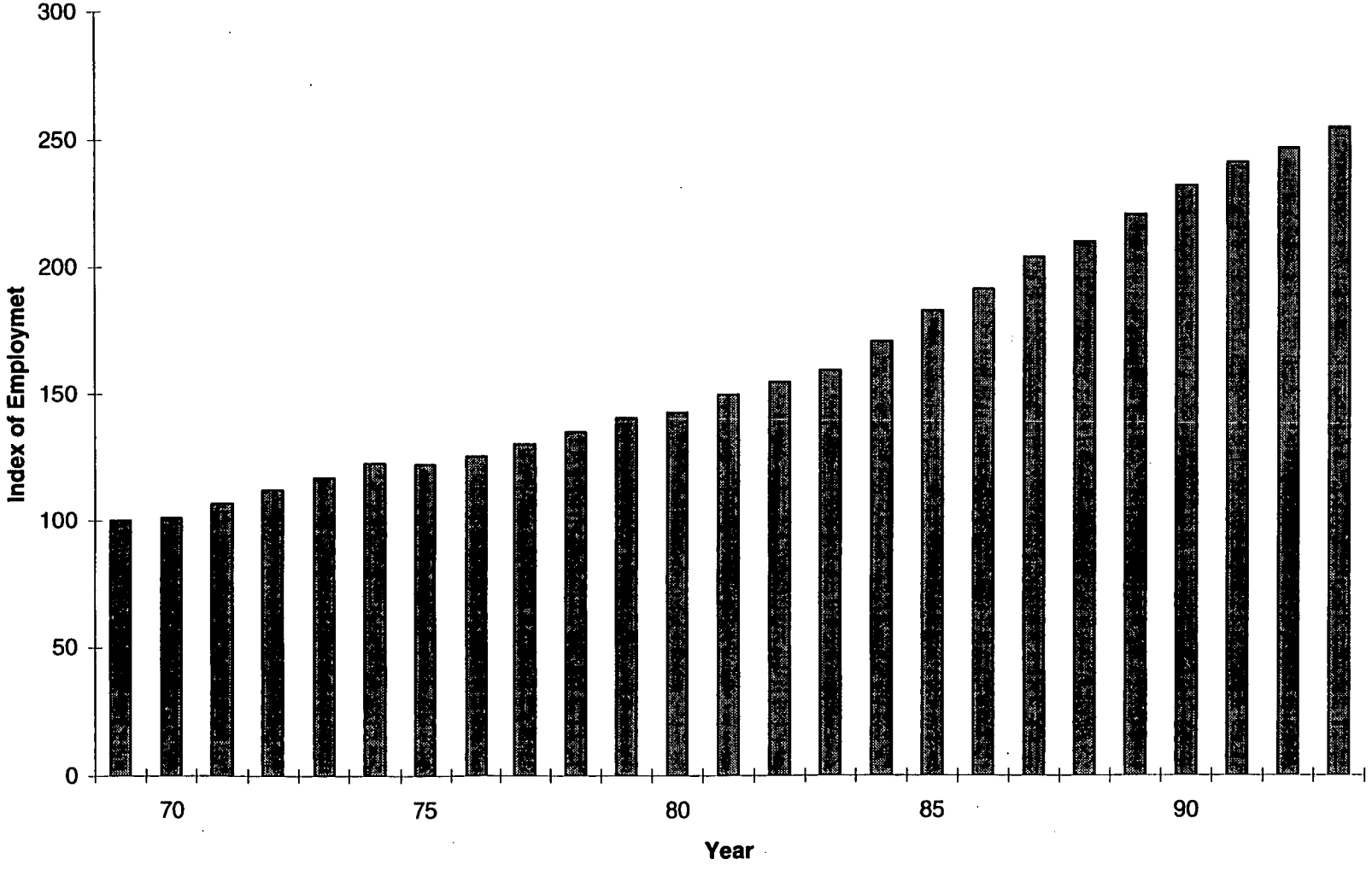


Figure III.9

A Decade Of Growth In Government Employment Has Come To An End In The Seneca Labor Market Area

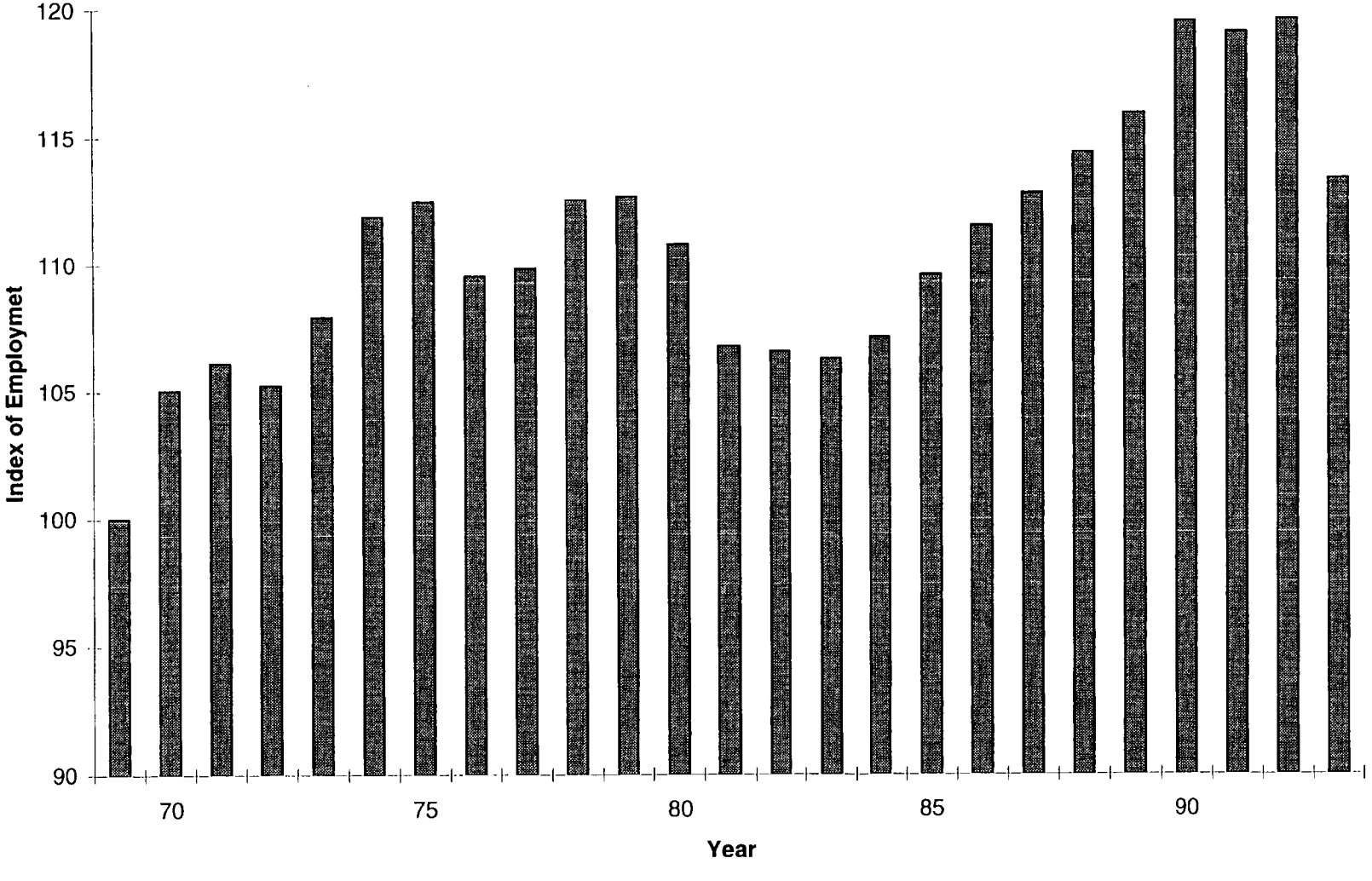


Figure III.10

Changes in Total Employment in the Seneca Labor Market Area Have Closely Matched National Trends for the Past 25 Years

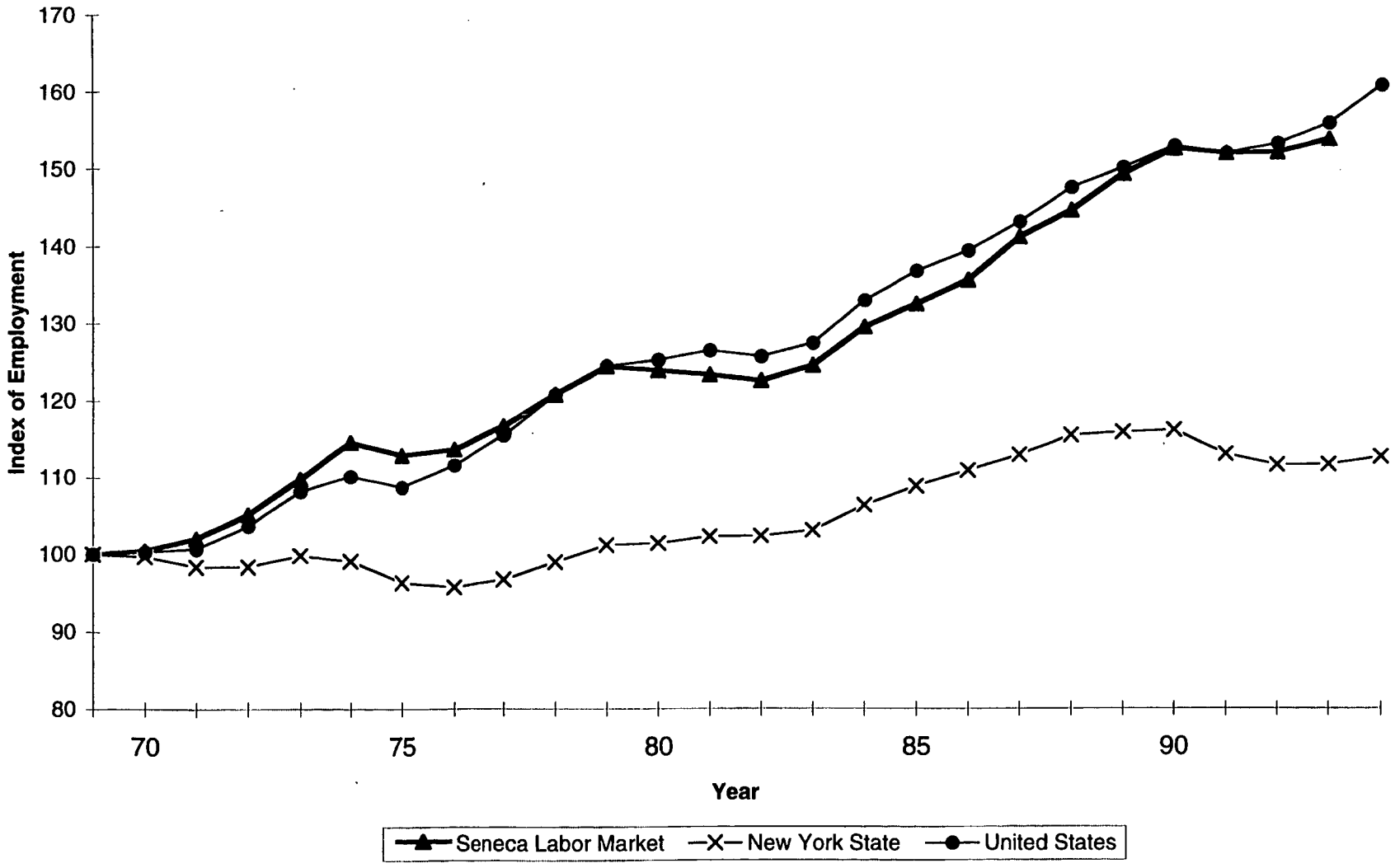


Figure III.11

Employment in Manufacturing in the Seneca Labor Market Area Has Followed National Trends and Outperformed the Statewide Trend

