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THE ECONOMIC IMPACT OF THE GENEVA STEEL COMPANY (UNITED STATES  
STEEL SUBSIDIARY) ON UTAH COUNTY, UTAH

by

Charles H. Holmes

A thesis submitted in partial fulfillment  
of the requirements for the degree

of

MASTER OF SCIENCE

in

Economics

UTAH STATE AGRICULTURAL COLLEGE  
Logan, Utah

1956

378.2

H734

## PREFACE

In the future of the Intermountain West lies a great industrial movement; we now stand on the threshold of that new industrial frontier. Here in the West we are proud of our achievements, but it is only a beginning; for as Brigham Young foresaw his Deseret Empire, so the builders of today foresee an industrial expansion of the West of tomorrow.

In relation to this industrial expansion, we have here a case study of an industry that is now more than ten years old; a study of a county that has prospered and grown under a great industry, and that will continue to grow. As the title states, it is a study of Utah County, on Utah Lake, as it is affected socially and economically by the great Geneva Works of the United States Steel Corporation.

#### ACKNOWLEDGMENT

I wish to express my sincere appreciation to Dr. Leonard J. Arrington, Chairman of my Graduate Committee, for his unflinching help and suggestions that have helped to make the writing of this study possible.

I would also like to thank Dean Milton R. Merrill, Professor Evan B. Murray, Professor David R. Stone, all of my Graduate Committee, and all those people too numerous to mention in Utah County who have contributed their time and knowledge that this study might be made possible.

Finally, a note of very sincere appreciation to my wife, Shannon, who gave me encouragement and took care of Kay and Cory during the periods it was necessary for me to be away to complete the work on this study.

Charles H. Holmes

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FIGURE 1



INDUSTRY AND AGRICULTURE - GENEVA STEEL COMPANY PLANT  
NESTLED AMONG THE PRODUCTIVE FARMS OF UTAH VALLEY

## I

## INTRODUCTION

## A Brief Economic Survey of Utah

"The Far West is the Golden West. Of all the regions, it boasts the largest wartime gain in population and income. It looks to the brightest prospects."<sup>1</sup> This prophecy, made in the immediate post-war period by Business Week, has indeed become manifest in the economy of Utah.

Ten years have elapsed since the termination of World War II, and it was only in those ten years that Utah has awakened and stretched to begin her day of comparative economic growth. Her basic industries of mining, construction, and manufacturing are at an all-time peak of prosperity. This rise of prosperity, of course, is true of the nation in general, but percentage-wise the rise in growth of the Utah economy is greater than that for the average of the nation.

In conjunction with this rise in prosperity, Utah's population has increased 25.2 per cent, whereas the population for the United States has increased 14.5 per cent in the ten-year period 1940-1950.<sup>2</sup> Utah ranks twelfth among the 48 states as to mineral production, with the value of minerals computed at \$230,000,000 in 1950.<sup>3</sup> Principal minerals

- 
1. Business Week, April 12, 1947.
  2. U.S. Bureau of the Census, United States Department of Commerce. Census of Population: 1950, Vol. 1; and Current Population Reports, Series P25, No. 47.
  3. U.S. Bureau of Mines, United States Department of Interior. Minerals Yearbook: 1950, Table No. 4. p. 40.

included copper, coal, and iron ore. Utah produces more iron ore and bituminous and lignite coal than any other state west of the Mississippi.

Manufacturing has doubled in the number of employed workers from the period 1940 to 1950. The wages and salaries for that period more than quadrupled. Census figures for 1939 show \$18,368,000 for wages and salaries and \$89,800,000 in 1950. The value added by manufacturing in 1939 was \$42,411,000 and \$183,000,000 (estimated) in 1950.<sup>1</sup> These particular figures also more than quadrupled in the period 1940-1950.

In an economy such as that of Utah farming plays a predominant part, yet the farm population and farm labor supply has dropped, while the basic industry population and labor supply has increased. Statistics from the Census bear this out as the percentage increase between 1940 and 1950 in urban population was 35.0 per cent; whereas, the rural farm population shows a net decrease of -14.2 per cent.<sup>2</sup> From 1940 to 1950, manufacturing employment in the nation increased by 37.9 per cent, in Utah by almost 72 per cent. From 1950 to 1952 manufacturing employment in the nation increased by 7 per cent, in Utah by 9 per cent. However, in the nation one-fourth of all employment is in manufacturing; in Utah one-eighth of all employment is in manufacturing.<sup>3</sup>

The drop in farming population, of course, is due to vastly increased mechanization, intensive and modern farming methods, and modern, chemically compounded fertilizers. Of note, however, is the fact that although there has been a population drop in this segment of our economy, there has been an increase in the productivity of food and

1. University of Utah, Bureau of Economic and Business Research. Utah's Economic Pattern: December 1953 (Salt Lake City, Utah). Manufacturing Table No. 1.
2. U.S. Bureau of the Census, Census of Population: 1950. Vol. II, Characteristics of Population, Part 44, Utah, Chapter B.
3. Op cit., Utah's Economic Pattern.

farm products. The conclusion that must be drawn from this, then, is that the population of Utah is migrating to other areas or is being re-employed in our rising basic and secondary industries. Statistics will bear out that the latter is becoming the greater factor.

Food processing is the largest classification of manufacturing industries. Of Utah's 900 plus manufacturing plants, more than 300, or more than one-third, are in the field of food and kindred products. These employ roughly 30 per cent of the state's factory workers. Table No. 2 shows an average of 9,454 employees out of an average of 32,585 or 29.01 per cent employed in this classification.

Second in importance, and of primary importance in this particular study, is the manufacture of iron and steel and their products. About 30 per cent of Utah's factory workers are employed in the primary metals industry, of which, iron and steel comprised the largest group. Table No. 2 shows an average of 9,001 employees of an average of 32,585 or 27.62 per cent. The steel plant at Geneva has brought this industry into a new position of prominence. The demand of Utah manufacturers for steel for fabrication has increased six-fold over that of the pre-war years.

TABLE NO. 2

## CLASSIFICATION AND NUMBER OF EMPLOYEES, STATE OF UTAH

<u>Classification</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>Average</u>
Manufacturing	33,976	32,347	31,432	32,585
Food and Kin. Products	11,000	9,093	8,269	9,454
Primary Metals Indust.	8,625	9,188	9,189	9,001

Source: The Industrial Commission of Utah, Labor Market Quarterly (4th Quarter 1954). p. 13.

The importance of the Geneva mills near Provo, utilizing iron ore, coal, limestone and dolomite, the basic raw materials for iron and steel production, and which are all mined in the state of Utah, is well known in the state.

The Geneva plant is the basis for many of the prospects for increasing industrial importance in Utah. Recent expansion of the facilities and production at Geneva is proof that the "wartime baby" can more than hold its own in peacetime; that it can contribute much to the industrial strength and prosperity of the State, the Intermountain West, and Pacific Coast. It is a hub around which intermountain industry can turn. It is of tremendous importance in expanding the operations of our well established machinery, boiler, tank, fabricated steel and equipment manufacturers. Furthermore, Geneva is becoming a magnet for additional metal products plants -- satellite enterprises which in a space of time will be drawn to locations near this great basic producer to make products not now a part of our manufacturing activities.

Other new, diverse and widely distributed manufacturing enterprises are adding significantly to Utah's industrial economy. The new gypsum plant at Sigurd, the rubber fabric products plant at Nephi, and the new clothing factories at Provo are among the largest employers. There are many others; a number of them small operations, but in the aggregate they constitute an impressive total of new production, new employment opportunities, and additional payrolls.

TABLE NO. 3

## POPULATION OF CITIES OVER 10,000

<u>City</u>	<u>Population</u>	<u>Per cent increase</u> <u>1940 - 1950</u>
Logan	16,832	41.8
Provo	28,937	60.1
Ogden	57,112	30.7
Salt Lake City	182,121	21.5

Source: U.S. Bureau of the Census.  
Population: 1950.

Such new industries take up the employment slack in Utah's predominantly small communities. Salt Lake City, Ogden, Provo, and Logan are the only Utah cities with a population of more than 10,000 (see Table No. 3). But there are almost three dozen towns with from 2,000 to 6,500 residents. Generally there is a substantial additional population in the near vicinity. A manufacturer's payroll in more of the smaller towns will mean much in Utah's industrial development and will distribute the gains more widely throughout the state, an important factor in attaining economic stability. Year after year manufacturing employment payrolls will be steadily expanded in Utah and intermountain products reach in ever greater proportion the growing markets of the great new and golden West.

Manufacturing is the key which is unlocking the storehouse of our abundant natural resources and promoting the development of a stronger, dynamic, prosperous state. Most things are here for growth:

- An increasing population.
- People of outstanding industry and civic pride.
- A good and stable labor force -- low turnover, high production efficiency.
- High educational standards -- good schools with well-trained teachers.
- Good living conditions -- a commonwealth of home owners.

An abundance of raw materials.  
A treasury of still undeveloped natural resources.  
Excellent transportation facilities.  
Adequate fuel and power with a tremendous additional potential.  
Remarkable climate with low humidity and abundant sunshine.  
A fair and sound labor law -- forming a basis for good industrial relations.  
Favorable public sentiment toward industry.  
Outstanding technical research program in Utah colleges.

### The Purpose and Method of Investigation

The purpose of this study is not to examine an area of such magnitude as that of the Intermountain West or even the State of Utah, but to investigate and examine the social and economic aspects of an area the size of a county as it is related to a large, dynamic basic industry. It will endeavor to show the relationships and correlations of employment, labor and payrolls; to show farming as it was before the inception of the Geneva plant and as it is after the inception of the plant; and also to show the business growth in the same manner as farming. It will show how each of these segments have increased in direct alignment with the Geneva plant growth.

The method of investigation has been of standard variety and much the same as any standard work of this type. Reports of various governmental and private agencies have been screened, and, of course, use has been made of historical as well as contemporary statistics. Field and research trips, among others, were conducted to banking institutions, employment service offices, union headquarters, Brigham Young University library, county libraries, and several other sources of information.

The many and various agencies involved were solicited for help, which came forth generously as a rule, and which was most generally accomplished by personal contact and interview. Finally, and of



particular accomplishment to the writer, was the investigation of the great Geneva plant itself. Unfortunately, however, research at the Geneva plant itself was rather negligible in that company policy prohibits absolutely the releasing of any information pertaining to the plant and company. Superintendent Frank S. Dain of the Industrial Relations Department pledged his full support on the project, but upon further checking it was revealed that Mr. James E. Butler, Comptroller of the Columbia-Geneva Steel Division at the San Francisco office vetoed the measure completely.

The writer, having been employed by this company for many years, realized the reasons involved and re-routed what information was needed through the Public Relations Office in Salt Lake City and found that office to be co-operative in many respects. Again, however, many items could not be released because of company security regulations. Much of the basic investigation was done while the writer was still employed at the Geneva plant.

The literature involved and reviewed came, to a large extent, from the governmental agencies; i.e., the U.S. Bureau of Mines, U.S. Department of Commerce, U.S. Bureau of the Census, U.S. Government Printing Office, and the Utah State Department of Employment Security. Some theses on related areas of research were read at the University of Utah and Brigham Young University. Mention must be made of the printed materials released by the United States Steel Corporation through the Public Relations and Industrial Relations Departments at Salt Lake City and Geneva. Several days were spent in the "morgue" reviewing newspapers and newspaper clippings pertaining to the development of Geneva and related sociological features and items of interest.