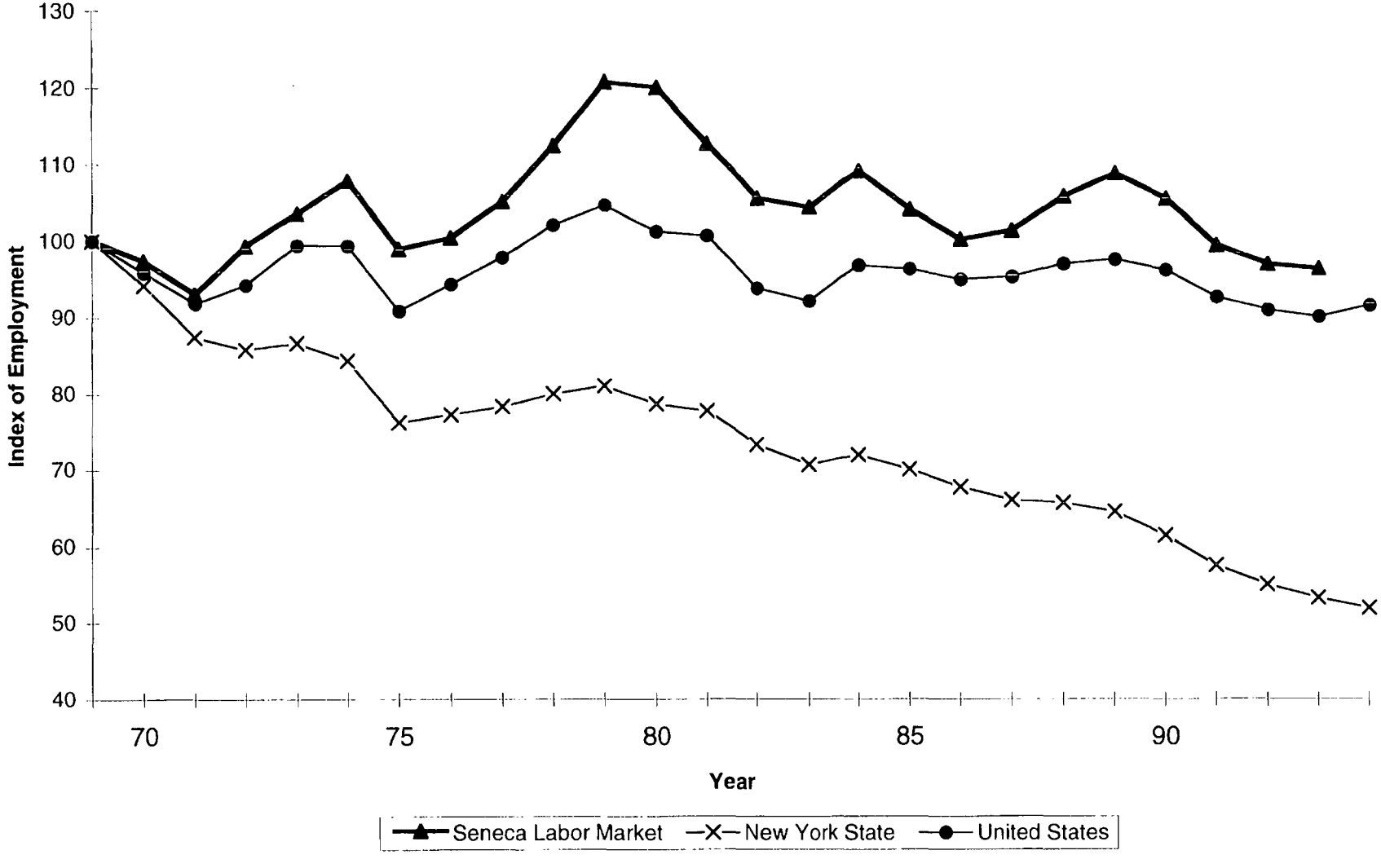


Figure III.12

Trends in Wholesale & Retail Trade Employment for the Seneca Labor Market Area Are Very Similar to the Nation and Far Above the State

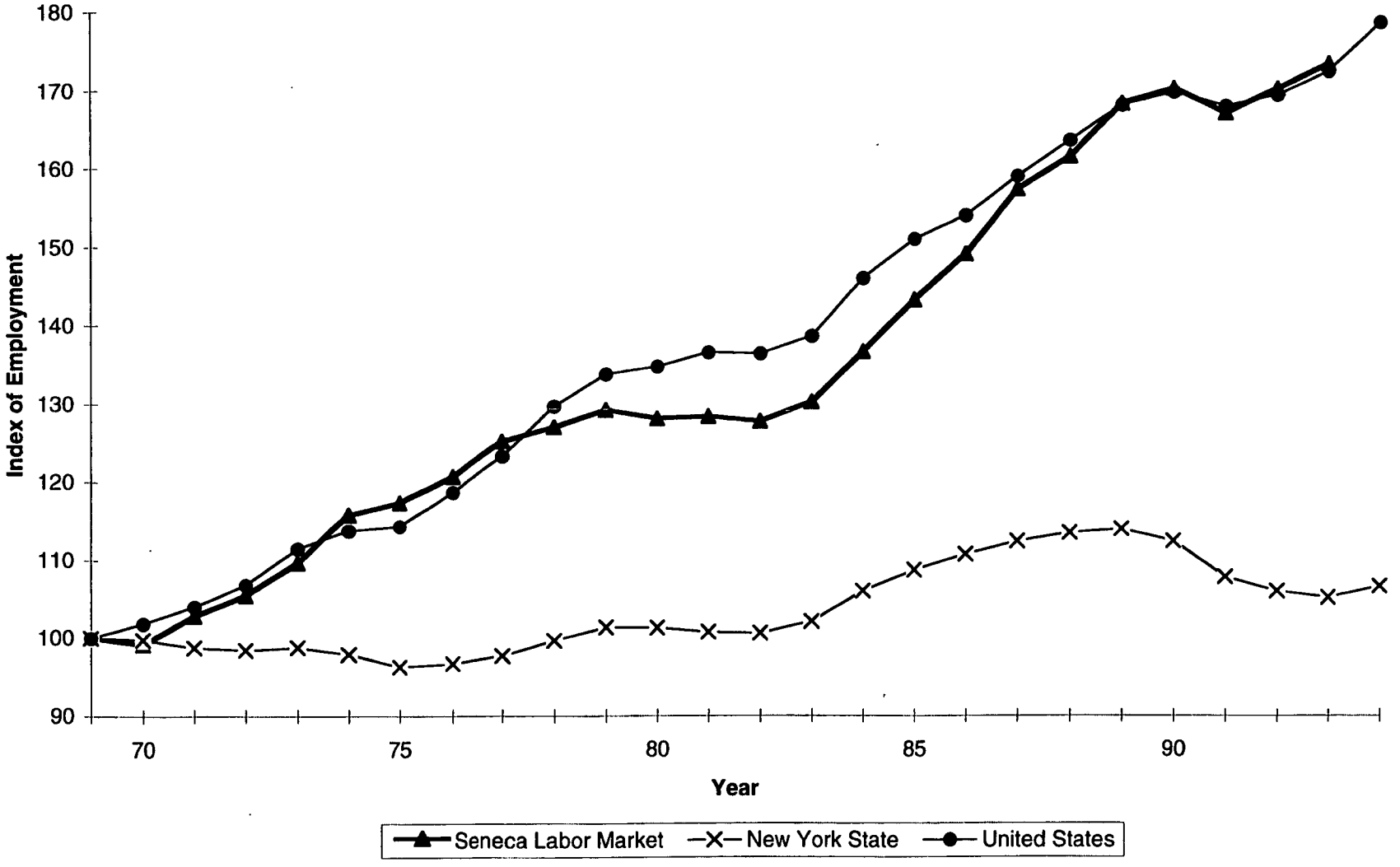


Figure III.13

Employment in Services Sector for the Seneca Labor Market Area Has Grown at the National Rate, Outpacing Statewide Trends

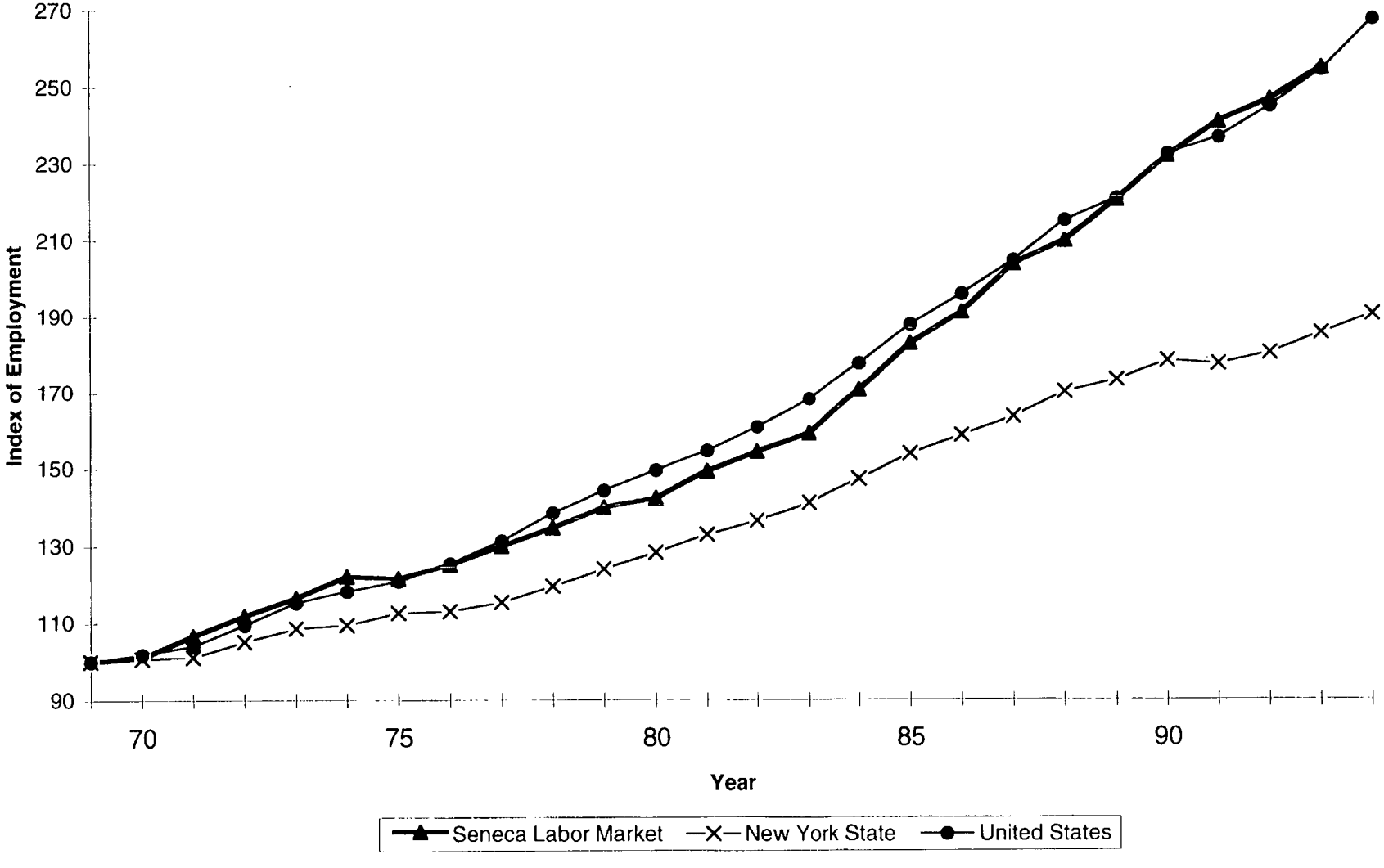


Figure III.14

The Government Sector is the Only Major Industry Group in Which Employment Trends for the Seneca Labor Market Area More Closely Follow Statewide Than National Trends