### The Organization of the Study

The organization of this study is predicated on the assumption of established relationships of growth between Utah County and the Geneva Steel Company over a fixed number of years. A base period prior to the establishment of Geneva has been used for base statistics; these have been developed as to growth and relationship over the years up to the present. Generally, whenever possible, statistics for 1940 and 1950 have been used to show relationships.

In organizing this study the writer has tried not to overburden the text material with statistical tables and analysis, although this is often the case with a thesis in order to give it a very erudite expression. Where and when these tables and analyses are necessary, they are set forth. It is hoped that the writer's thoughts and conclusions drawn from the various statistical tables might be more palatable and easier to digest than the raw statistics so often inserted.

In any event, this study has been set up so as to set forth the sometimes simple, sometimes complex, economic and social relationships which have been and are mutually advantageous to Utah County and the Columbia-Geneva Steel Division of the United States Steel Corporation.

## CHAPTER II

## ESTABLISHMENT OF THE GENEVA PLANT

## History and Background of Valley

Utah County is located in the central part of northern Utah, its county boundaries extending on the north to a point about twenty-eight miles south of Salt Lake City. The county is sixteenth in size of Utah's twenty-nine, with an area of 1,998 square miles.<sup>1</sup> Outstanding in its rugged topography is the Wasatch range of the Rockies, traversing the county north and south, with Mt. Timpanogas, famed for its legendary Indian lore and snow-capped beauty, rising to a height of 12,008 feet above sea level. Between its towering peaks and fresh-water Utah Lake to the west, lie rich alluvial deposits left by the streams which flow from the canyons, a fertile soil which supports the greater part of the third-largest county population in the state of Utah.<sup>2</sup>

## Geography

General Description

Utah Valley is approximately 38 miles long, averaging 15 miles wide. With an approximate land area of 1,278,720 acres or 1,998 square miles, it assumes a size approximately double or twice the size of the state of Rhode Island. The valley has an altitude of around 4,500 feet

1. Rand McNally, Commercial Atlas and Marketing Guide. Eighty-fourth edition. (New York: 1953). p. 423.
2. U.S. Department of Commerce, Bureau of the Census. Population, 1950. The second largest county (Weber) has a margin of 2,000 (1950) population over Utah County, but at the time of this writing may be closer due to the curtailment of some government installations in Weber County since 1950.

and lies between 111 and 112 degrees west longitude, and 40 degrees north latitude. The county is bounded on the west by the Cedar Mountains, which with the Lake Mountains and intervening Cedar Valley lie to the west of Utah Lake. Traverse Mountains in the northwest, East Tintic Mountains in the southwest, Long Ridge in the south of the county, and West Mountain south of the lake add to the rugged nature of the terrain.

The principal towns and cities of the county are located in Utah Valley, a half-moon shaped valley between the Wasatch range and Utah Lake. The arterial highway running south from Salt Lake City to southern California takes the motorist through a chain of Utah County towns beginning with Lehi at the north, and with only short distances intervening, continues through American Fork, Pleasant Grove, Orem, Provo, Springville, Spanish Fork and Payson.<sup>1</sup> Small villages may be found in the Cedar Valley west of the lake and a few resorts or railroad points east of the main Wasatch peaks. In all there are thirteen incorporated cities in the county.

Provo City, the county seat and third city of the state in population, lies at the base of the Wasatch peaks, centered geographically between the north and south boundaries of the county.

#### Utah Lake

One of the great unique and picturesque geographical features of Utah Valley is Utah Lake. One of the largest bodies of fresh water in the West, it occupies an area of more than 11 square miles, or a maximum

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1. Smaller towns and villages intervene between these larger cities with frequent regularity and form a continuous chain southward through the county.

area of 9,400 acres. This is Utah's Sea of Galilee, which is emptied by the Jordan river into America's Dead Sea, the Great Salt Lake.

Utah Lake is a tiny remnant of prehistoric Lake Bonneville, whose waters once filled the entire Great Basin. For thousands of years Lake Bonneville receded because of evaporation and drainage; each recession is marked by wave-cut benches. Today one can see these shoreline terraces along the mountain sides surrounding the Utah Valley. The highest or Bonneville bench is about 1,000 feet above the present level of Utah Lake; the Provo shoreline is about 375 feet lower. The level is indicated by the Provo bench. The site of the Upper Campus of the Brigham Young University, which through a curious coincidence, is on the same geological level as the east bench site of the University of Utah in Salt Lake City, and the campus of the Utah State Agricultural College at Logan. The next halt made by this ancient lake is known as the Stansbury level which extends into Provo City. The present level, of course, is the Utah Lake level. In the meantime, while Lake Bonneville retreated, the streams reaching back into the snow-capped mountains have fed countless tons of virgin soil to these lake levels, creating soil well adapted to diversified agricultural pursuits.<sup>1</sup>

Utah Lake water now furnishes irrigation for about 60,000 acres of land, and supplemental waters for several flour milling and power companies, for condenser purposes at the Jordan stream plant of the Utah Power and Light Company, for smelting at Midvale and for the operation of ore concentrating plants at Magna and Garfield.

Heavy use of the lake for irrigation purposes has made it difficult to develop adequate recreational facilities, but the rise of the lake

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1. Ray C. Colton. A Historical Study of the Exploration of Utah Valley and the Story of Fort Utah. (Unpublished Masters Thesis, Brigham Young University: 1946) *passim*.

level since 1935 has permitted some progress to be made in restoring its importance to fishermen, while Provo City and American Fork has taken considerable interest in developing boating facilities, a boat harbor at the mouth of the Provo River being of particular utility for recreationists.

### Climate

The state of Utah has a mountainous, inland, arid climate, with a considerable difference between day and night, and summer and winter temperatures. Extremes of weather are generally lacking, however, and interruption to transportation and other services are rare.

Relative humidity is low and constant, reducing oppressiveness of summer heat and penetration of winter cold. Low humidity also has its economic importance in that it slows oxidation of metals, rotting of woods, formation of mildews in fabrics and corrosive processes in general. The mean annual temperature at Provo Airport, for instance, is 49.2 degrees. (See climatic summary Table No. I in Appendix.)

The average precipitation for the state is 12.96 inches per year, varying from 5.6 inches at the driest stations to 22.71 inches at some mountain points. The northern part of the state gets its snows and rains mainly between January and May. Frost-free days are as numerous as 227 days in the year in some sheltered places, 182 days in the Salt Lake area.<sup>1</sup>

Utah Valley enjoys a slightly heavier precipitation than Box Elder, Cache, or Salt Lake Counties, but not so great as is recorded at Ogden

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1. Utah State Planning Board. A State Plan for Utah. (Salt Lake City; April 15, 1935.) p. 11.

in Weber County. Climatic data for selected Utah County points and for stations in these four other counties are presented in Table No. 4.

### History

The early events accompanying the settlement of the Utah Valley help to explain the close-knit and self-reliant nature of the communities of which Utah County is comprised.

Utah Valley was first visited by white men when, in 1776, a party of Spanish explorers seeking a shorter route from Santa Fe to Monterey entered and explored the region surrounding Utah Lake. The leaders of this expedition, Fathers Silvestre Velez de Escalante and Atanasio Dominguez, were anxious that a mission be established in the locality, but their plans never materialized. The contact, however, which they made with the Ute Indians paved the way for trading expeditions between the Utah Valley and New Mexico, which soon followed.

By the end of the first quarter of the nineteenth century, other white men, chiefly English and American trappers, had entered the Valley. Father Escalante and subsequent explorers and visitors commented in their writings on the fertility of the region, and its adaptability for colonization.

#### Early Settlement

The history of the settlement of the area which is now Utah County begins with the arrival, in 1847, of the Mormon pioneers. Almost immediately after their entrance into the Salt Lake Valley, they discovered the lake to the south, and sent parties to explore the lake and the region. In 1849, the first colonists, thirty men and their families led by John S. Higbee, came south from Salt Lake Valley to found a

TABLE 4  
CLIMATIC DATA FOR SELECTED CITIES IN UTAH

PLACE	COUNTY	ELEVATION	TEMP. F		AVERAGE ANNUAL PRECIPITATION	AVERAGE DATE LAST KILLING FROST IN SPRING	AVERAGE DATE FIRST KILLING FROST IN FALL	TOTAL NUMBER FROST-FREE DAYS
			MAX.	MIN.				
Elberta	Utah	4,650	109	-28	10.66	May 19th	Sept. 30th	134
Lehi	Utah	4,550	106	-28	12.68	May 13th	Sept. 25th	135
Provo	Utah	4,650	110	-35	15.33	May 24th	Sept. 25th	124
Spanish Fork	Utah	4,620	108	-19	17.61	April 28th	Oct. 13th	168
Brigham City	Box Elder		108	-27	17.33	May 2nd	Oct. 2nd	162
St. George	Washington		116	-11	8.73	April 10th	Oct. 23rd	196
Ogden	Weber	4,310	105	-23	17.92	May 6th	Oct. 8th	155
Salt Lake	Salt Lake	4,408	105	-20	15.79	April 13th	Oct. 22nd	192

Source: United States Department of Agriculture. Yearbook of Agriculture  
Climate and Man. 1941.



settlement on the Timpanogos River (now Provo River), which they called Fort Utah. They broke the first ground and planted the first crops after Dimick B. Huntington, an Indian interpreter, solemnly took the oath required by the Indians thereabouts, that the new Mormon settlers would not drive the Indians from the rich fishing waters. In October of 1849 they moved a little farther east and established Provo City.<sup>1</sup>

#### Beginnings of Government

On January 28, 1850, the General Assembly of the State of Deseret created Utah County, its boundaries to include that portion of the country known as the Utah Valley. Extension of these boundaries by the first legislature of the Territory of Utah, and later periodic changes resulted, in 1884, in the boundaries being set as they are at present.<sup>2</sup>

Prior to the creation of the county, government in the Utah Valley was vested in and administered by the Mormon Church and its leaders. This practice did not end with the organization of the county, since the same officers continued to serve under changed titles. Organization and history of Utah County's government prior to 1852 are somewhat obscure. During that time the county was organized functionally, and officers were appointed by the court.<sup>3</sup>

The last serious Indian uprising came in 1853 and was followed by further troubles for the Utah County settlers in the form of famine, resulting from the grasshopper pestilence, and the coming to Utah of the expedition of Federal troops with its accompanying disorganizing influence

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1. J. Cecil Alter. Utah the Storied Domain. Vol. 1, The American Historical Society. (Chicago and New York; 1932.) p. 101.
  2. Henry R. Pearson and John W. Ingram, Administration of Public Affairs in Utah County (Unpublished Masters Thesis, University of Denver, 1941), p. 6.
  3. Ibid., p. 7.

on the county. "Johnston's Army" of this era was quartered on the far western boundary of Utah County and is considered by some historians as a mixed blessing.<sup>1</sup> These troops, sent to quell a supposed rebellion against the United States Government, were withdrawn in 1861, leaving the many small colonies, which by this time dotted the county, to a period of uninterrupted development.

### Community Growth

Irrigation of farm lands had been one of the first projects of the settlers, and development of irrigation on a large scale throughout the valley has resulted in this region becoming one of the rich, agricultural producers of the West.

Several small manufacturing enterprises had been established in Provo, Payson and other of Utah County's towns prior to 1873, but the completion of the railroad connection with Utah County, making it possible to ship machinery from the East by rail, marked the beginning of industrial development in the area.

Accompanying the agricultural and industrial progress of the latter part of the nineteenth century was a marked rise in the cultural level of the county. This cultural growth centered about Brigham Young University, which, located in Provo, was established in 1876.

Utah Valley has undergone striking change since the days of the first pioneer settlers. Today, replacing the log forts of the early colonies are modern towns and cities. Rich agricultural areas, made

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1. Johnston's Army was quartered on the border of Utah County at the small town of Fairfield. During that period it grew to be third largest city in Utah; now it is a very small town with only a handful of farm families. At Fairfield today there still remains some remnants of that era -- the old hotel, the government cemetery, etc. Incidentally, that cemetery is supposedly the only U.S. Army cemetery remaining today that is completely neglected. Historians consider it a mixed blessing as it gave an economic thrust to the county to supply

possible through ever-increasing irrigation facilities, are crossed by railroads, wide highways and communication lines. The fertile valley not only supports agriculture, but also has become the location for a number of diversified industries, including the manufacture of steel, iron products, machinery, clay products, and clothing.

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the needs of the Army, and vast amounts of material were sacrificed as surplus when the Army moved out. On the other hand, the riff-raff and camp-followers had a somewhat disorganizing sociological influence on the county.

## FACTORS DETERMINING LOCATION OF THE GENEVA PLANT

## Historical

Development of Iron and Steel in Utah<sup>1</sup>

Historically speaking, the iron and steel industry of Utah is not a development of these recent times, but a development that began some two and a half years after the first Mormon pioneers arrived in the Great Salt Lake Valley. At that time, an exploring expedition led by Parley P. Pratt discovered significant deposits of iron and coal in the area which now surrounds Cedar City, Iron County, Utah.

Because the early pioneers were anxious to become self-sufficient as quickly as possible, plans were laid immediately for an iron industry. Within twelve months a colonizing company of 118 men -- 30 of them accompanied by their families -- were enroute to Southern Utah to build what they hoped would one day be an important industrial center.

Under the leadership of George A. Smith they left Provo, Utah, on December 16, 1850, and journeyed by ox team to the area near Cedar City where they established the small community of Coal Creek.

Here they built a crude blast furnace, their nearest neighbors being two hundred miles to the north and five hundred miles to the south. In the summer of 1852, the first pig iron made west of the Missouri River was produced in this furnace. A blacksmith, Burr Frost, made nails enough to shoe a horse from the first iron.

In the meantime, the Deseret Iron Company was organized in April,

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1. Material for much of this historical section was taken from Growth of the Iron and Steel Industry in Utah, a publication released by the Public Relations office of the United States Steel Corporation. (Salt Lake City, Utah. pp. 10.) passim.

1852, in Liverpool, England, at the insistence of Brigham Young, to provide capital for the venture as well as skilled iron workers and colliers. Converts to the Church of Jesus Christ of Latter-Day Saints were then en route to Utah.

Brigham Young declared in his "iron sermon" that "Iron we need, and iron we must have." He felt it so important that he divided many of the people in the Cedar City area into two groups -- one devoted to the agricultural needs of the community and the other to the iron works. He declared all the grain tithing in the Parawon area to go to the brethren going into the iron business.<sup>1</sup>

The Deseret Iron Company purchased the small blast furnace and began to enlarge facilities. Despite their urgent efforts and stubborn tenacity, this venture was not a financial success.

The task of iron manufacturing on the western frontier had been started with high hopes. The iron ore was of excellent quality, and coal was available nearby. The coal, however, proved to be inferior for converting into coke, and although deposits were not far from the iron ore beds, they were high in the mountains and difficult to reach.

The pioneers had hoped for a banner output in 1853. They had put every available dollar into the venture and the territorial government had provided a substantial subsidy.

Just as things were the most encouraging, the nearby Indians took to the war-path and all energies had to be directed toward the preservation of life. The 1853 catastrophe was complete when a cloud burst in the canyons and a destructive flood swept away dams, bridges, and the

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1. Brigham Young, Title of sermon "Dependence on the Lord -- Coal and Iron Works -- Family Excursions." Journal Discourses (26 Vols., Liverpool, 1852-1886), II:282.

road to the coal mine, brought debris to the depth of three feet to the site of the Iron Works, and carried away hundreds of bushels of charcoal, wood, and other valuable material.

During 1854 the pioneers prepared for the third try at iron production and on April 19, 1855, 1700 pounds of good iron were produced and the technique of iron manufacturing, which had caused so much difficulty, seemed to be solved.

Other elements necessary to the success of the enterprise were lacking. More workers and teams were needed to keep the furnace going constantly. (Within two weeks the furnace had "blown out" simply for want of fuel.) Then, too, for three months during the winter of 1855-56, Coal Creek, which provided the water power relied upon for supplying the blast to the furnace, was frozen and during the same interval coal was inaccessible. Two 30-horsepower engines were installed in an effort to free the iron works from dependence upon water power, but the engines proved unequal to the emergency, and the disheartened workers began moving from the settlement in 1857. The furnace finally closed in 1858.

With the advent of Johnston's Army in 1857, iron was brought into the region in large quantities, and with the arrival of the railroad in the 60's the price of pig iron dropped considerably.

Ten years after this first iron making venture had failed financially, the second attempt to begin a successful pig iron industry in the area was undertaken by the Great Western Iron Manufacturing Company at Irontown, just a few miles southwest of Iron Mountain, near Cedar City, Utah.

This company, organized in 1868, began the manufacture of iron during 1873. The blast furnace had a daily capacity of 2400 pounds of pig iron. It continued in production for ten years and the pig iron was used to make stoves, grates, iron pots, frying pans, flat irons, buckets

and other castings. This operation, like its predecessor, was not a financial success and in 1883 ceased operations.

In 1915 the production needs of World War I prompted the organization of the Utah Iron and Steel Company, subsequently incorporated as the Utah Steel Corporation. This was the next step in the development of Utah's iron and steel industry. The plant was located at Midvale, Utah, just south of Salt Lake City and originally had a single open hearth furnace with a daily capacity of 150 tons of steel. A second furnace was added later.

Cancellation of government contracts at the close of World War I brought financial ruin to the enterprise which had expanded on the strength of the government's need for steel. An attempt was made to salvage the project in 1923 by reorganizing the corporation as the Western Steel Company, but this proved unsuccessful and the effort was abandoned in 1926.

The efforts of the Utah Steel Corporation, however, attracted the interest of the old Columbia Steel Company in California. The Columbia Steel Company, a Pacific Coast enterprise, was organized in November, 1921, with a capitalization of \$15,000,000 for the purpose of manufacturing pig iron from Utah ore.<sup>1</sup> In December 1922, the company was reorganized and named Columbia Steel Corporation, at which time coal deposits in Carbon County, Utah, and iron ore deposits near Cedar City, Utah, were purchased.

Columbia Steel Corporation also erected a battery of 33 by-product coke ovens and a 450 ton blast furnace at Ironton near Provo, Utah, and began producing pig iron on April 30, 1924.

The operations of Columbia Steel Corporation in Utah successfully used for the first time coke made from Utah coals, and smelted southern

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1. Anna Viola Lewis, The Development of Mining in Utah (Unpublished Masters Thesis, University of Utah, 1941), p. 121.

Utah's iron ores with the aid of limestone quarried from nearby deposits. It was the first financially successful venture in iron making in the Beehive State.

Pig iron produced at the Ironton furnace was intended primarily for consumption in Columbia Steel Corporation's steel plants at Pittsburgh, California, and at Terrance, California. The balance of the output was sold to the Pacific States Cast Iron Pipe Company at Ironton and to foundries throughout the Western states.

This arrangement remained substantially unchanged following the purchase of Columbia Steel Corporation by the United States Steel Corporation in 1930.

#### The Geneva Plant

The next major development of the iron and steel industry in Utah occurred in 1941-42 when the Defense Plants Corporation of the federal government decided to build additional steel production facilities in the West.

At the request of the government, United States Steel Corporation designed the new steel plant to meet the government's requirements. It was built for the government on a cost basis by U. S. Steel's Columbia Steel Company without charge or fee. The new mill, known first as the Geneva Plant, was named for a little summer resort of Geneva on Utah Lake.

The site in Utah County -- about six miles northwest of Provo -- was chosen because it possessed adequate transportation facilities and was a minimum distance from sources of iron ore, coal, limestone and



delomite. The accessibility of sufficient fresh water was another important consideration.

Upon its completion, the plant was operated for the government by Geneva Steel Company, a new United States Steel subsidiary organized in 1943. The skilled personnel came to a large extent from Columbia and other U. S. Steel subsidiaries. The majority of the working force was recruited from native Utahns, 75 per cent of whom had never seen the inside of a steel mill.

Ninety per cent of those employed [at Geneva] have been recruited locally, that is, in Utah, either from the construction force of Columbia Steel Company's Defense Plant Division or from the surrounding communities. It is expected that this ratio will be maintained as the plant moves into plate production. Originally it had been variously estimated that from forty to fifty per cent of the employees would be brought in from outside Utah. (1)

Construction on the plant began with the breaking of ground in March, 1942, and the major part of the construction was finished by the end of 1943. Production started in December 1943, when the first coke was made. The first pig iron was smelted in January, 1944, followed by the first open hearth steel in February, 1944. Experimental steel plates were rolled the following month.

Built in record time, the Geneva plant included when it was finished 252 by-product coke ovens, three 1100-ton blast furnaces, nine 225-ton open hearth furnaces, a 45-inch slabbing and blooming mill, a 132-inch semicontinuous plate mill, a 26-inch structural mill and the numerous complementary facilities required to operate a large steel works of this character. The scheduled capacity of the Geneva plant at that time was

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1. Utah Valley News (Provo, Utah), May 10, 1944.

1,150,000 net tons of iron, 1,283,400 net tons of steel ingots, 700,000 tons of plates, and 250,000 tons of structural shapes.<sup>1</sup>

During this same time a new coal mine was opened for the government at Horse Canyon, Utah, some 130 miles southeast of the Geneva plant. The iron ore mines of Columbia Iron Mining Company at Iron Mountain, about 252 miles southwest of Geneva, were expanded in order to supply iron ore for the new steel mill. It was necessary to provide facilities for the quarrying of limestone and dolomite at properties owned by Columbia Steel Company near Payson, Utah, about 35 miles from the steel plant.

Also during World War II a blast furnace was moved from Joliet, Illinois, at the request of the government to what was then Columbia Steel Company's plant at Ironton, Utah, in order to increase the West's annual pig iron capacity by another 300,000 net tons.

With the surrender of Japan on August 14, 1945, the cancellation of war-time contracts for shipbuilding and other war projects brought to an end the emergency need for Geneva's vast plate and structural steel capacity. The plant gradually slowed to stand-by operations while postwar disposal plans were negotiated.

Disposition of Geneva was governed by the provisions of the Surplus Property Act, enacted by Congress in 1944, setting forth the rules for the disposal of all the government's surplus plants, equipment and supplies.

In mid-January, 1945, Benjamin F. Fairless, then president of and now retired, addressed a letter to the Defense Plant Corporation in which he declared that U. S. Steel was ready to discuss the purchase or lease of the new steel mill at Geneva when it was no longer needed for war work.

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1. Op cit., U.S. Steel Corporation. p. 6.