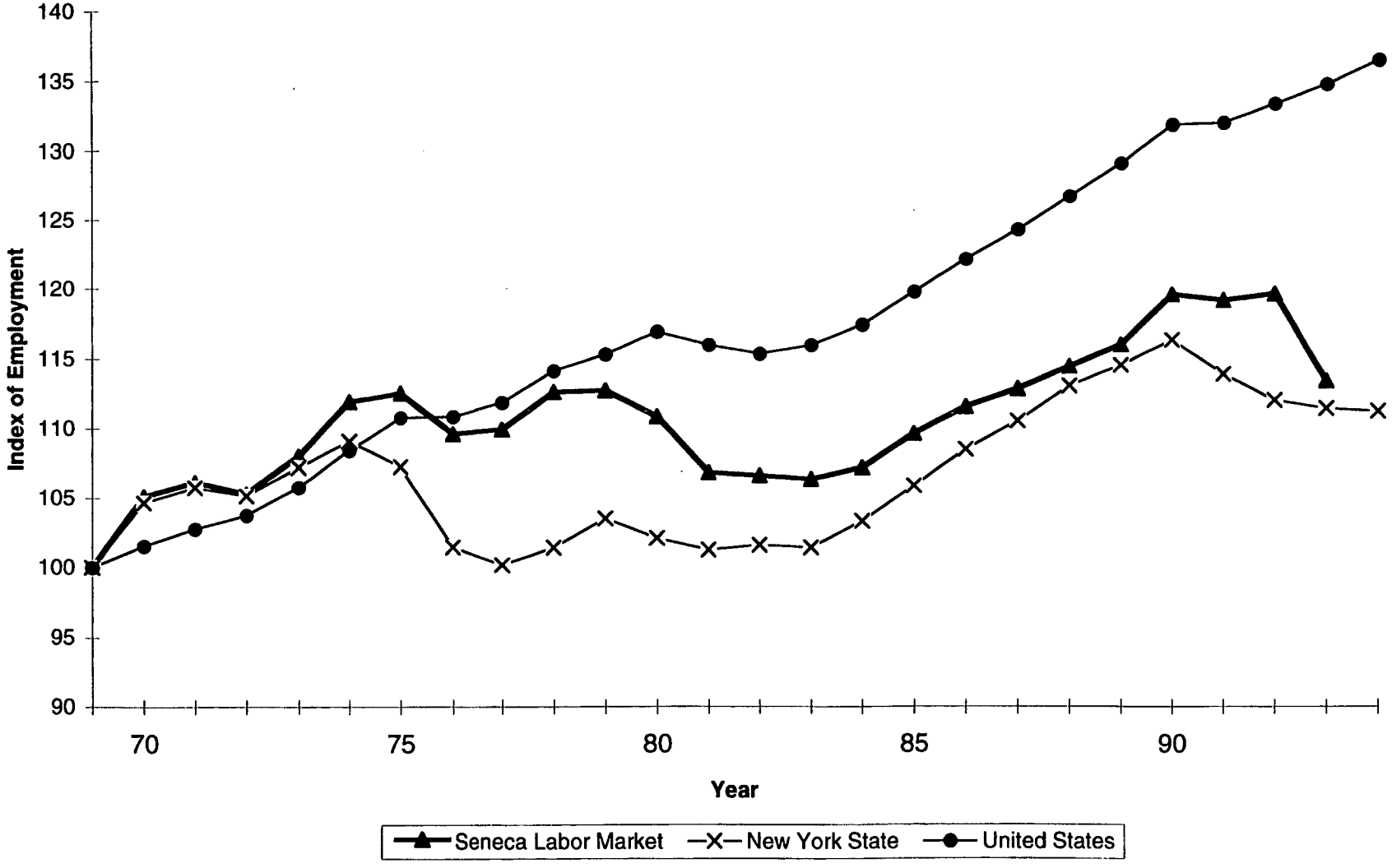


Figure IV.1

From 1971 to 1994 the Population of Seneca County Has Declined By 8%

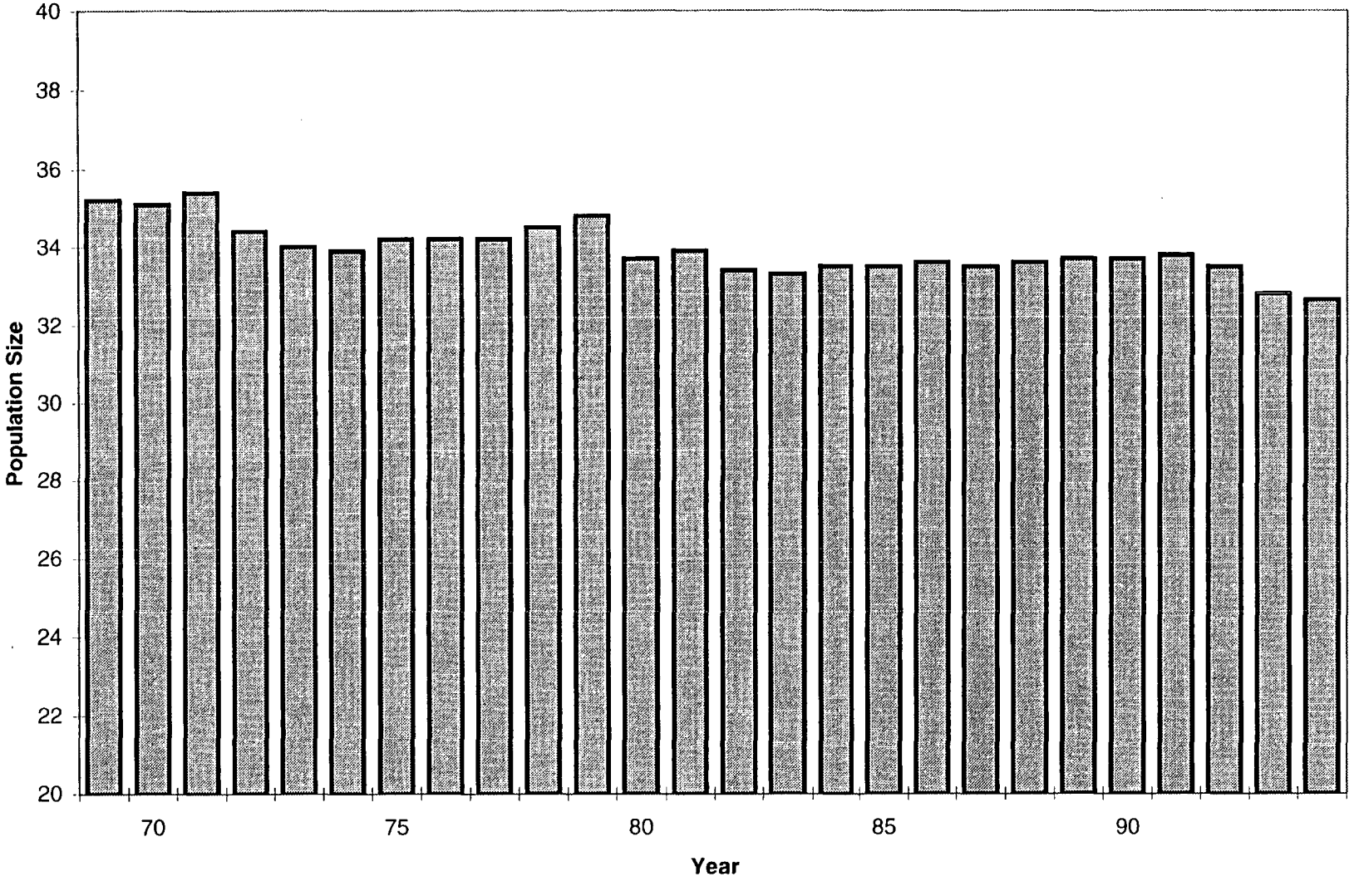


Figure IV.2

Seneca is the Only County in the Labor Market Area to Have Declined in Population Size

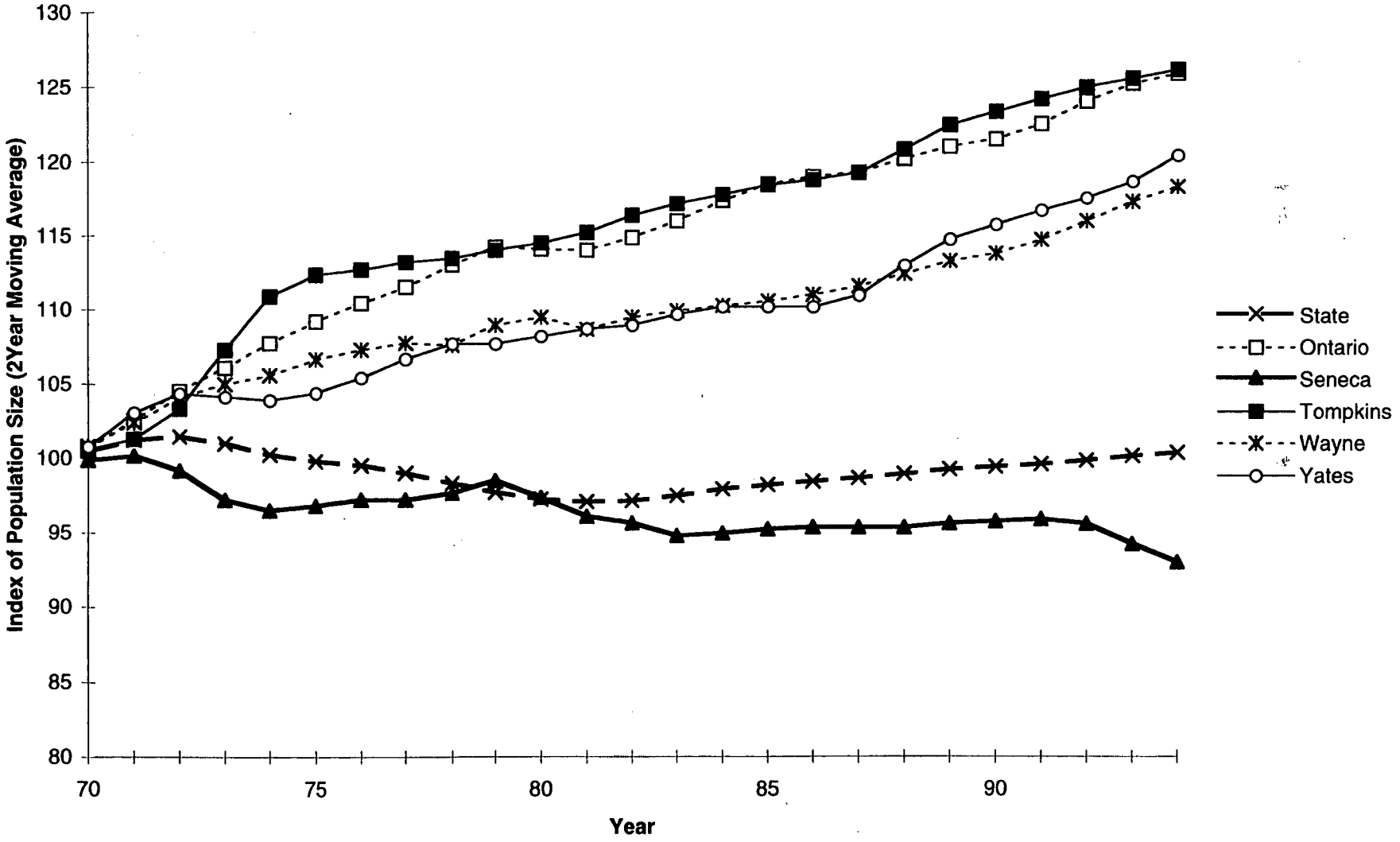


Figure IV.3

Seneca County Has a Relatively High Proportion of Persons Without Any College Education Compared With the Five-County Labor Market Area

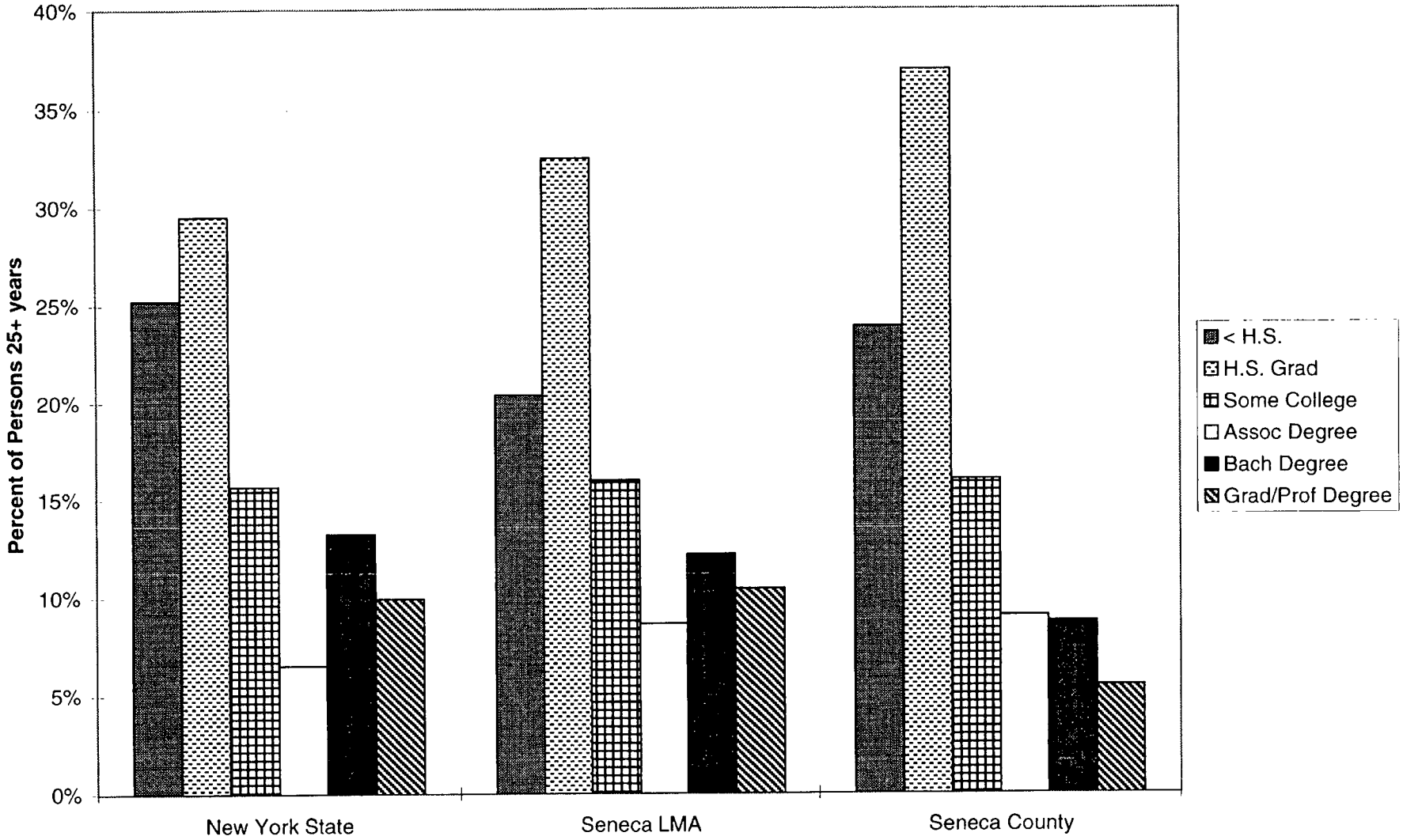


Figure IV.4

The Proportion of Seneca County Adults With Schooling Beyond High School Has Increased Over The Past 20 Years