Opposition to sale of the plant to U. S. Steel developed in some governmental quarters, particularly the Anti-trust Division of the Justice Department. There was also some doubt about the successful peacetime operation of the mill in view of the size and character of its facilities and the distance of the Utah plant from the most important consuming markets in the West. Therefore, in July, 1945, the Board of Directors of U. S. Steel decided to take no further action toward acquisition of the Utah steel plant. U. S. Steel's withdrawal from the bidding for the Geneva plant resulted in a spontaneous movement among certain individuals and agencies in Utah and elsewhere in the West to have the Geneva plant owned and operated by U. S. Steel, which had designed, built and operated this mill during the war years.<sup>1</sup>

In view of this strong current of opinion in the West and requests from government officials that U. S. Steel reconsider its decision, U. S. Steel entered a sealed bid for the purchase of the plant and its inventories. Bids or proposals to lease were also entered by other corporations, including the Colorado Fuel and Iron Corporation, J. S. Warshaw of New York City, the Riley Steel Company of Los Angeles, Pacific American Steel-Iron Corporation Ltd. of Seattle, and Assets Reconstruction Corp. Limited of Los Angeles. The War Assets Administration adjudged U. S. Steel's cash bid of \$47,500,000 for plant and inventories with a pledge to spend \$18,600,000 on reconversion to be the best bid, and on May 23, 1946, accepted this bid. The original cost to the government is reported to have been in the neighborhood of \$190,000,000.

On June 17, 1946, Attorney General Tom C. Clark -- who had reviewed the sale as required by law -- approved the sale to U. S. Steel. Clark

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1. The tremendous play of forces resulting from this particular action is an interesting economic and political story in itself. Although most of the opposition developed in governmental quarters, there was also a coalition factor of Utah residents operating.

said that, in his opinion, the sale was not in violation of anti-trust laws. U. S. Steel took over private operation of the new Utah steel facilities on June 19, 1946, and on that date the Geneva plant joined U. S. Steel's family. Steps were begun immediately to get the plant back into production.

Commenting on the sale, Senator Arthur V. Watkins, of Utah, said that "the entire West has benefited and will continue to benefit by reason of the purchase of the Geneva Steel plant by the United States Steel Corporation. For the first time in history, the Intermountain and Pacific Coast States were placed on a competitive basis with the rest of the United States.... The sale of the Geneva plant to the United States Steel Corporation is making it possible for the establishment of numerous fabricating enterprises in the Western States.... Out of these industries should come employment for hundreds of thousands of American citizens and an increased production of necessary commodities."<sup>1</sup>

In the fall of 1946, all the Utah operations of U. S. Steel were consolidated under the management of Geneva Steel Company with the exception of the iron mines which are still operated by Columbia Iron Mining Company, a separate U. S. Steel subsidiary. Columbia Steel Company, until this time, had retained management of such operations as Ironton and Columbia Coal Mine.

On January 1, 1952, Geneva Steel Company and Columbia Steel Company were merged into the Columbia-Geneva Steel Division of United States Steel Company, a newly organized operating unit of U. S. Steel. A year following this move, on January 1, 1953, United States Steel Company

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1. Douglas A. Fisher, Steel Serves the Nation. (New York. United States Steel Corporation, 1951), p. 44.

was dissolved and Columbia-Geneva Steel became a division of United States Steel Corporation.

#### Facilities and Production

Facilities at the Geneva Works (1955) include five blast furnaces, two of which are at the Ironton plant; six batteries of coke ovens, two of which are at Ironton; ten open hearth furnaces, rolling mills and auxiliary equipment. These facilities of the Geneva plant are located on a 1501-acre tract of fertile farm land 40 miles south of Salt Lake City, six miles northwest of Provo and are located on the shores of Utah Lake, eight miles from the Ironton plant.

The Geneva plant has three blast furnaces with 1100 net tons daily capacity each, making a combined yearly total of 1,200,000 net tons of pig iron. These furnaces are 95 feet high with a bosh of 29 feet diameter and a hearth of 26 feet. This represents a considerable departure from the typical blast furnace design, but is in harmony with the general trend in the industry with some special modifications to fit the peculiarities of the Utah raw materials.

The Coke plant has 252 by-product ovens in four batteries with an annual capacity of 1,094,000 tons of coke which will require 1,595,000 tons of coal. The experience gained in the coking of Utah coal at the by-product plant at Ironton furnished the basis for an adaptation in design to fit the special characteristics of Utah coal. The coking plant is supplemented by the appropriate by-product facilities to recover and handle the coke oven gas, coal tar, toluol, zylol, benzol, motor fuel, light oils, solvent naphtha, naphthalene and sulphate of ammonia. Extensive use is made of these by-products to generate steam and to

provide the heat for the open hearth furnaces, soaking pits and the various reheating furnaces.

There are ten open hearth furnaces with a combined annual capacity of 1,879,000 net tons of steel ingots.

The rolling mills at Geneva are the largest in the West and include the Slab Mill, Plate and Strip Mill, Structural Mill and a comparatively new Sheet Mill. The Rolling Mills and the Coke Plant are the principal sources of revenue to the Corporation -- the other areas merely serving as a means to an end.

Currently the 45-inch mill is turning out slabs (the primary process of plates, strip and sheets) at the rate of 1,618,400 net tons a year. The same mill is also turning out blooms and billets (the primary process of structural shapes) at the rate of 160,000 net tons a year.

The Plate and Strip Mill utilized the slabs to run out plate and strip. The Geneva 132-inch plate mill is one of the widest mills in the country and in the industry. This plate mill is officially classified as a semi-continuous mill. Plate production stands at 523,000 net tons a year, with the strip mill producing hot rolled coils at the rate of 1,280,000 net tons per year. Hot rolled sheets of light gauge are produced at the rate of 281,700 net tons.

Structural shapes produced at the Geneva plant are running at 404,700 net tons a year. However, this mill is the first to feel any contraction in the industry and in normal periods may be out of production for a number of months each year. Recently, in the peak year of 1955, a paradoxical economic phenomenon developed in that due to this boom the Structural Mill was removed from production for 30 days

TABLE NO. 5  
**COLUMBIA-GENEVA STEEL DIVISION**  
 UNITED STATES STEEL CORPORATION  
 GENEVA, UTAH

**ESTIMATED ANNUAL CAPACITIES  
 GENEVA PLANT**

PLANT AREA .....1502 Acres

COKE PLANT—252 OVENS

Blast Furnace Coke .....	1,012,300 N. T.
Domestic Coke .....	8,300 N. T.
Pea Coke .....	12,500 N. T.
Breeze .....	62,100 N. T.

BLAST FURNACES—3.....

Pig Iron .....	1,200,000 N. T.
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OPEN HEARTH—10 FURNACES

Steel Ingots .....	1,879,000 N. T.
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ROLLING MILLS

(a) Slabbing and Blooming Mill

Slabs .....	1,618,400 N. T.
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Blooms and Billets .....	160,000 N. T.
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(b) Plate — Strip Mill

Plates .....	523,200 N. T.
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Strip - Hot Rolled (Coiled).....	1,280,900 N. T.
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Sheets - Hot Rolled (Black).....	281,700 N. T.
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(c) Structural Mill

Shapes, etc. ....	404,700 N. T.
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**RAW MATERIALS REQUIRED**

Coal .....	1,595,700 N. T.
Pitch .....	24,300 N. T.
Iron Ore .....	2,397,300 N. T.
Limestone and Dolomite .....	444,000 N. T.

in June in order to shunt steel into plate and strip production. This resulted in about 150 men being laid off for this period. Table IV in the Appendix shows the products and customer uses of the structural shapes produced.

The simple arithmetical computations resulting from the sale of the previously mentioned tonnages multiplied at well over one hundred dollars a ton runs into multi-millions each year. Through accounting experience at the Geneva plant the author has heard the fact mentioned that the products of the Geneva Coke plant cover the cost of operation for the plant and that the revenue derived from the plate, strip, sheet and structural mills are over and above the costs involved.<sup>1</sup>

Remoteness from the industries customarily servicing the steel mills has required the installation of unusually complete repair facilities at Geneva. Foundries for the making of ingot molds and rolls have been provided. All of the necessary equipment to produce and maintain the rolls and other facilities has been installed.

The maintenance shop is unique in that all repairs and maintenance will be centered in it, thus eliminating the necessity of smaller shops around the plant site. It is probably the largest building of its kind in Western America purposely constructed to serve one industrial plant.<sup>2</sup>

#### Vital Factors

In the establishment of any industrial plant, and especially of one the magnitude of Geneva, certain vital factors must be taken into

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1. Of course this could never be verified due to the close security regulations imposed by the United States Steel Corporation. However, and in any event, much revenue is derived from the coke oven by-products enumerated on page 28.
  2. The Herald (Provo, Utah), July 19, 1943.



consideration. Obviously, the relationship of land, labor, and capital was very important. But, why was Utah Valley chosen as the site for this particular plant? It was chosen because it presented the certain basic combination of dynamic factors that was necessary to a plant of this type. Following are the main characteristics the government and steel technicians felt were of prime importance. Several of these characteristics are basic to many of our intermountain industries, but some are peculiar to the time element or the particular industry.

#### Decentralization

The choice of Utah Valley in its western location was part of a plan to decentralize the new war plants. The greater comparative safety from bombing or possible invasion made an inland location desirable. It was also a precaution against a possible closing of the Panama Canal by enemy attacks, which would have severely affected the steel supplies of Pacific Coast shipbuilders.

Before the origin of the Geneva plant, political agitation had been underway to decentralize heavy industry into the intermountain region. This agitation continued throughout the 40's and is also continuing on through the 1950's. The late Senator McCarran (D-Nev) was a staunch advocate of this decentralization factor -- not so much for decentralization per se -- but to establish industry in the West. The following Associated Press dispatch was typical of his never ending quest to deploy industry to the West.

WASHINGTON - (AP) - Senator McCarran, often referred to as the leader of the Senate's so called "silver bloc," proposed today the formation of a new "bloc" to promote "decentralization of iron and steel production."

In letters to 55 other senators, McCarran wrote:  
"It is my hope that you will consider active participation in a coalition, or bloc, non-partisan in

nature embracing as many as possible of the senators from states which, like yours and mine, have not now their fair share of iron and steel production and the heavy industry which follows such production."

Objectives of the group, he declared, would be to foster new and expanded facilities for production of iron and steel in areas outside the few acknowledged "steel centers" which he said now account for about 90 per cent of the country's iron and steel output. (1)

In the light of world tension, decentralization of the industries of the United States was considered by government and industrial experts to be a desirable, even necessary objective. The establishment of operations in Utah Valley seemed to meet the objectives of this consideration, yet would not sacrifice any of the advantages in transportation, raw materials, labor supply, and of the other necessary factors in doing so.

This decentralization factor is as prevalent in 1956 as in 1943. With the present, and very probable future international tension of the "cold war" continuing, this decentralization factor will continue in importance. Utah County and the Intermountain West in general offer this particular factor which is now considered an essential and vital factor to our national security.

Under the general industrial mobilization program planned for the United States, special emphasis is placed by military authorities on the idea of dispersion. Small, inland towns are to be given special consideration in this matter of decentralization.

#### Transportation

Vital to every plant the magnitude of Geneva is transportation. One of the prime factors in locating the Geneva plant in Utah Valley

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1. Deseret News (Salt Lake City, Utah), July 3, 1943.

was that major railway lines of the area converged at a point adjacent to the proposed site; or more specifically, the site was proposed because this was one of the several major factors involved.

Utah Valley is directly served by two major railroads, the Denver and Rio Grande Western and the Union Pacific, both from east to west as well as from north to south. These tracks parallel each other for almost the entire length of the valley. The small Utah Railway operates between certain Carbon County coal fields and Utah Valley.