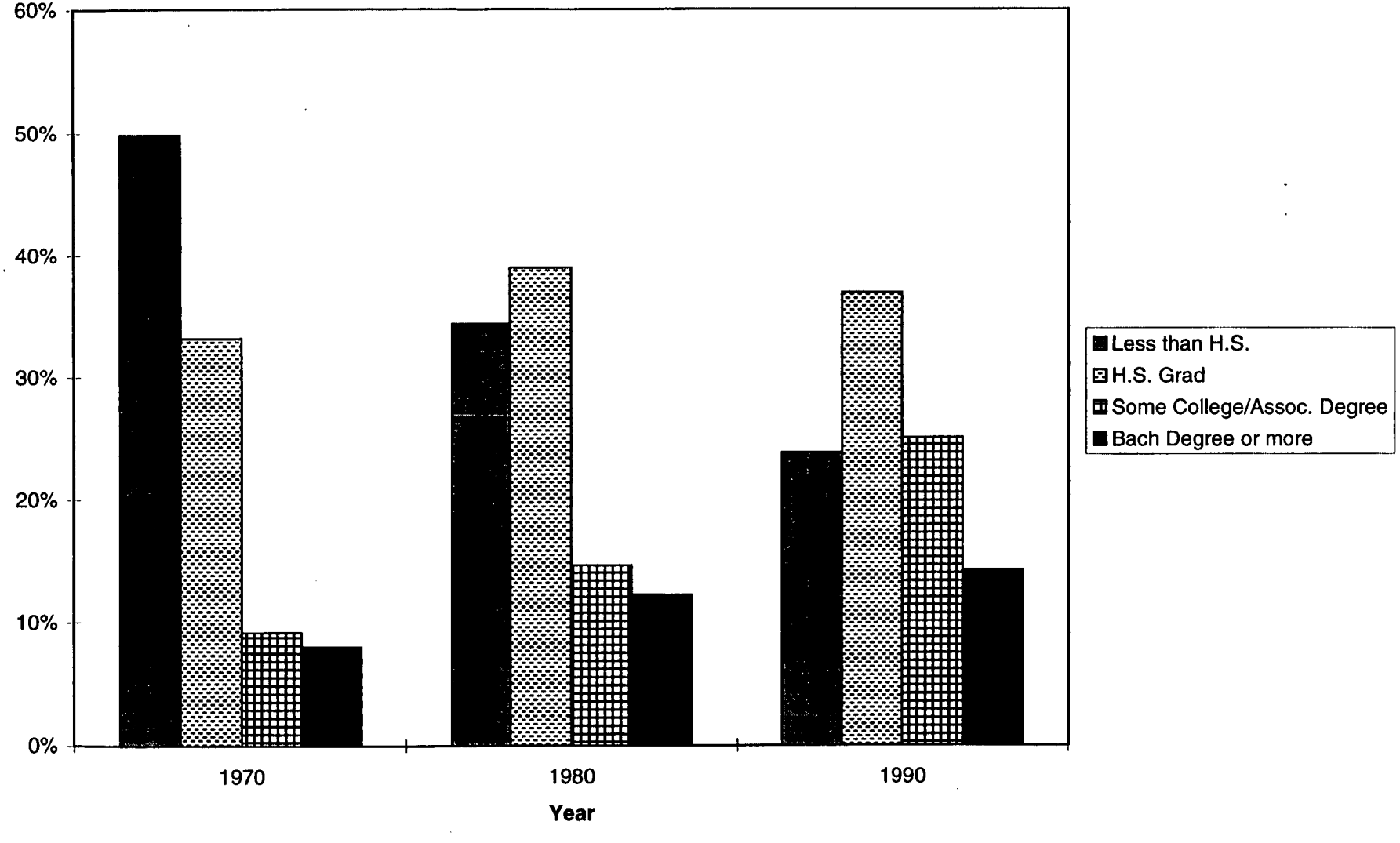


Figure IV.5

A General Increase In Educational Attainment Has Taken Place In New York State Over The Past 20 Years

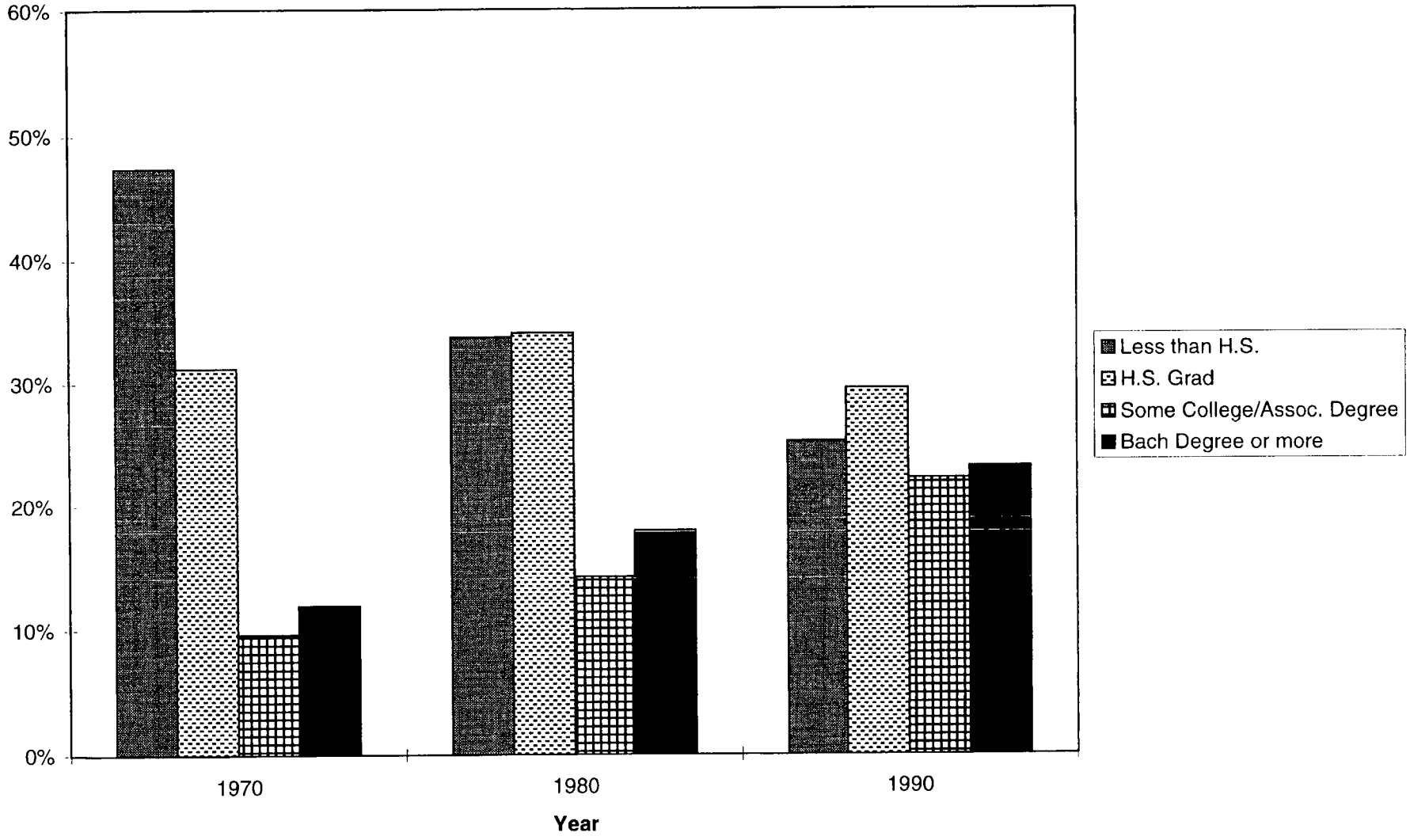


Figure IV.6

The Downsizing of Seneca Army Depot Has Had Little Apparent Impact on County Unemployment Rates

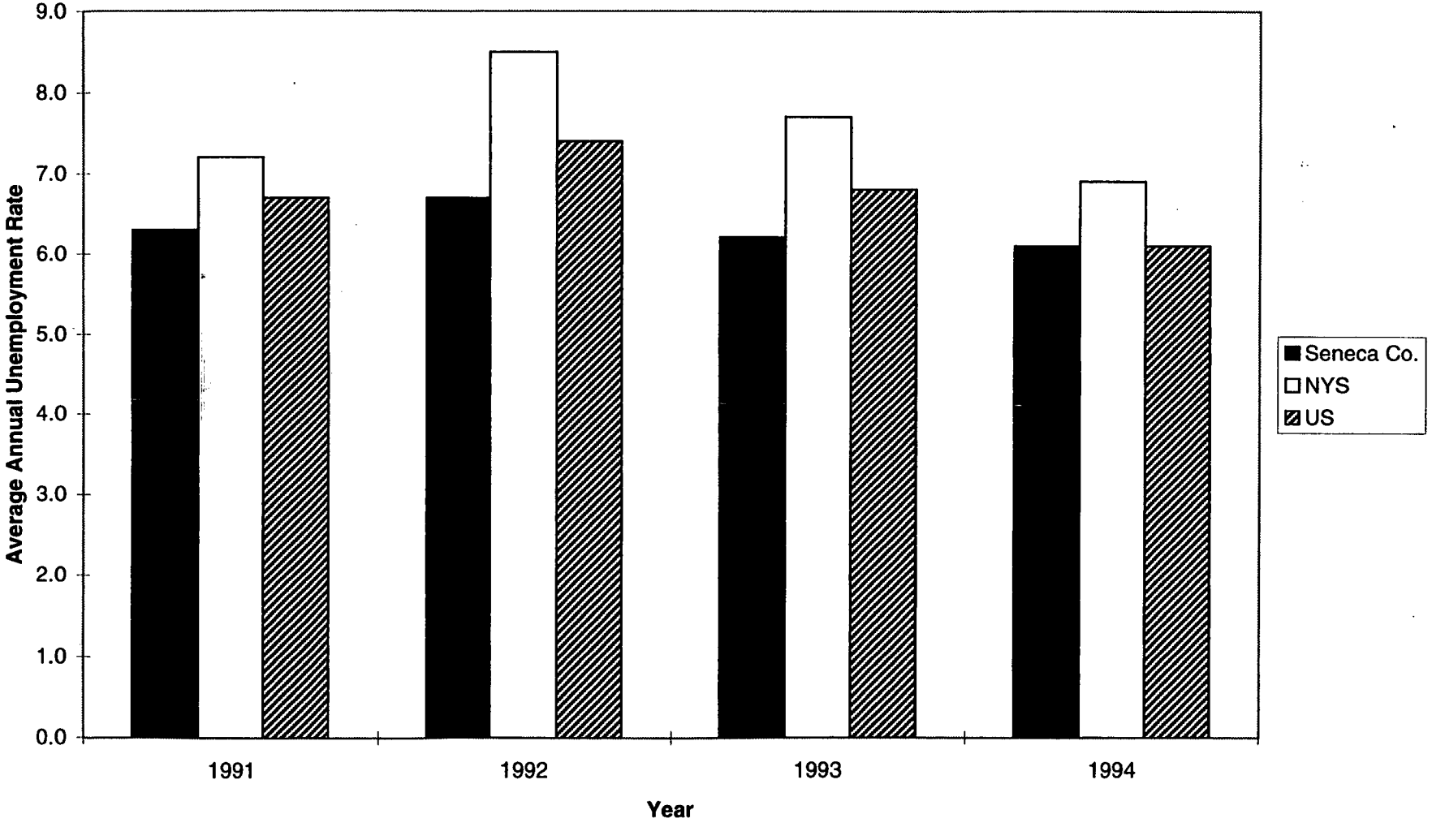


Figure IV.7

In 1990 Relatively High Proportions of Seneca County Residents Worked in Durable Goods Manufacturing, Health Services and Public Administration

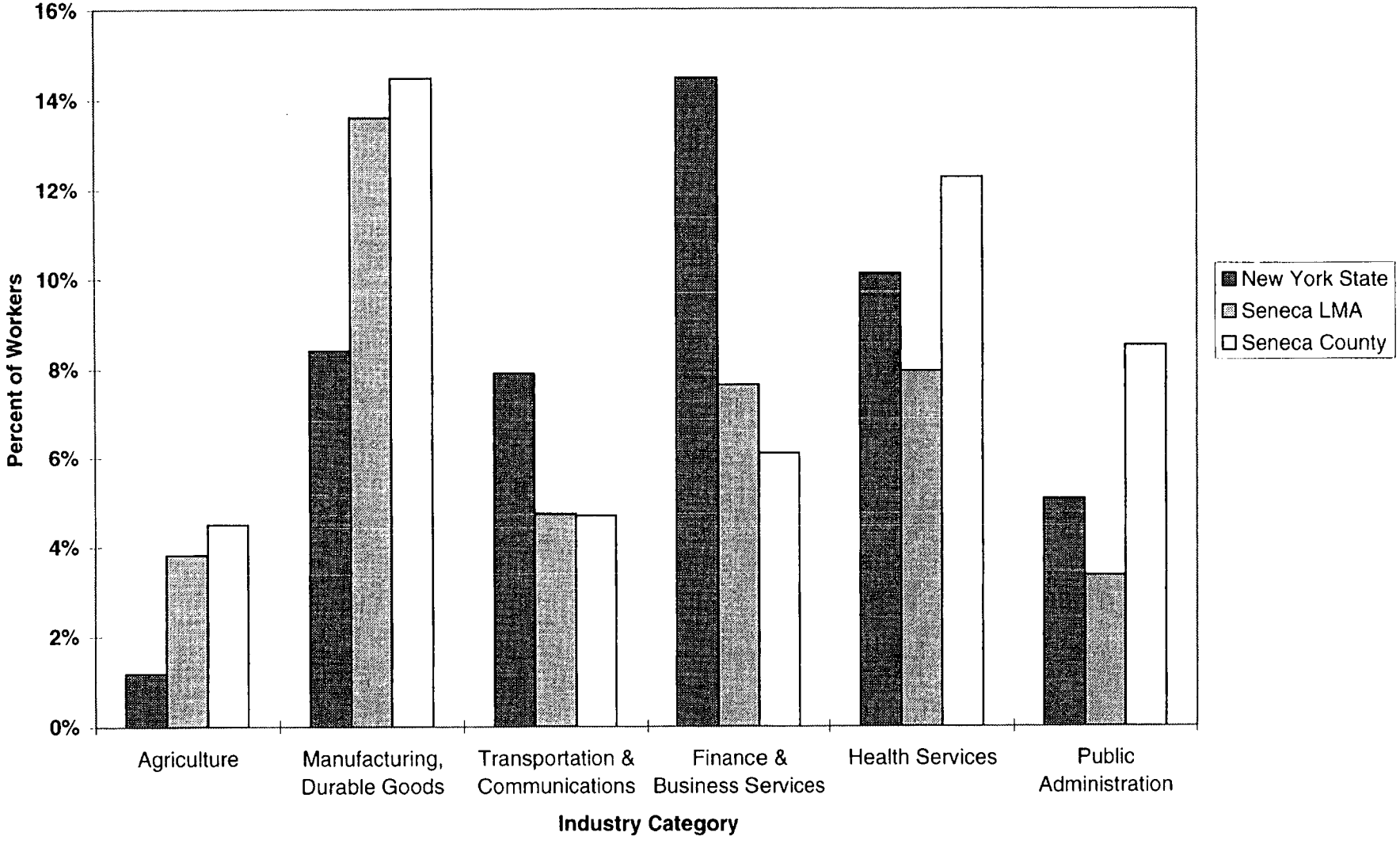
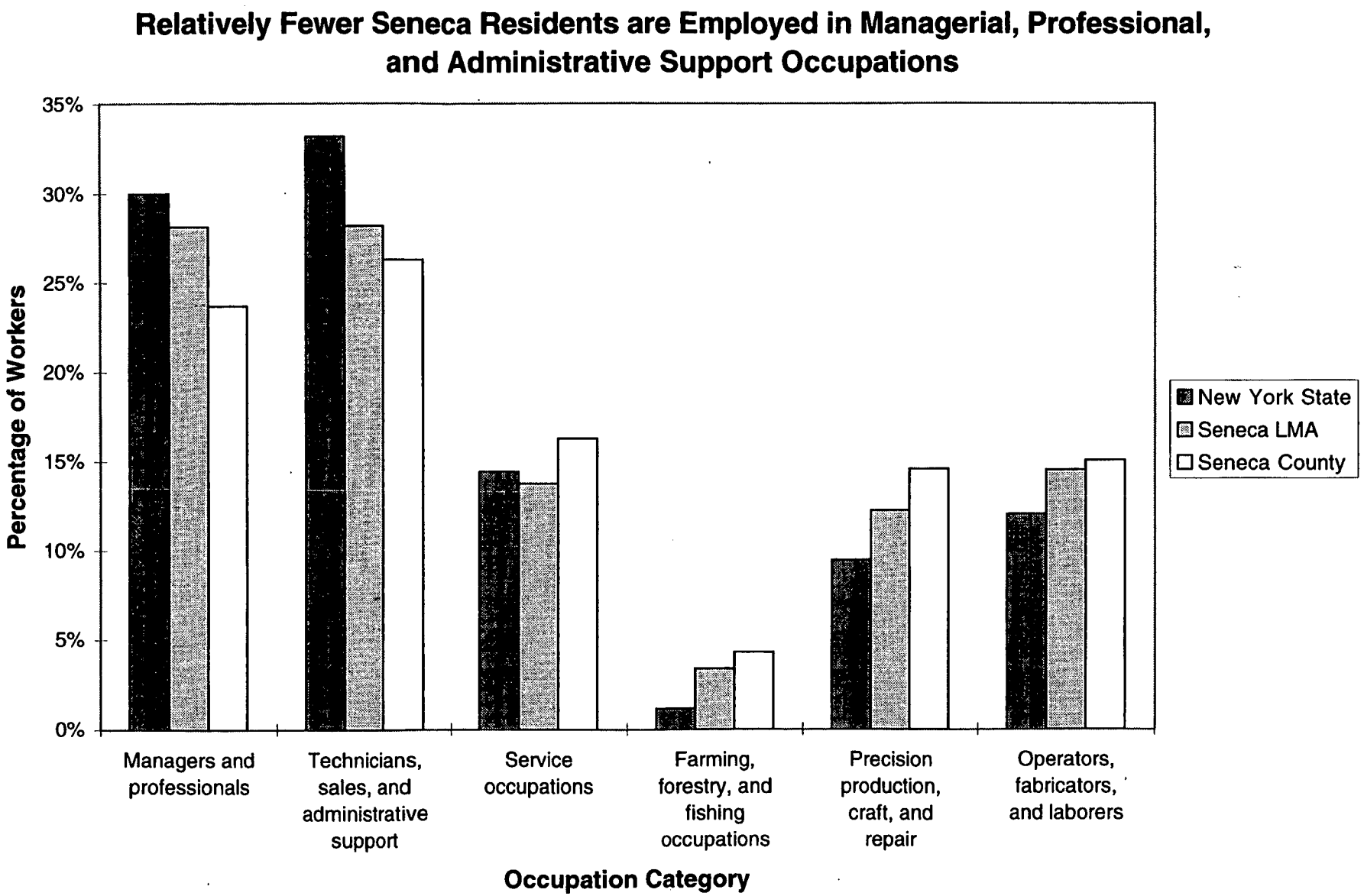
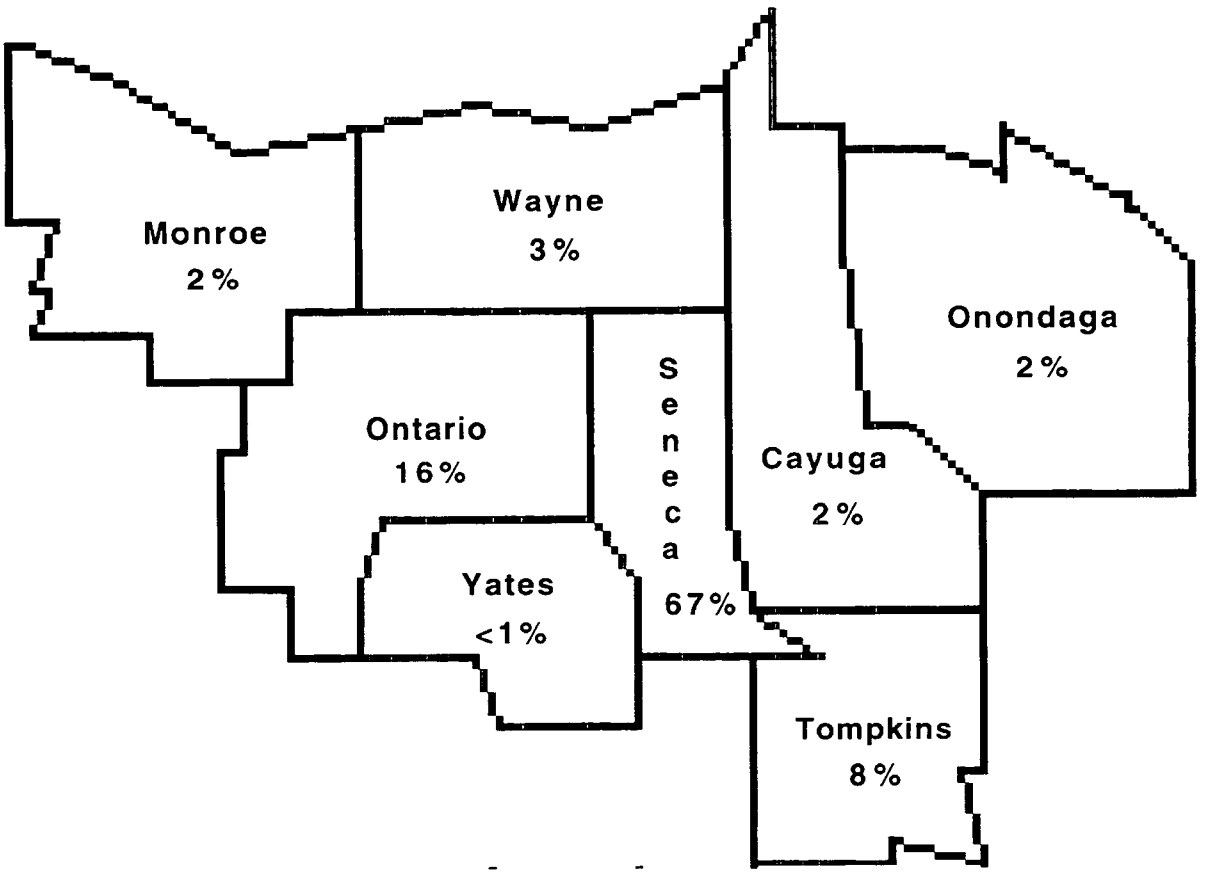


Figure IV.8


Relatively Fewer Seneca Residents are Employed in Managerial, Professional, and Administrative Support Occupations
35%
30%
25%
20%
15%
10%
5%
0%
Percentage of Workers
Managers and professionals
Technicians, sales, and administrative support
Service occupations
Farming, forestry, and fishing occupations
Precision production, craft, and repair
Operators, fabricators, and laborers
Occupation Category
New York State
Seneca LMA
Seneca County