The Union Pacific system serves all the west from this area, running to all points in the Northwest, Washington and Oregon, as well as southwest into Los Angeles and other Southern California points, north into Idaho and Montana, and east to Omaha.

The Rio Grande serves Utah Valley from the east with its connections with the Burlington, Rock Island, and Santa Fe at Denver, and the Missouri Pacific and Colorado Southern at Pueblo. Westbound the Rio Grande and the Union Pacific both have direct connections with the Western Pacific at Salt Lake City and Southern Pacific at Ogden, serving California, Oregon, Washington and the Northwest.<sup>1</sup>

All lines have a reciprocal switching agreement in the area. Provo is a Utah common point for all rate making purposes, thereby making Utah Valley competitive on all rates into this area.<sup>2</sup>

An interesting observation is that since the valley is about 38 miles long and there are two railroads running side by side, there should

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1. Utah County Planning Commission, Utah Committee on Industrial and Employment Planning, Greater Utah Valley, Inc., Your Plant Location Opportunities in Greater Utah Valley, Utah, p. 7.
  2. Ibid., p. 7.

theoretically be about 76 miles of railroad through the valley. Railroad mileage within the plant site will be 65.<sup>1</sup> In the many years since this original figure was released many miles of track have been laid in the plant area for new buildings and larger slag dumps, with the track mileage within the plant, at least theoretically, as being greater than that for the entire valley.

Utah Valley is also served by four major federal highways in addition to a network of improved state and local highways. United States highways No's. 6, 50, 89 and 91 converge within Utah Valley, providing convenient highway connections with any point in the United States. Three national interstate bus lines dispatch 34 buses from the valley daily to all points in the United States. Utah Valley is served by five major truck lines with motor transport service. The truck lines with their interchange and trailers serve all points in the United States, also.

Airlines radiate in seven directions from Salt Lake City, located 40 miles to the north. In addition, there are two airports in the valley itself. The Provo airport has a Department of Commerce rating of No. 4, three-surfaced runways 7,000 feet, 6,800 feet and 5,800 feet long. It has no scheduled flights but provides charter service to all points. The Springville-Spanish Fork airport has a 4,000 foot runway and is used by private and charter planes.

#### Labor

In analyzing the labor force of Utah Valley before the inception of Geneva we find it is much the same as any typical community of Utah's

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1. Salt Lake Tribune (Salt Lake City, Utah), August 22, 1942.

TABLE NO. 6  
RAILROADS  
SERVING UTAH VALLEY

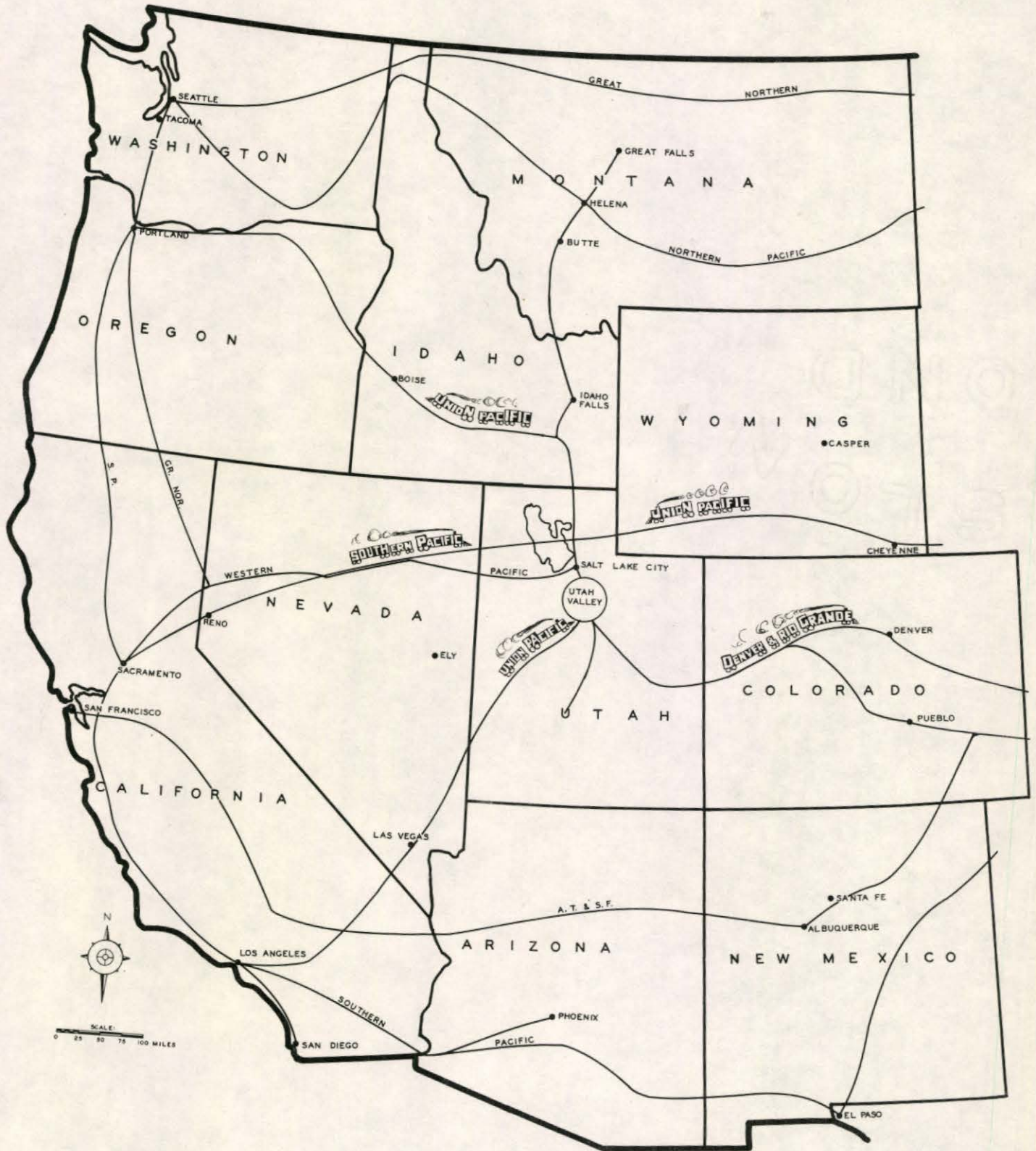
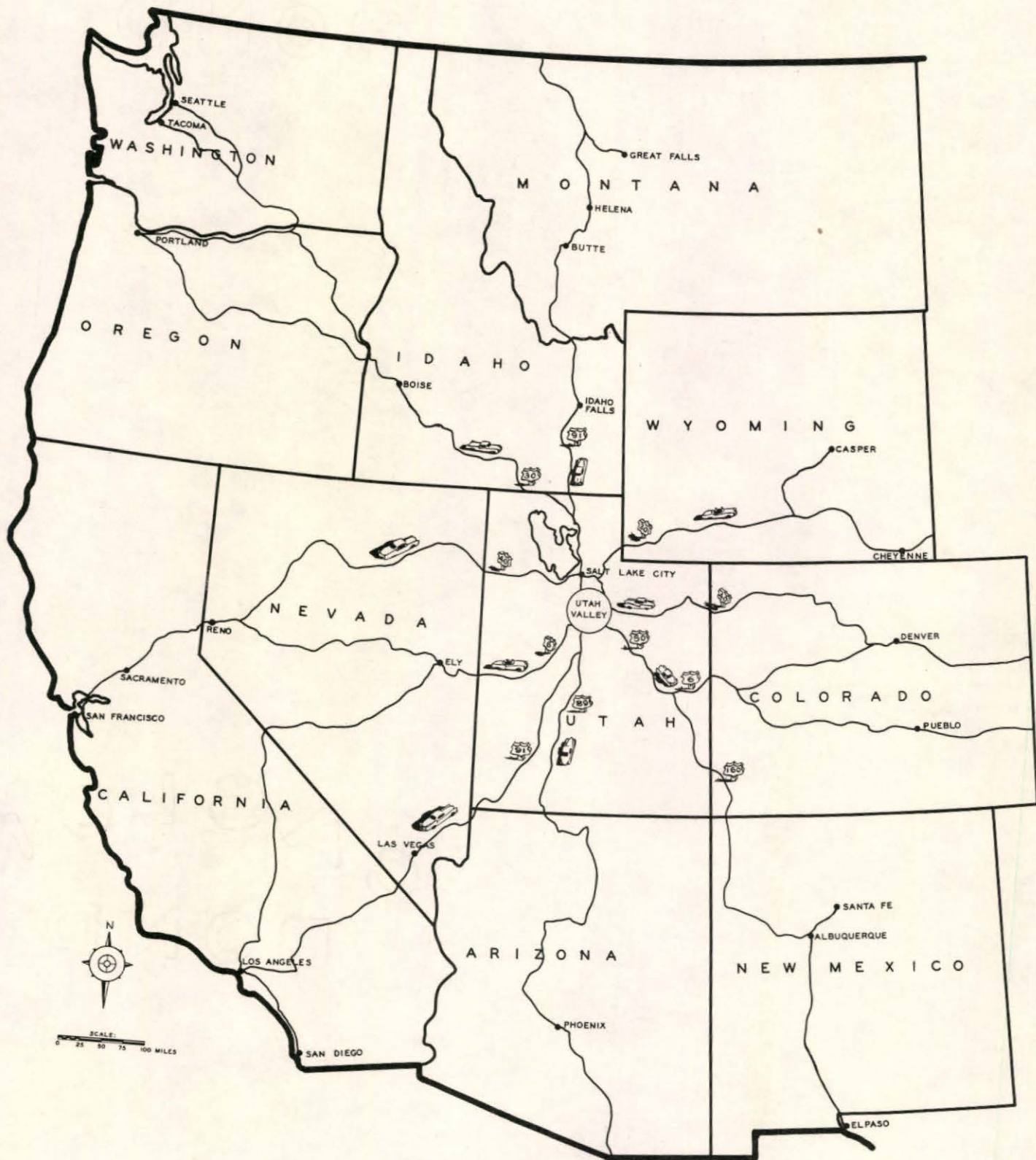


TABLE NO. 7  
FEDERAL HIGHWAYS  
SERVING UTAH VALLEY



Mormon society with perhaps the exception that somewhat more industry being located there.<sup>1</sup> Largely due to this Mormon sociological influence the population patterns, and consequent labor patterns, for Utah and Utah Valley are somewhat different from those of other areas in the nation.

A characteristic in Utah Valley is the small percentage of population actually in the labor force. This is due to: (1) the large percentage of population under working age; (2) large percentage of population attending college; (3) small percentage of women employed.

Nationally, up to 41 per cent of the total population is in the labor force, while in Utah Valley it more nearly approaches 31 per cent. Nationally, from 50 to 55 per cent of the population over 14 years of age is in the labor force, while in Utah Valley less than 47 per cent of the same age group is in the labor force.<sup>2</sup>

The presence of all these factors tend to produce a labor force which is high in productivity, low in turnover and absenteeism, highly versatile, easily trained and amiable in its industrial relations with management. These points are substantiated by the following unsolicited comments made by industrial leaders of national firms now located in the valley.

Mr. Ben G. Weiss, executive vice-president of the Barbizon Corporation, New York, said in January 1948, after operating a plant in Utah

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1. Until the past decade Utah Valley was predominantly a farming area, ranking as Utah's number one agricultural county. There was only a small amount of industrial activity. Beyond this, business activity was pretty largely represented by merchandising and servicing establishments.