Map I.1

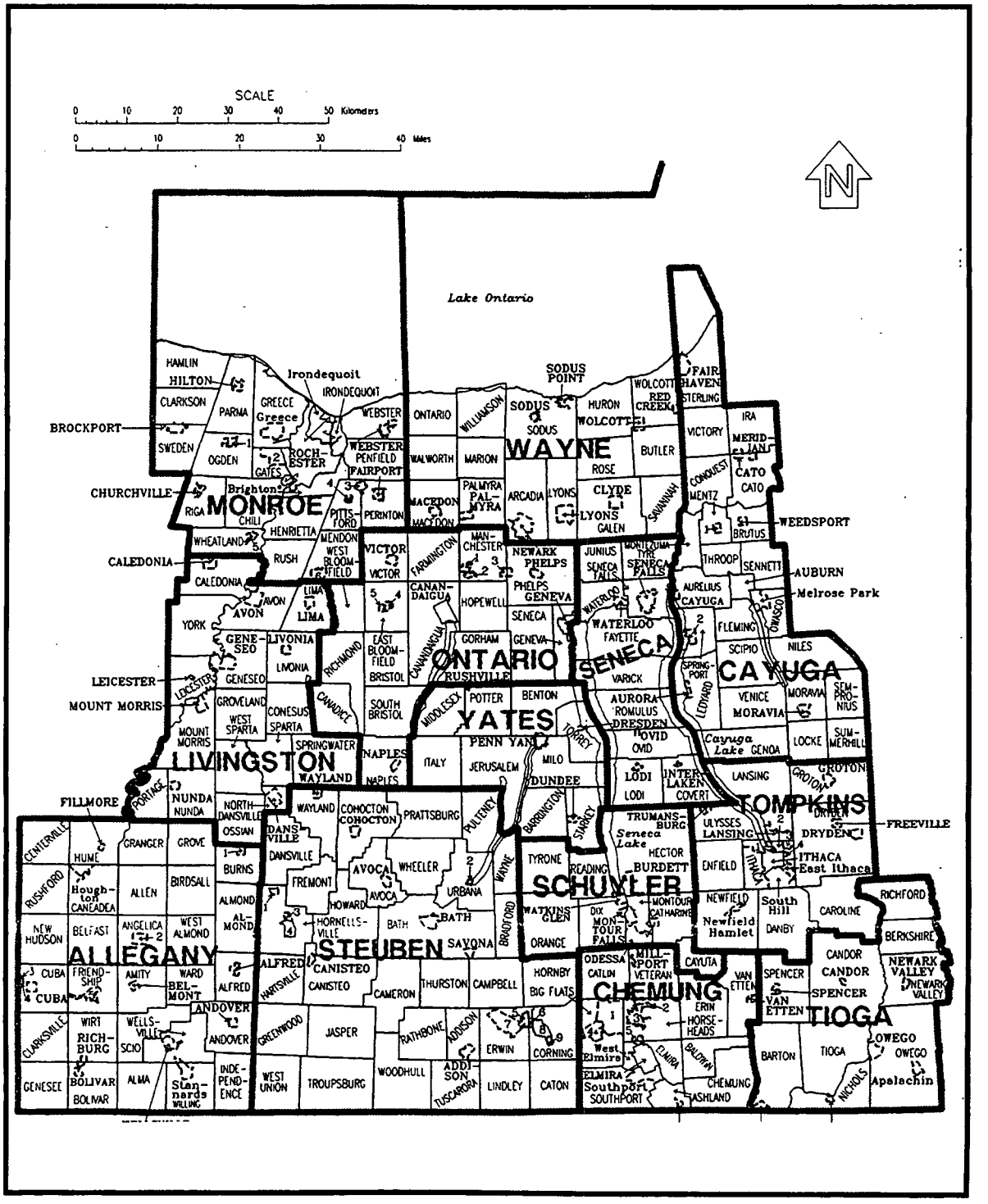
In 1990 Two-thirds of Seneca Residents Worked in the County. For commuters, Ontario and Tompkins Counties were the primary destinations.



Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

Map I.2

Seneca County is Bounded By Cayuga and Seneca Lakes to the East and West



Source: Bureau of the Census, U.S. Department of Commerce

Map I.3

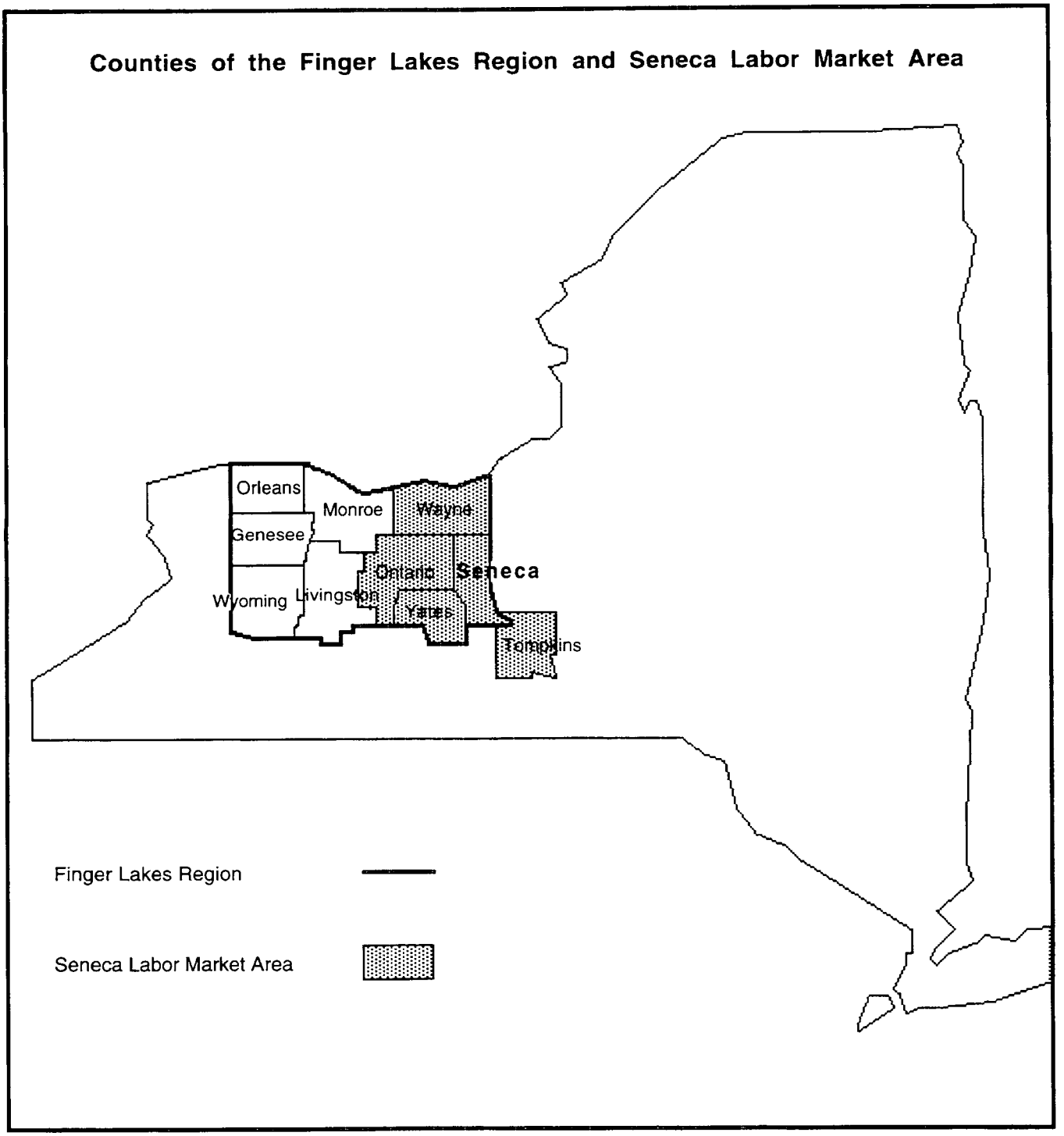

Counties of the Finger Lakes Region and Seneca Labor Market Area
Orleans
Monroe
Wayne
Genesee
Ontario
Seneca
Wyoming
Livingston
Yates
Tompkins
Finger Lakes Region
Seneca Labor Market Area

TABLE I.1: PLACE OF EMPLOYMENT BY COUNTY, 1990

County	Total Resident Workforce	Work Within County of Residence #	%	Rank
MONROE	347,088	335,539	96.7%	1
JEFFERSON	49,101	46,795	95.3%	2
ONONDAGA	223,650	211,937	94.8%	3
ERIE	432,883	409,439	94.6%	4
CLINTON	37,816	35,480	93.8%	5
ST. LAWRENCE	43,121	40,201	93.2%	6
BROOME	97,028	90,057	92.8%	7
CHAUTAUQUA	61,148	56,112	91.8%	8
TOMPKINS	45,175	41,434	91.7%	9
ONEIDA	108,135	97,623	90.3%	10
ALBANY	147,258	124,707	84.7%	11
NEW YORK	754,148	635,761	84.3%	12
CHEMUNG	40,325	33,986	84.3%	13
FRANKLIN	17,587	14,521	82.6%	14
STEUBEN	42,277	34,702	82.1%	15
OTSEGO	26,393	20,911	79.2%	16
CORTLAND	22,588	17,790	78.8%	17
WARREN	26,866	21,130	78.6%	18
DELAWARE	19,754	15,235	77.1%	19
CATTARAUGUS	35,291	27,068	76.7%	20
ESSEX	14,877	11,378	76.5%	21
DUTCHESS	125,726	96,070	76.4%	22
SULLIVAN	29,155	22,115	75.9%	23
NIAGARA	98,239	71,347	72.6%	24
ALLEGANY	20,581	14,939	72.6%	25
CHENANGO	23,080	16,732	72.5%	26
ULSTER	78,739	56,617	71.9%	27
SUFFOLK	652,989	467,796	71.6%	28
HAMILTON	2,128	1,519	71.4%	29
LEWIS	10,937	7,728	70.7%	30
FULTON	23,461	16,183	69.0%	31
OSWEGO	50,706	33,998	67.0%	32
ORANGE	141,664	94,853	67.0%	33
GENESEE	28,266	18,691	66.1%	34
CAYUGA	35,153	23,224	66.1%	35
MONTGOMERY	21,902	14,444	65.9%	36
SENECA	15,565	10,251	65.9%	37
WESTCHESTER	437,753	282,571	64.6%	38
GREENE	18,347	11,784	64.2%	39
COLUMBIA	28,984	18,461	63.7%	40
ONTARIO	46,239	28,332	61.3%	41
SCHOHARIE	13,764	8,423	61.2%	42
HERKIMER	26,906	16,404	61.0%	43

TABLE I.1: PLACE OF EMPLOYMENT BY COUNTY, 1990

County	Total Resident Workforce	Work Within County of Residence #	%	Rank
SCHENECTADY	69,319	41,843	60.4%	44
NASSAU	650,947	387,362	59.5%	45
YATES	9,933	5,877	59.2%	46
WYOMING	17,757	10,477	59.0%	47
ROCKLAND	133,757	74,019	55.3%	48
WASHINGTON	24,998	13,731	54.9%	49
ORLEANS	17,542	9,579	54.6%	50
WAYNE	41,699	22,261	53.4%	51
LIVINGSTON	28,899	15,395	53.3%	52
MADISON	31,913	16,999	53.3%	53
SCHUYLER	8,002	4,016	50.2%	54
KINGS	907,010	450,732	49.7%	55
SARATOGA	90,564	42,579	47.0%	56
RENSSELAER	75,088	34,296	45.7%	57
TIOGA	24,246	10,878	44.9%	58
RICHMOND	174,090	75,428	43.3%	59
BRONX	429,777	178,593	41.6%	60
QUEENS	918,063	365,098	39.8%	61
PUTNAM	44,216	12,874	29.1%	62
ALL COUNTIES	8,220,613	5,426,325	66.0%	

Source: U.S. Bureau of Economic Analysis, Regional Economic Information System

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Total, All Occupations	125,850	128,450	2,600	3,250	520	2,730
Executive,Admin,& Managerial Occ	6,360	6,550	190	130	40	90
Financial Managers	540	560	20	10	0	10
Personnel,Training,Labor Rel.Mgr	150	150	0	0	0	0
Purchasing Managers	120	120	0	0	0	0
Marketing, Adv., Public Rel.Mgrs	380	410	30	10	10	10
Administrative Service Managers	180	180	0	0	0	0
Engineer., Math., Nat. Sci. Mgr.	310	310	0	10	0	0
Education Administrators	810	840	30	20	10	10
Medicine And Health Serv. Mgrs	220	230	10	0	0	0
Industrial Production Managers	170	180	10	0	0	0
Construction Managers	170	180	10	0	0	0
Food Service & Lodging Managers	250	260	10	10	0	0
Gvmt Chief Exec. & Legislators	100	90	(10)	0	0	0
General Managers And Top Exec.	1,450	1,460	10	20	0	20
Managers & Administrators, Nec	1,340	1,380	40	30	10	20
Professional, Paraprofess.,Tech.	37,220	38,670	1,450	890	290	600
Management Support Occupations						
Accountants And Auditors	700	720	20	10	0	10
Financial Specialists, Nec	330	320	(10)	0	0	0
Wholesale, Retail Buyers,Ex.Farm	420	420	0	10	0	10
Purchasing Agent Ex.Who/Ret/Farm	200	200	0	0	0	0
Personnel,Train.,Labor Rel. Spec	310	310	0	10	0	10
Cost Estimators	160	160	0	0	0	0
Management Analysts	170	180	10	0	0	0
Inspectors & Compliance Officers	230	220	(10)	0	0	0
Management Support Occs, Nec	650	630	(20)	10	0	10
Engineers & Related						
Engineers	1,360	1,350	(10)	30	0	30
Civil Engineers, Incl. Traffic	120	120	0	0	0	0
Electrical & Electronic Engineer	280	280	0	10	0	10
Mechanical Engineers	210	220	10	10	0	10
Engineers, Nec	500	490	(10)	10	0	10
Architects And Surveyors	110	110	0	0	0	0
Engineering Technicians	860	860	0	20	0	20
Electrical & Electronic Techn.	380	390	10	10	0	0
Drafters	230	230	0	10	0	10
Engineering Technicians, Nec	120	120	0	0	0	0
Natural Scientists & Related Occ						
Physical Scientists	160	150	(10)	0	0	0
Life Scientists	140	150	10	10	0	0
Phys & Life Science Technicians	190	190	0	10	0	10
Science Technicians, Nec	100	100	0	0	0	0
Computer And Mathematical Occ.	1,090	1,180	90	40	20	20
Systems Analysts	340	390	50	10	10	0
Computer Programmers	570	610	40	20	10	10
Social Scientists	370	400	30	10	10	0
Psychologists	290	320	30	10	10	0
Social, Recreation, Religion Wks	1,770	1,860	90	30	20	20
Social Worker, Med.& Psychiatric	310	320	10	10	0	0
Social Workers, Ex. Med.& Psych.	520	520	0	0	0	0

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Human Services Workers	430	490	60	10	10	0
Recreation Workers	240	250	10	10	0	0
Clergy	210	200	(10)	0	0	0
Law And Related Occupations	710	720	10	10	0	10
Lawyers	500	510	10	10	0	10
Teachers, Librarians, Counselors						
College And University Faculty	3,480	3,610	130	140	30	120
Nursing Instructors	170	180	10	0	0	0
Graduate Assistants, Teaching	440	460	20	20	0	20
Life Science Professors	340	360	20	20	0	10
Social Science Professors	170	180	10	10	0	10
Language Professors	110	120	10	10	0	0
Art, Drama, And Music Professors	120	120	0	10	0	0
Post-Secondary Teachers, Nec	1,890	1,970	80	80	20	70
Teachers And Instructors	11,970	12,660	690	290	140	150
Teachers, Preschool & Kindergartn	880	920	40	10	10	0
Teachers, Elementary	2,530	2,620	90	60	20	40
Teachers, Secondary School	5,500	5,860	360	170	70	100
Teachers, Special Education	1,470	1,600	130	30	30	10
Teachers, Vocational Education	330	340	10	0	0	0
Instructors, Nonvocational Educ.	300	330	30	10	0	0
Instructors And Coaches, Sports	690	710	20	10	10	0
Teachers, Instructors, Nec	240	260	20	0	0	0
Librarians, Archivists & Rel Wks	1,610	1,670	60	40	10	20
Librarians, Professional	400	400	0	10	0	10
Counselors	390	410	20	10	10	10
Instructional Coordinators	180	190	10	0	0	0
Teachers Aides, Paraprofessional	530	570	40	10	10	10
Health Practitioners, Technicians						
Health Treating Practitioners	1,180	1,210	30	40	10	30
Physicians	780	790	10	20	0	20
Dentists	210	230	20	10	0	10
Veterinarians, Vet. Inspectors	110	110	0	0	0	0
Therapists	340	370	30	10	10	10
Health Care Maintenance, Treating	3,180	3,310	130	70	30	40
Registered Nurses	2,090	2,150	60	40	10	30
Licensed Practical Nurses	640	690	50	20	10	10
Pharmacists	150	160	10	10	0	0
Health Technicians, Technologists	1,180	1,240	60	30	10	20
Med./Clinical Lab. Technologists	140	130	(10)	0	0	0
Dental Hygienists	150	170	20	10	10	0
Health Prof., Para, Tech, Nec	450	460	10	10	0	0
Writer, Artist, Enter., Athlete						
Writers And Editors	340	330	(10)	10	0	10
Public Relations Specialists	150	160	10	10	0	10
Artists And Commercial Artists	250	250	0	10	0	10
Designers, Exc. Interior Design.	260	270	10	10	0	0
Musicians, Instrumental	140	160	20	10	0	0
Prod., Direct., Actors, Entertainer	300	350	50	20	10	10
Professional Occupations, Nec						
Prof., Paraprof., Techn., Nec	1,990	1,990	0	20	0	20

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Marketing & Sales Occupations	10,210	10,800	590	430	120	320
Sales Supervisors	1,840	1,970	130	50	30	30
Sales Occupations, Services						
Insurance Sales Workers	230	210	(20)	10	0	10
Sales Agents, Real Estate	100	110	10	0	0	0
Sales Agents, Business Services	140	150	10	0	0	0
Sales Occupations, Goods						
Sales Engineers	150	140	(10)	0	0	0
Sales Reps,Scientif.Prod.Exc.Ret	350	340	(10)	10	0	10
Sales Reps, Exc. Retail, Nec	1,500	1,480	(20)	30	0	30
Salespersons, Retail	2,050	2,350	300	140	60	80
Salespersons, Parts	270	270	0	10	0	10
Counter And Rental Clerks	130	150	20	10	0	0
Stock Clerks, Sales Floor	850	890	40	40	10	30
Cashiers	1,850	1,940	90	120	20	100
Vendors,Solicitors,Door-To-Door	260	290	30	10	10	10
Sales & Related Occs, Nec	200	200	0	10	0	0
Admin. Support Occ., Clerical	21,770	21,510	(260)	420	0	420
Clerical Supervisors	1,250	1,250	0	30	0	30
Industry Specific Support Occ.						
Banking,Security,Finance,Credit	640	600	(40)	20	0	20
Bank Tellers	210	180	(30)	10	0	10
Adjustment Clerks	200	200	0	0	0	0
Selected Insurance Workers	440	400	(40)	0	0	0
Insurance Adjusters,Investigator	130	120	(10)	0	0	0
Insurance Claims Clerks	150	130	(20)	0	0	0
Insurance Policy Process. Clerks	140	130	(10)	0	0	0
Investigative & Related Workers	280	270	(10)	10	0	10
Welfare Eligibility Workers	160	150	(10)	10	0	10
Bill And Account Collectors	110	110	0	0	0	0
Municipal Workers	100	100	0	0	0	0
Lodging And Travel Workers	170	190	20	10	0	0
Other Industry Specific Workers	1,690	1,770	80	50	10	40
Library Assistants & Bookmobile	420	420	0	20	0	20
Teacher Aides & Educ. Assistants	1,210	1,290	80	30	20	20
Secretarial & General Office Occ						
Legal Secretaries	160	180	20	10	0	0
Medical Secretaries	240	280	40	10	10	10
Secretaries, Exc. Legal & Med	3,730	3,810	80	100	20	90
Stenographers	150	140	(10)	0	0	0
Receptionists,Information Clerks	760	820	60	30	10	10
Typists, Incl. Word Processing	940	840	(100)	20	0	20
Personnel Clerks, Except Payroll	110	110	0	0	0	0
File Clerks	250	240	(10)	10	0	10
Order Clerks: Materials, Service	270	270	0	10	0	10
Bookkeeping & Account & Auditing	2,070	1,950	(120)	40	0	40
Payroll And Timekeeping Clerks	130	130	0	0	0	0
Billing, Cost And Rate Clerks	290	280	(10)	10	0	10
Clerks, General Office	2,690	2,700	10	40	0	40

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Elec Data Proc & Off Machine Occ						
Computer Operators, Exc. Periph.	200	190	(10)	0	0	0
Data Entry Keyers, Ex. Composing	360	340	(20)	10	0	10
Communications, Mail, Distrib.						
Switchboard Operators	180	170	(10)	10	0	10
Mail Clerks, Exc. Mail Machine	130	120	(10)	10	0	10
Postal Mail Carriers	160	130	(30)	0	0	0
Messengers	230	220	(10)	10	0	10
Mat. Record., Sched., Dist. Occ.						
Dispatcher:Exc. Pol.,Fire,Amb.	110	120	10	0	0	0
Production, Expediting Clerks	240	240	0	10	0	10
Stock Clerks:Stockroom Or Wareh.	630	630	0	10	0	10
Order Fillers, Sales	170	170	0	0	0	0
Traffic, Shipping, & Rec. Clerks	700	680	(20)	10	0	10
Clerical Occupations, Nec	1,580	1,510	(70)	10	0	10
Service Occupations	21,230	22,370	1,140	900	230	670
Service Supervisors						
Service Supervisors, Nec	740	770	30	20	10	10
Private Household Occupations						
Child Care Wkrs., Pvt. Household	100	100	0	10	0	10
Cleaners & Servants, Pvt. House.	150	160	10	0	0	0
Protective Service Occupations						
Fire Fighters	210	200	(10)	10	0	10
Police Detectives	110	110	0	0	0	0
Police Patrol Officers	610	600	(10)	20	0	20
Correction Officers And Jailers	510	540	30	10	10	10
Guards	700	720	20	20	0	20
Food & Beverage Service Occ.						
Hosts & Hostesses: Rest., Lounge	120	130	10	0	0	0
Bartenders	400	400	0	10	0	10
Waiters And Waitresses	1,520	1,580	60	90	10	70
Food Servers	130	120	(10)	20	0	20
Dining Room & Bartender Helpers	420	450	30	40	10	40
Counter Attendants	210	220	10	30	0	30
Butchers And Meat Cutters	110	100	(10)	0	0	0
Cooks, Restaurant	510	560	50	30	10	20
Cooks, Institution Or Cafeteria	250	270	20	10	0	10
Cooks, Fast Food	270	290	20	30	0	20
Cooks, Short Order	180	190	10	20	0	20
Food Preparation Workers	1,030	1,100	70	70	10	60
Food Preparation,Serv.Fast Food	760	800	40	50	10	40
Food Service Workers, Nec	1,130	1,150	20	70	0	70
Health Service Occupations						
Dental Assistants	210	250	40	10	10	10
Medical Assistants	200	240	40	10	10	0
Nursing Aides And Orderlies	1,800	1,950	150	50	30	20
Home Health Aides	940	1,180	240	60	50	10
Psychiatric Aides	330	320	(10)	0	0	0

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Health Service Workers, Nec	130	130	0	0	0	0
Clean & Bldg.Serv Occup Ex.Priv						
Maids And Housekeeping Cleaners	920	960	40	20	10	10
Janitors And Cleaners	2,700	2,750	50	70	10	60
Clean,Building Service Occs, Nec	320	300	(20)	10	0	10
Personal Service Occs						
Hairdressers And Cosmetologists	300	310	10	0	0	0
Amusement & Recreation Attendant	150	150	0	10	0	10
Personal Home Care Aides	320	380	60	20	10	0
Child Care Workers	590	650	60	20	10	10
Service Occupations, Nec	1,010	1,050	40	20	10	10
Agriculture, Forestry, Fishing	3,260	3,170	(90)	120	0	120
Farm Managers	160	160	0	0	0	0
Ag,Forest,Fish Supervisors	140	140	0	0	0	0
Farm Workers	1,670	1,540	(130)	50	0	50
Nursery Workers	100	110	10	0	0	0
Animal Caretakers, Except Farm	210	230	20	10	0	0
Gardners & Groundskeep,Excp Farm	480	500	20	10	0	10
Lawn Maintenance Workers	180	180	0	20	0	20
Prec. Prod, Craft, & Repr Occ	10,970	11,000	30	240	10	230
Blue Collar Worker Supervisors						
Mechanics & Repair Supervisors	380	370	(10)	10	0	10
Construction,Extrac. Supervisors	340	340	0	10	0	10
Production Supervisors	580	550	(30)	20	0	20
Transportation Supervisors	150	150	0	0	0	0
Blue Collar Supervisors, Nec	120	120	0	0	0	0
Inspector Occupations						
Inspectors,Tester,Graders,Prec	180	170	(10)	0	0	0
Production Inspectors, Graders	410	400	(10)	10	0	10
Mechanics, Installers, Repairers						
Mech., Install., Repairer, Wrkrs	1,400	1,430	30	30	10	20
Mechanics, Industrial Machinery	230	230	0	10	0	10
Maintenance Repairers, Gen.Util.	1,020	1,060	40	20	10	10
Vehicle & Mobile Equip. Mechanic	1,470	1,480	10	40	0	40
Automotive Mechanics	850	860	10	30	0	30
Automotive Body,Related Repairer	190	190	0	10	0	10
Bus, Truck, Diesel Eng. Mechanic	220	220	0	10	0	10
Electrical & Electronic Eq.Mech.	270	260	(10)	0	0	0
Other Mechanics,Installers,Rpr.	630	640	10	10	0	10
Heating, A/C, Refrig. Mechanics	210	220	10	0	0	0
Mechanics, Installers, Nec	160	160	0	0	0	0
Const. Trades & Extractive Occ.						
Construction Trades Workers	1,030	1,050	20	20	10	20
Carpenters	920	930	10	20	0	20
Electricians	530	550	20	20	10	10
Masonry Workers	270	280	10	10	0	10
Brick Masons	150	150	0	0	0	0
Painters And Related Workers	400	420	20	10	0	10