In 1922 the Columbia Steel Corporation of the Pacific Coast erected a blast furnace and by-product coke ovens as previously enumerated in the text. In the same year the Republic Cresoting Company erected a plant to take the coal tar from the coke oven operations. In 1926 the Pacific States Cast Iron Pipe Company erected a plant adjacent to the blast furnace. Other nationally prominent corporations operating in this area are Consolidated Western Steel, Del Monte Foods, General American Transportation Company and the Illinois Powder Company.

2. U. S. Bureau of the Census. Population: 1950.

Valley for one year and a half, that: "We find Utah workers competent, industrious, intelligent, apt, interested in their work, highly adaptable. They are in every way, the most desirable type of labor.... We will build a new and much larger plant and make this point the headquarters for all our western operation."<sup>1</sup>

Mr. Walter Mathesius, former President of Geneva Steel Company, said of Utah Valley labor: "The labor force of Geneva, Utah, 75 per cent of whom had never seen the inside of a steel plant before going to work for this company, have learned their jobs in record time and settled down quietly and effectively to set a series of excellent production records to which U. S. Steel proudly points."<sup>2</sup>

These factors indicate the somewhat unique structural nature of labor in Utah Valley.

#### Water

Since much of our Intermountain West has not been richly, or even moderately endowed with water, industry can only migrate to those places where adequate water supplies exist. Water has been a problem here in Utah for countless ages, yet it was only a problem of agriculture until these latter days; now it is an acute problem of industry. Steel installations the magnitude of Geneva require tremendous amounts of water, and this particularly vital factor was one of the primary reasons Utah Valley was chosen as the plant site.

To show the extensive use of water at Geneva we find the statistics on it relate that water circulates at the rate of 200,000 gallons per

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1. Op cit., Utah County Planning Commission. p. 5.

2. Ibid., p. 5.



minute through the plant system. Of this, 10,000 gallons per minute is consumed and 2,225 gallons per minute is lost due to evaporation.<sup>1</sup> A total of 204,000,000 gallons of treated water is circulated daily and 22,000,000 gallons of untreated water is used daily.<sup>2</sup> The entire Salt Lake City municipal water system in 1950 distributed a daily average of 45.3 million gallons, which was about one-fifth the amount pumped daily at Geneva and only twice as much as is actually consumed by Geneva in a day.<sup>3</sup>

Geneva has three main sources of water supply: (1) irrigation rights to 15,000 gallons per minute; (2) artesian wells producing 5,000 gallons per minute; and (3) the Deer Creek reservoir, furnishing 5,000 gallons per minute.<sup>4</sup>

The Geneva plant impounds the necessary water needed for operation in a 312 acre reservoir averaging eight feet in depth, which is located on the west side of the plant next to Utah Lake. It has a capacity of 2,274 acre feet or 745,000,000 gallons. The water store in the 312 acre Geneva reservoir is treated with approximately 100 tons of metaphosphate annually, in order to inhibit corrosion and scale, and with 112,000 gallons of sulphuric acid to reduce scaling.<sup>5</sup>

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1. Salt Lake Tribune (Salt Lake City, Utah), July 16, 1950.
  2. The term of treated and untreated water may be confusing to those readers not intimately associated with the steel industry. A "treated" water figure may be misleading also as it is the same water recirculated many times through screens and filters which remove the "scale" and impurities from the water. An "untreated" water figure is simply that water run into the system from the ordinary source of water supply.
  3. L.V. Riches, The Steel-Using Industries of Utah (Unpublished Masters Thesis, University of Utah, 1951), p. 29.
  4. Op cit., Utah County Planning Commission, p. 12.
  5. Myron E. Strate, Electrical Engineer, Geneva Steel Company, Conversion of the Facilities of Geneva Steel Company to Peacetime Operations. (August 20, 1951) p. 9.

In Utah Valley culinary water rates are among the lowest in the nation. Each of fifteen incorporated cities and towns has its own water system and almost all culinary water comes from natural springs located in the canyons to the east of the valley. Little or no treatment is required in order to meet U. S. Public Health Standards, and, since elevations of the springs are considerably higher than the valley, pumping costs are almost nil.

Water for irrigation and other purposes comes principally from snow-fed streams, reservoirs, and natural springs not used for culinary purposes.

In addition to the mountains as a source of water supply, the entire floor of Utah Valley is underlaid with several water-bearing strata from which water is obtained by drilling wells. Depth of the strata varies from 60 feet to over 1,200 feet. Wells yielding up to 1,000 gallons per minute have been in operation in the valley for a number of years without adverse effect on the water table.<sup>1</sup>

Existing reclamation projects, including transmountain diversion from the Colorado River watershed, now augment the valley's water supply; and it is expected that water from this source will continue to increase as need arises.

#### Raw Materials

The literature, writing, and material dealing with those raw materials affecting iron and steel is tremendous, both in quantity and quality. The Intermountain West has been richly endowed with the mineral resources necessary to operate a plant the type we are here concerned with. Over

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1. Op cit., Utah County Planning Commission. p. 12.

200 different minerals and the world's largest open pit copper mine are located in the immediate vicinity of Utah Valley.

Utah Valley has access to coal reserves, most of which are within 75 miles, totaling over 92 billion tons. Recoverable reserves, based on 50 per cent recoverability, total over 46 billion tons or enough to supply the entire United States need (611 million tons per year) for 76 years.<sup>1</sup> These coal reserves are largely of a bituminous and semi-bituminous character.

The mineral production figures for Utah released by the Bureau of Mines report shows coal production was by far the most important of the mineral fuels, and the value (\$27,985,000) in 1954 was 11 per cent of the state total mineral output.<sup>2</sup>

This readily available supply of coal together with low transportation costs make the delivered price of coal to Utah Valley compare favorably with any other section of the United States. The typical rate for dry slack coal, delivered in Utah Valley as of December 1, 1954, was \$6.90 per ton. This includes a charge of \$4.65 for the coal and \$2.25 for freight.<sup>3</sup> This compares very favorably with the price of eastern coal (f.o.b. mines), but the comparative economic advantage to Geneva comes in the fact that transportation costs per ton of coal is much less than the per ton cost to the Southern Lake Michigan plants.<sup>4</sup>

Coal for the Geneva plant is drawn primarily from the Columbia Coal Mine and the Geneva Coal Mine. The Geneva mine, when it was opened, was

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1. Op cit., Utah County Planning Commission. p. 11.
  2. United States Department of Interior, Bureau of Mines. Mineral Industry Surveys. Area Report D-38 (Preliminary). Mineral Industry Division, Region IV, December 23, 1954.
  3. Op cit., Utah County Planning Commission, p. 11.
  4. Bureau of Economic and Business Research, Utah Economic and Business Review. The Western Steel Industry (University of Utah, June, 1944), Vol. 3, No. 1, p. 11.

the largest in the state. These mines, located 130 miles from Geneva in the Carbon area now supply all the coal for coking. The Columbia Coal mine is in Carbon County, Utah and the Geneva Coal mine is located at Horse Canyon in Carbon and Emery Counties. The coal required for the Geneva plant is estimated at 1,595,700 net tons per year.<sup>1</sup>

Utah is particularly well endowed with iron ore and in particular the fact that it is of superior quality. It is difficult to arrive at a completely satisfactory estimate of ore reserves in Utah as exploration is a new continuous process, but it has been estimated that there is a 75-year reserve of iron ore in Utah. Much latitude must be expressed with this estimate as most exploration has not been carried out to the point of revealing the nature and extent of a considerable portion of the deposits about which some information is already available. There has been relatively little underground exploration, and this has been confined to only a few of the deposits where surface exposures of promise have been provided by nature.

Shipments of iron ore have been estimated at 2,930,000 tons in 1954.<sup>2</sup> This was a drop of 36.5 per cent from 1953,<sup>3</sup> due to the decrease in demand for Utah's pig iron on the West Coast, which caused the Ironton pig iron plant to be idle most of the year, and from less iron ore needed at the Geneva plant. In addition, the Geneva plant was closed during part of October, owing to a strike (Deer season). All of the 1954 iron ore output was magnetite ore, averaging 56.7 per cent iron, that came from 7 mines in Iron County, Utah.<sup>4</sup>

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1. See statistical table No. 5 of the Estimated Annual Capacities of Geneva plant. p. 30.

2. Op cit., Mineral Industry Surveys. p. 3.

3. Ibid., p. 3.

4. Ibid., p. 3.

The broad economic aspects of both mining and transportation costs to the Utah steel producer are extremely favorable. The high grades of ore and comparatively low transportation cost give a lower aggregate cost per ton than in the other steel producing areas. The cost per long ton of iron ore in Utah in 1953 was \$5.738 and \$5.750 in 1954.<sup>1/2</sup>

Perhaps the greatest difference in the cost of iron ore in Utah as compared with Minnesota is accounted for by the difference in the rate of taxation. In Utah, taxes will average 4 cents per ton as compared with a ten year average of 71 cents a ton for Minnesota iron ore.<sup>3</sup>

Iron ore for the blast furnaces and open hearths is shipped to the Geneva plant from Iron Mountain and Desert Mount near Cedar City about 252 miles by rail and is mined by the Columbia Iron Mining Company, a separate United States Steel subsidiary.

Another significant factor in the cost of transportation is that since the Geneva plant is some 2,000 feet lower in elevation than the Utah iron ore mines, and the route is through open territory with no intervening mountain barriers, the transportation problem is essentially an easy one. The emphasis upon the cheap water transportation furnished by the Great Lakes for the movement of the iron ore from Minnesota to the blast furnace centers at or between the southern lake ports and Pittsburgh is often emphasized to the extent of minimizing the actual transportation costs involved. Before this effective water transportation can be used, the Mesabi ore must be hauled by rail 77 rail miles

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1. Ibid., p. 9.

2. It must be noted that Utah ores occur in fairly large deposits exposed at the surface under conditions that are highly favorable to open pit power shovel mining, whereas, ore mined from the Birmingham district is taken from 3,000 to 5,000 feet down and approximately four tons of water must be pumped for each ton of iron ore produced. Furthermore, according to our analysis table, the Alabama ores average 37 per cent iron compared with 56 per cent for Utah which necessitates the mining and shipping of approximately one and one-half times as much iron ore for Alabama as for Utah.

3. Op cit., The Western Steel Industry. p. 16.

TABLE NO. 8

COMPARATIVE ANALYSIS OF IRON ORES  
(Percentages)

	<u>Birmingham ore</u>	<u>Mesabi<sup>a</sup> ore</u>	<u>Utah ore</u>
Iron . . . . .	36.64	52.07	56
Silica . . . . .	15.05	7.64	7
Alumina . . . . .	3.15	--	1
Lime . . . . .	15.09	--	4
Manganese . . . . .	0.17	0.64	0.196
Phosphorus . . . . .	0.33	0.06	0.2
Water . . . . .	2.07	11.45	3

a Includes 22.5 per cent concentrated ore.

Source: Utah Economic and Business Review, The Western Steel Industry. Bureau of Economic and Business Research, University of Utah: June, 1944. Vol. 3, No. 1, p. 18.

to the loading docks. When this is added to the railroad haul from the lower lake ports to Pittsburgh, there is involved a total rail distance of 200 miles compared to 252 miles from the southern Utah iron ore mines to Geneva, but, in addition, Pittsburgh has a water distance of 876 miles, all of which involves three loadings and unloadings, as compared with one in each case for the Utah iron ore.<sup>1</sup>

This results in more than double the cost of transporting the iron ore for Pittsburgh than is incurred for Utah. The cost of assembling iron ore for Gary in 1943 was approximately 20 per cent greater than for Geneva.<sup>2</sup> As a further offset, both the mining and transportation activities in Utah can continue without interruption during the winter while the transportation and, to some extent, the mining, are blocked for nearly five months each year for the Lake Superior ore.

The estimated annual iron ore requirement for the Geneva plant is 2,397,300 net tons.<sup>3</sup>

The two additional minor, but nevertheless important, raw materials of iron and steel production are dolomite and limestone. These are drawn from the Keigley Quarry, which is wholly owned by Geneva, and is located near Payson (35 miles from the Geneva plant) in southern Utah County. Production of limestone and dolomite in Utah County for 1954 was estimated at 579,000 short tons,<sup>4</sup> the majority of which was used for fluxing purposes at the Geneva plant.

### Markets

Today in our ever expanding economy, markets are constantly enlarging and becoming a more specific study in and of themselves.

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1. Ibid., p. 16.

2. Ibid., p. 16.

3. See statistical table No. 5 of the Estimated Annual Capacities of Geneva plant. p. 30.

4. Op cit., Mineral Industry Surveys. p. 5.

Markets, as we see them from our steel firm in Utah Valley, radiate in all directions, but primarily to the West. The following location map gives an excellent graphic survey of markets and distances.

In setting up this particular plant, the government and steel management noted the factor of strategic position in regard to the equidistance to ship yards in Los Angeles, San Francisco, Portland and Seattle who were to get the majority of production for ship building and repairing. The Geneva plant in Utah Valley is often likened to the hub of a wheel with the "spokes" going out to each major market. This has also held true for the post-war market as they are exactly the same markets.

Aside from the West Coast Market there is the developing area of the Intermountain West (the region between the Rockies and the Sierras) of which Utah is the center. "The West" is defined as the eight states of Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah and Nevada which constitute the Mountain States division of the United States census.<sup>1</sup> The constant influx of small fabricators and manufacturers into the area is ever increasing and holds a vast potential.

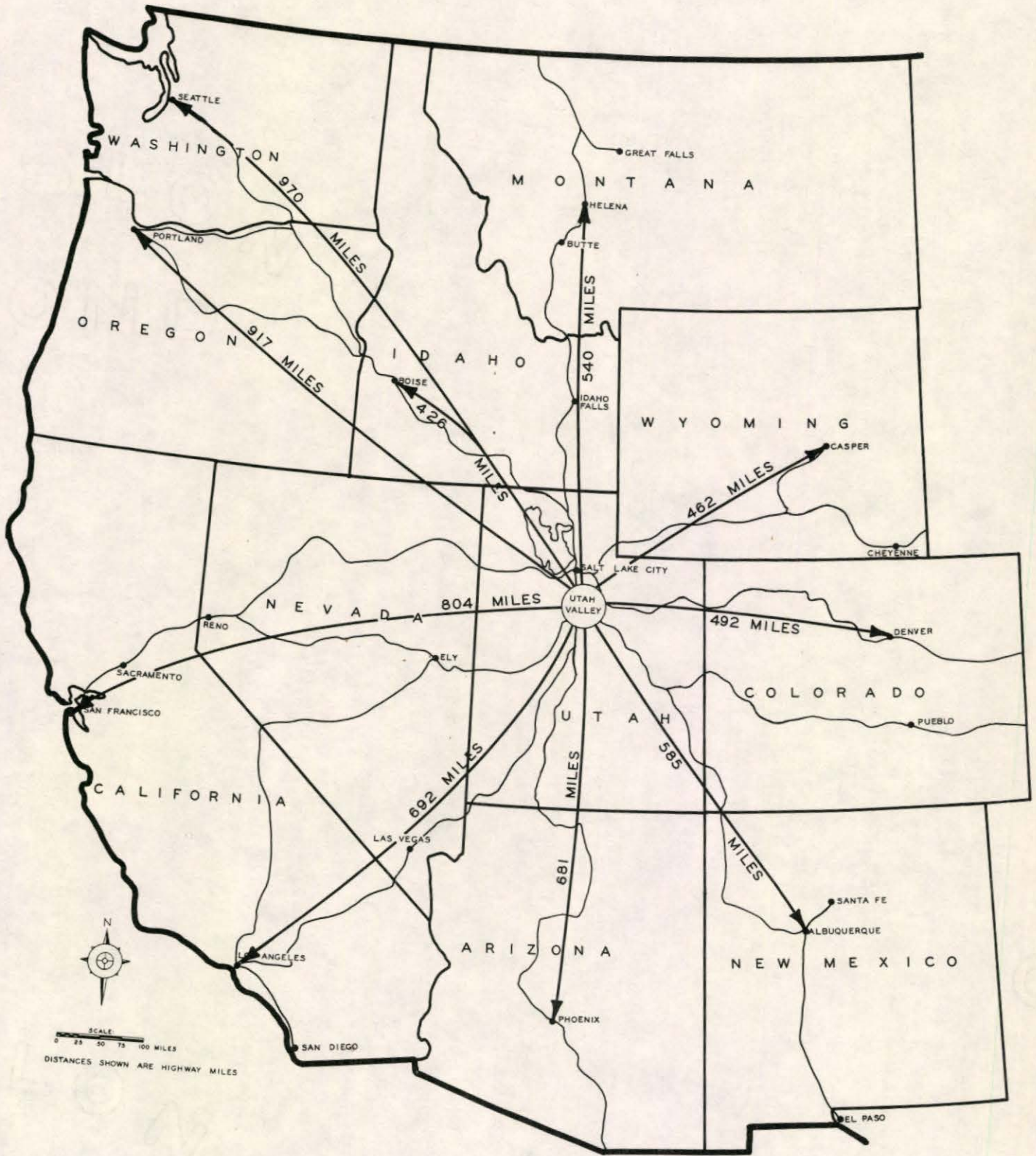
Economically speaking, since all revenue received by this plant is accumulated through the sale of its products, the markets determine the size of operations and the extent to which it can operate. This fact will hold true as long as Geneva is in the business of producing steel. The market, of course, ultimately depends primarily upon the comparative costs in the mining and transportation of the raw materials, on the appropriateness of the equipment to satisfy the special needs of the West and on the comparative freight rates for finished products from

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1. Morris E. Garnsey, America's New Frontier, The Mountain West. (Alfred A. Knopf, New York: 1950) p. 11.



TABLE NO. 9  
LOCATION MAP



western steel mills and the mills of competitors in other parts of the country.

Due to the extent of competition, marketing and sales data is a closely guarded area and one that the U. S. Steel Corporation rather reluctantly, if at all, releases information on. Due to this fact, information and data pertaining to Geneva's particular markets is rather limited.

#### Miscellaneous Factors

In this area of vital factors there are certain elements involved, which, while not of a vast nature, are important to the Geneva plant and the future economic growth of Utah Valley. Among these is electric power. While the power output of the Geneva plant per se is not particularly relevant to this study, the standby service arrangement existing between Geneva and the Utah Power and Light Company is of economic significance to the Valley. Under this arrangement if the Geneva plant power is interrupted Geneva can draw power from the Utah Power and Light Company lines, but more significant is the fact that by reciprocal agreement U. P. and L. can draw power from Geneva if an excess exists. Now while U. P. and L. has a steam electric generating station and six hydro-electric generating stations, with a combined capacity of 82,380 KW<sup>1</sup> to serve Utah Valley residents, the Geneva plant has a 50,000 KW<sup>2</sup> steam electric unit capable in itself of generating power for a city the size of Salt Lake.

Another more or less important factor, but one coming into increasing prominence is that of industrial sites. From early pioneer

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1. Op cit., Utah County Planning Commission. p. 9.  
2. Op cit., The Western Steel Industry. p. 35.

times, the people of Utah Valley have recognized the need for planning, not only for industry but for city growth and development. Consequently, nearly all cities in the valley, as well as unincorporated areas, are covered by Uniform Building Code and Zoning Ordinances. Industry is protected in the zones in which industry is permitted. Residences are protected in the zones in which residences are permitted.

A zoning ordinance affecting Utah County has been under preparation for the past several months, it was officially adopted Tuesday by the Utah County commission.

The ordinance, the first of its kind in the State, provides for appointment of a county building inspector and sets up restrictions for land uses throughout the county. (1)

Utah Valley has an abundance of available industrial sites. Large areas throughout the Valley have been designated for future industrial expansion. All sites are located on well drained, graded soil, which will support large structures, and are adjacent to railroads, highways, water, sewer and power lines. The following map shows the areas zoned for industrial use and their location with respect to railroads, highways, etc. (2)

With the increasing importance of small fabricating plants coming into the orbit of Geneva, this factor of zoned sites is coming more and more into the fore. The Utah County Planning Commission has been working on this factor for many years.

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1. Payson Chronicle. November 20, 1942.
  2. Op cit., Utah County Planning Commission. p. 14.



## CHAPTER III

## FARMING IN UTAH VALLEY

## Agricultural Economics

In the very beginning of economic endeavors in Utah, when Brigham Young led the Mormon people into the Great Salt Lake Valley, agriculture was of primary importance in supplying sustenance for that group. As the population increased, agriculture became more and more firmly established as the principal means of income, over and above its role as the supplier of necessities for physical existence.

Over the years agriculture increased steadily in importance until the inception of the Great Depression during the 1930's. During this period prior to the 1940's, employment opportunities in agriculture, mining, industry and commerce failed to keep pace with population and resulted in pressure upon the land and migration of Utah people, particularly youth, to areas outside Utah where employment opportunities were more favorable. Between 1930 and 1940 Utah-born people increased in every state of the union except Vermont, Iowa, South Dakota, Oklahoma, Idaho and Arizona.<sup>1</sup> During this same period the farm population of Utah was declining, while the rural nonfarm and the urban population was increasing. A study dealing with net migration from farms between 1930 and 1940 shows that Utah's net was -26.6 per cent. Stated as a percentage without regard to numbers, this shows a rate exceeded only by the states of North and South Dakota.<sup>2</sup> The total out-migration for Utah,

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1. Joseph A. Geddes, Migration, A Problem of Youth in Utah. Utah State Agricultural College Experiment Station, Bulletin 323, Logan, Utah. May, 1946. p. 3.

2. Ibid., p. 5.

on the other hand, for the period 1935-1940 was 43,218, as against an in-migration of 30,826.<sup>1</sup> Thousands of young men and women who had graduated from Utah's high schools and colleges were forced by sheer economic necessity to leave the state and to seek more promising opportunities for a decent living elsewhere.

While this forced migration continued and agriculture in the state remained the predominantly important provider of sustenance, payrolls, and taxes, this particularly disturbing element began to be felt in the state's economy. Families and population of individual farms were shrinking, and consequently the value of farm property was also shrinking. Farms were not maintaining their position as profitably productive enterprises.

The total out-migration from Utah farms between 1935 and 1940 was 8,257 and the in-migrants 6,902. Thus, while the net out-migration of rural farm people between 1935 and 1940 was only 1,355, the total number of farm people in the state fell from 106,667 in 1930 to 94,352 in 1940. In the meantime the rural nonfarm population increased from 134,916 in 1930 to 150,465 in 1940.<sup>2</sup> As this trend continued, many of those who lived on marginal farms became financially burdened by debts and mortgages and sought relief by securing employment in the fields of business and industry. Many of these farmers sought only to supplement their farm income in order to keep their heads above water and their families fed and clothed during what they hoped would be only a temporary economic stringency. Others, though, gave up their farming for good and sought

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1. Ibid., p. 5.