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replace-ments
Plumbers And Related Workers	350	360	10	10	0	10
Plumber, Pipefitter, Steamfitter	310	320	10	10	0	10
Road, Rail, Const., Maint.	250	250	0	0	0	0
Highway Maintenance Workers	190	190	0	0	0	0
Other Construction Trade Workers	220	230	10	10	0	10
Extractive And Blasting Workers	140	130	(10)	0	0	0
Precision Production Occupations						
Precision Metal Workers	940	930	(10)	30	0	30
Tool And Die Makers	200	200	0	10	0	10
Machinists	400	390	(10)	10	0	10
Sheet Metal Workers	160	160	0	10	0	10
Precision Woodworkers	170	150	(20)	10	0	10
Cabinetmakers & Bench Carpenters	100	100	0	0	0	0
Precision Printing Workers	130	120	(10)	0	0	0
Precision Food Workers	120	110	(10)	0	0	0
Other Precision Workers	210	210	0	0	0	0
Precision Workers, Nec	150	140	(10)	0	0	0
Operators,Fabricators,& Laborers	14,820	14,380	(440)	290	0	290
Mach.Setters Set-Up Oper,Tenders						
Selected Mach. Set,Oper,Tenders	440	390	(50)	10	0	10
Machine Tool Cutting Oper., M/P	200	170	(30)	0	0	0
Machine Forming Setters/Oper M/P	330	320	(10)	10	0	10
Machine Forming Operators, M/P	180	170	(10)	10	0	10
Numerical & Comb. Mach Set, Op	190	190	0	10	0	10
Metal Fabricating Setters & Oper	170	160	(10)	0	0	0
Metal & Plastic Process.Mach.Set	470	510	40	20	10	10
Plastic Molding, Casting Oper.	310	340	30	20	10	10
Met.&Plas.Mach.Set/Ops, Nec	150	150	0	10	0	10
Printing, Binding, & Related Occ	290	280	(10)	0	0	0
Textile Mach.Operators & Related	440	420	(20)	10	0	10
Sewing Mach. Operator, Garment	150	140	(10)	0	0	0
Laundry, Drycleaning Mach. Oper.	140	140	0	0	0	0
Other Mach. Set,Operators,Tender	1,420	1,330	(90)	30	0	30
Crushing & Mixing Machine Oper.	120	110	(10)	0	0	0
Packaging & Filling Machine Oper	280	250	(30)	10	0	10
Machine Operators, Nec	330	300	(30)	10	0	10
Hand Working Occ., Inc.Assembler						
Precision Assemblers	540	450	(90)	10	0	10
Electrical, Electronic Assembler	360	290	(70)	10	0	10
Other Hand Workers & Assemblers	2,190	2,000	(190)	30	0	30
Electrical, Electronic Assembler	350	300	(50)	10	0	10
Welders And Cutters	180	170	(10)	0	0	0
Assemblers, Fabricators, Nec	1,000	920	(80)	10	0	10
Hand Workers, Nec	310	290	(20)	10	0	10
Plant & System Occupations						
Transp. & Mat. Moving Mach.Oper.						
Motor Vehicle Operators	3,310	3,400	90	70	20	50
Truck Drivers, Heavy	920	930	10	30	0	20
Truck Drivers, Light	760	800	40	10	10	0
Bus Drivers	210	200	(10)	0	0	0

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

TABLE III.1: SENECA COUNTY LABOR MARKET AREA*

EMPLOYMENT AND OPENINGS BY OCCUPATION, 1993-1998

OCCUPATION	EMPLOYMENT			AVERAGE ANNUAL OPENINGS		
	1993 Base Year	1998 Projection	Change	Net Openings	Growth	Net Replacements
Bus Drivers, School	960	1,020	60	20	10	10
Taxi Drivers And Chauffeurs	120	130	10	0	0	0
Driver/Sales Workers	290	280	(10)	10	0	10
Rail Transportation Workers	100	110	10	10	0	10
Other Transportation Workers	390	380	(10)	20	0	20
Service Station Attendants	230	220	(10)	10	0	10
Material Moving Equipment Opers.	670	660	(10)	10	0	10
Industrial Truck & Tractor Oper.	240	240	0	10	0	10
Operating Engineers	140	140	0	0	0	0
Helpers,Laborers,And Hand Movers						
Helpers - Mechanics & Repairers	130	130	0	10	0	10
Construction Trades Helpers	420	430	10	20	0	20
Helpers, Carpenters	170	170	0	10	0	10
Machine Feeders & Offbearers	150	140	(10)	0	0	0
Hand Freight, Stock, Mat. Movers	800	780	(20)	10	0	10
Refuse Collectors	250	230	(20)	10	0	10
Material Movers, Nec	550	540	(10)	10	0	10
Helpers, Laborers, Mat. Move, Nec	1,860	1,800	(60)	20	0	20
Packers And Packagers, Hand	510	510	0	10	0	10
Vehicle, Equipment Cleaners	160	170	10	0	0	0
Helper, Laborer, Mover, Nec	1,180	1,120	(60)	10	0	10

* Seneca, Ontario, Tompkins, Wayne, Yates

Note: Occupations with fewer than 100 jobs in 1992 are not shown, numbers are rounded to the nearest 10

Table III.2: Employment by major occupation group, 1993 and projected 1998

Occupation	Employment			
	1993	1998 Projection	1993 - 1998 Change Number	Percent
Total, All Occupations	125,850	128,450	2,600	2.1%
Executives, administrative, and managerial	6,360	6,550	190	3.0%
Professional, paraprof., and technicians	37,220	38,670	1,450	3.9%
Marketing and sales	10,210	10,800	590	5.8%
Administrative support, including clerical	21,770	21,510	(260)	-1.2%
Service	21,230	22,370	1,140	5.3%
Agricultural, forestry, fishing and related	3,260	3,170	(90)	-2.8%
Precision production, craft, and repair	10,970	11,000	30	0.3%
Operators, fabricators, and laborers	14,820	14,380	(440)	-3.0%

Table III.3: Fastest growing occupations, 1993-1998

Occupation	Employment			
	1993	1998 Projection	1993 - 1998 Change Number	Percent
Home health aides	940	1,180	240	26.4%
Personal home care aides	320	380	60	20.1%
Medical assistants	200	240	40	19.6%
Dental hygienists	150	170	20	16.8%
Prod.,direct.,actors,entertainer	300	350	50	16.1%
Medical secretaries	240	280	40	15.6%
Salespersons, retail	2,050	2,350	300	15.0%
Dental assistants	210	250	40	14.5%
Systems analysts	340	390	50	14.5%
Human services workers	430	490	60	12.7%
Legal secretaries	160	180	20	11.4%
Psychologists	290	320	30	11.3%
Child care workers	590	650	60	10.9%
Vendors,solicitors,door-to-door	260	290	30	10.5%
Plastic molding, casting oper.	310	340	30	10.5%
Musicians, instrumental	140	160	20	10.4%
Counter and rental clerks	130	150	20	9.8%
Cooks, restaurant	510	560	50	9.4%
Nursing aides and orderlies	1,800	1,950	150	8.6%

Table III.4: Occupations with the largest job growth, 1993-1998

Occupation	Employment			
	1993	1998 Projection	1993 - 1998 Change Number	Percent
Teachers, secondary school	5,500	5,860	360	6.6%
Salespersons, retail	2,050	2,350	300	15.0%
Home health aides	940	1,180	240	26.4%
Nursing aides and orderlies	1,800	1,950	150	8.6%
Teachers, special education	1,470	1,600	130	8.3%
Cashiers	1,850	1,940	90	5.0%
Teachers, elementary	2,530	2,620	90	3.5%
Secretaries, exc. Legal & med	3,730	3,810	80	2.2%
Teacher aides & educ. Assistants	1,210	1,290	80	6.6%
Post-secondary teachers, nec	1,890	1,970	80	3.9%
Food preparation workers	1,030	1,100	70	6.6%
Bus drivers, school	960	1,020	60	5.8%
Child care workers	590	650	60	10.9%
Personal home care aides	320	380	60	20.1%
Waiters and waitresses	1,520	1,580	60	4.4%
Receptionists,information clerks	760	820	60	8.5%
Registered nurses	2,090	2,150	60	2.8%
Human services workers	430	490	60	12.7%

* Ontario, Seneca, Tompkins, Wayne, and Yates Counties

Table III.5

Current Earning Levels for Selected Growth Occupations

Occupation	Median Weekly Earnings and Mid-Range	Dictionary of Occupational Titles (Code)
Teachers, Secondary School	$471 $256-$692	091.227-010
Salesperson, General Merchandise	$284 $198-$654	279.357-054
Cashier I	$167 $139-$220	211.362-010
Secretary, Exc. Legal & Med	$311 $248-$380	201.362-030
Waiter/Waitress, Informal	$165 $139-$250	311.477-030
Cook, Short Order	$173 $119-$355	313.374-014
Janitors And Cleaners	$247 $197-$273	382.664-010
Home Attendant	$291 $220-$404	354.377-014
Teachers, Elementary	$403 $245-$636	092.227-010
Farm Worker, Dairy	$263 $201-$291	410.684-010
Nursing Assistant	$232 $197-$303	355.674-014
Fast Foods Worker	$136 $120-$207	311.472-010

Table IV.1

Industry of Employment for Residents, 1990

Industry	New York State		Seneca LMA		Seneca County	
	Number	Percentage	Number	Percentage	Number	Percentage
Agriculture, forestry, and fisheries	97,604	1.2%	6,164	3.8%	684	4.5%
Mining	7,946	0.1%	328	0.2%	7	0.0%
Construction	431,962	5.2%	9,584	5.9%	942	6.2%
Manufacturing, nondurable goods	524,080	6.3%	10,405	6.4%	803	5.3%
Manufacturing, durable goods	703,090	8.4%	21,933	13.6%	2,201	14.5%
Transportation	432,904	5.2%	4,386	2.7%	442	2.9%
Communications and other public utilities	227,729	2.7%	3,265	2.0%	273	1.8%
Wholesale trade	348,846	4.2%	4,597	2.8%	365	2.4%
Retail trade	1,250,746	14.9%	24,904	15.4%	2,366	15.6%
Finance, insurance, and real estate	777,401	9.3%	6,717	4.2%	453	3.0%
Business and repair services	434,993	5.2%	5,605	3.5%	473	3.1%
Personal services	249,148	3.0%	4,057	2.5%	438	2.9%
Entertainment and recreation services	128,814	1.5%	1,738	1.1%	184	1.2%
Health services	847,035	10.1%	12,805	7.9%	1,864	12.3%
Educational services	799,457	9.6%	29,411	18.2%	1,577	10.4%
Other professional and related services	684,827	8.2%	10,052	6.2%	840	5.5%
Public administration	424,136	5.1%	5,420	3.4%	1,293	8.5%

Source: 1990 Census of Population and Housing, Summary Tape File 3

Table IV.2

Occupation of Employment for Residents, 1990

Occupation	New York State		Seneca LMA		Seneca County	
	Number	Percentages	Number	Percentages	Number	Percentages
Managerial and professional specialty occupations						
Executive, administrative, and managerial occupations	1,112,178	13.3%	17,509	10.9%	1,559	10.3%
Professional specialty occupations	1,396,763	16.7%	27,829	17.2%	2,040	13.4%
Technical, sales, administrative support occupations						
Technicians and related support occupations	292,837	3.5%	6,906	4.3%	523	3.4%
Sales occupations	937,227	11.2%	14,975	9.3%	1,412	9.3%
Administrative support occupations, including clerical	1,543,860	18.4%	23,578	14.6%	2,062	13.6%
Service occupations						
Private household occupations	43,384	0.5%	532	0.3%	42	0.3%
Protective service occupations	209,035	2.5%	1,959	1.2%	303	2.0%
Service occupations, except protective and household	950,196	11.4%	19,612	12.2%	2,121	13.9%
Farming, forestry, and fishing occupations	93,536	1.1%	5,410	3.4%	648	4.3%
Precision production, craft, and repair occupations	788,806	9.4%	19,692	12.2%	2,211	14.5%
Operators, fabricators, and laborers						
Machine operators, assemblers, and inspectors	428,873	5.1%	11,401	7.1%	962	6.3%
Transportation and material moving occupations	308,361	3.7%	6,512	4.0%	651	4.3%
Handlers, equipment cleaners, helpers, and laborers	265,662	3.2%	5,456	3.4%	671	4.4%

Source: 1990 Census of Population and Housing, Summary Tape File 3