2. Ibid., p. 6.

entirely new means of livelihood in business and industry. This was prior to the 1940's.

Since the 1940's, largely due to the war effort and inception of the Geneva plant into the valley, agriculture and farming has taken on a new complexion. Marginal, and often what appeared to be sub-marginal land, was brought into cultivation on a rather extensive scale. Irrigated farm land doubled and tripled in value, and dry farming was brought into more extensive use than ever before.

During this same period since the 1940's, industry and commerce were also taking on a new look. Manufacturing was also flourishing alongside this agricultural prosperity. (See Table No. 30). Employed workers in non-agricultural activities in Utah increased from 127,000 in 1940 to 193,000 in 1943.<sup>1</sup> The level in 1949 was some 35 per cent above that for 1940.

Statistical records of the State Department of Employment Security for the State of Utah shows that the number employed in agricultural pursuits in 1940 in Utah County was 3,142 persons, but in 1950 the figure jumped to about 5,200. Thus in Utah County the level of agricultural employment in 1950 was 40 per cent above that of 1940.

Similarly, the influence of industrial growth on Utah County's agricultural activity is indicated by the statistics of the United States Department of Agriculture. According to these records, in 1940 approximately 30 per cent of the total 1,278,720 acres of land in Utah County was being used for all of the various types of agricultural purposes. In 1945 the amount of land used for these same agricultural

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1. These data do not include private agricultural workers, proprietors, firm members, self-employed persons, casual workers, domestic workers and employees of religious and non-profit organizations.

purposes jumped to 54 per cent. Also, in 1940, only 255,793 acres of land which were being utilized in the production of agricultural commodities were owned by farmer-operators. In 1945, the acreage of farmland owned by farmer-operators had jumped to 427,884 acres. During the same period from 1940 to 1945, the number of farmer-operators in Utah County under 35 years of age increased by 23 per cent, and the number between the ages of 35 and 54, by 41 per cent.<sup>1</sup>

It is recognized that not all of this substantial improvement in the farm economy of Utah County can be directly attributed to the growth of industrial and manufacturing plants, such as that at Geneva. It is fully recognized that World War II and the generally good demand for farm products led to much of the increase.

In spite of increases in industry and commerce, agriculture remains one of the mainstays in the economic life of the state and one of the principal occupations. In 1949, some 17 per cent of all employed persons were engaged in agriculture. This may be compared with 18 per cent in wholesale and retail trade; 12 per cent in manufacturing; 10 per cent in government service and schools; 9 per cent in transportation, communications, and utilities; 8 per cent in finance, service, and miscellaneous; 8 per cent self-employed; 6 per cent in civilian employment in military establishments; 5 per cent in mining; 4.5 per cent in construction; and 2 per cent in non-profit and religious organizations.<sup>2</sup>

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1. Walther Mathesius. "Remarks by Dr. Walther Mathesius, President, Geneva Steel Company, Before the Payson Chamber of Commerce and Other Service Clubs at Payson, Utah." January 25, 1951. Typed copy in possession of the writer.
  2. L.A. Reuss and G.T. Blanch. Utah's Land Resources. Utah State Agricultural College Experiment Station, Special Report No. 4, Logan, Utah. June 1951. p. 3.



### Growth of Agriculture

Although Utah County ranks sixteenth in the state in point of total land area, it ranks first in number of farms and acres of irrigated cropland. It led the state as to the highest value of farm products sold in 1949, followed second only to Cache County in value of dairy products, and had the highest number of farms with both electricity and telephones. Statistics further show that this county had the most automobiles on farms, most motor trucks and the most tractors. It contracted for more hired labor and ranked second only to Box Elder County in the number of cattle and calves of all ages. Finally, of interest and economic significance is the fact that Utah County ranked first in the number of farm operators reporting 100 or more days of off-farm work in 1949.<sup>1</sup> Table No. 11 and 12 gives the relative comparison of the preceding factors for the selected counties of Box Elder County, Cache County, Utah County, Weber County and the State for the years 1940-1950.

#### Land Use

Of the total land area of 1,278,720 acres in Utah County, approximately 388,693 acres or 30.4 per cent were recorded in farmland in 1940, but, according to the 1950 Census of Agriculture, the farmland area had increased to 571,000 acres or 44.7 per cent. Although it is a fact that large areas of marginal lands have been brought into production in the county in the last decade, largely due to the war effort, we find that

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1. This specific factor is dealt with more fully in a succeeding section on the effect of Geneva on agriculture in the county.

TABLE NO. 11

SPECIAL AGRICULTURAL ITEMS FOR SELECTED COUNTIES  
(1950)

	<u>Utah</u>	<u>Box Elder</u>	<u>Cache</u>	<u>Weber</u>	<u>State of Utah</u>
Number of farms	3,191	1,693	2,085	1,552	24,176
Irrigated farms (acres)	2,912	1,432	1,764	1,422	21,126
Acres of irrigated cropland	424,300	768,707	278,327	440,117	8,150,554
Value of farm products sold in 1949 (dollars)	3,980,112	7,120,551	3,776,949	2,256,441	37,343,827
Value of dairy products sold in 1949 (dollars)	1,660,333	1,271,871	2,882,905	1,511,319	16,373,071
No. farms with electricity	3,018	1,604	2,033	1,564	21,602
No. farms with telephones	1,845	1,013	1,499	1,158	12,515
Automobiles on farms	2,748	1,731	2,271	1,906	20,773
Motor trucks on farms	2,135	1,536	1,142	940	15,352
Tractors on farms	1,992	1,833	1,502	1,108	15,997
Hired labor	833	813	484	520	7,432
No. of cattle and calves	42,117	44,406	35,749	23,819	561,566
No. of farm operators reporting 100 or more days of off-farm work in 1949	1,439	396	601	719	8,838

Source: United States Bureau of the Census. United States Census of Agriculture, 1950.  
Counties and State Economic Areas, Vol. I, Part 31. (Washington, 1952).

TABLE NO. 12

COMPARATIVE AGRICULTURAL STATISTICS BY SELECTED COUNTIES  
(1940--1950)

	<u>Utah</u>	<u>Box Elder</u>	<u>Cache</u>	<u>Weber</u>	<u>State of Utah</u>
Land area, 1950, approximate acres	1,278,720	3,580,160	752,000	341,360*	52,701,440
All land in farms, acres, 1950	571,588	1,245,896	388,784	490,000*	10,856,497
All land in farms, acres, 1940	388,693	688,877	329,962	414,282*	7,302,007
Proportion in farms, per cent, 1950	44.7	34.8	51.7	139.4	20.6
Total number of farms, 1950	3,191	1,693	2,085	1,552	24,176
Average value per farm, 1950 (dollars)	17,071	30,361	20,834	18,513	19,146
Average value per farm, 1940 (dollars)	5,254	9,966	8,076	7,949	6,074
Average value per acre, 1950	109.24	44.68	107.08	54.63	47.67
Average value per acre, 1940	41.29	26.11	55.14	32.48	21.14
Value of crops, 1950 (dollars)	3,980,000	7,121,000	3,777,000	2,256,000	37,344,000
Value of dairy products, 1950 (dollars)	1,660,000	1,272,000	2,883,000	1,511,000	16,373,000
Value of livestock other than dairy or poultry (dollars)	3,922,000	3,638,000	2,432,000	2,085,000	51,961,000

(Continued)

\*The excess of farm acreage over approximate land area is due to the fact that the entire acreage of a farm is tabulated in the county in which the headquarters is located, even though a part of the farm may be situated in an adjoining county.

TABLE NO. 12 (CONTINUED)

COMPARATIVE AGRICULTURAL STATISTICS BY SELECTED COUNTIES  
(1940--1950)

	<u>Utah</u>	<u>Box Elder</u>	<u>Cache</u>	<u>Weber</u>	<u>State of Utah</u>
Value of poultry and poultry products - 1950	3,492,000	1,192,000	2,071,000	665,000	24,568,000
Area irrigated, acres, 1950	424,300	768,707	278,327	440,117	8,150,554
Farm and operator family level-of-living index, 1950	145%	165%	168%	163%	133%
Farm and operator family level-of-living index, 1940	101%	115%	122%	130%	90%

Source: U. S. Bureau of the Census.  
Agriculture. 1940 and 1950.

in spite of the fact that the war has been over for ten years, the number of acres in production is still impressive.

Three areas of the county once extensively farmed through the 1920's and early 1930's, then abandoned during the depression period along in the latter 30's, and then once again brought into extensive cultivation during the war were the Mosida and Cedar Valley districts, west of Utah Lake, and the Elberta area in the southeast corner of the county. The latter district was brought into extensive use with the inception of the Deer Creek reservoir, a Federal project, which brought much-needed water to lands in the northern part of the county adjoining Salt Lake County.

#### Size and Number of Farms

Similarly, the census figures for the average size of farms (179.1 in 1950, 172.1 in 1945 and 127.2 in 1940) must be qualified in the light of commitment of marginal and submarginal land into production in these latter years. A better picture of farm unit size would be had by excluding the dry farm and grazing acreage, and the resulting average size would likely be less than 150 acres per farm for the irrigated areas.

Intensive rather than extensive cultivation is the rule, with over 80 per cent of the farms containing less than fifty acres per farm (See Table No. 13). The number of farm units has increased steadily since 1900, reaching 4,004 in 1935 and standing at 3,191 in 1950 (See Table No. 14).

Irrigated farms in Utah County in 1950 numbered 2,912 or 91.3 per cent proportion of all farms. Land in irrigated farms was 424,300, giving an average of 145.8 acres per irrigated farm.

TABLE NO. 13  
 NUMBER AND SIZE OF FARMS, UTAH COUNTY  
 1920--1950

<u>Acres</u>	<u>1920</u>	<u>1930</u>	<u>1935</u>	<u>1940</u>	<u>1945</u>	<u>1950</u>
1 acre to 9 acres	428	761	956	*	1,439	954
10 acres to 19 acres	529	549	719	*	589	519
20 acres to 49 acres	1,145	1,135	1,232	*	462	423
50 acres to 99 acres	552	571	597	*	418	397
Over 99 acres	907	545	500	*	137	75

\* Not available for any county in the State

Source: United States Bureau of Census.  
Agriculture. 1930, 1940 and 1950.

TABLE NO. 14  
 NUMBER OF FARMS, UTAH COUNTY  
 1900--1950

<u>Year</u>	<u>Number</u>
1900	2,760
1910	2,873
1920	3,237
1925	3,354
1930	3,561
1935	4,004
1940	3,055
1945	3,987
1950	3,191

Source: United States Bureau of Census.  
Agriculture. 1930, 1940 and 1950.

### Farm Products Income

Farm income in Utah County is derived in the main from livestock and livestock products. As a source of cash farm income in Utah County, livestock products comprise from 60 to 70 per cent of the total. Income from crops account for about 30 per cent of the farm income. This may be slightly misleading in that a major portion of the crops, such as hay, and a considerable quantity of grain, are not marketed as such, but fed to the livestock. (Livestock in this case being used as a generic term including cattle, dairying and poultry.)

The farm product income for the major farm products between 1940 and 1950 may be found in Table No. 15. The gross farm income for 1950 amounted to \$13,056,768 and \$4,830,105 for 1940 respectively, or an increase of 170 per cent in the ten-year period. The increased volume of cattle in the country was the largest single item of increase percentage-wise. While this item was 30 per cent of the total gross farm income, it was an aggregate income increase of some 337 per cent over 1940.

In rate of increase, dairy products follows that of livestock production. While not in the area of largest gross income, it is in the area of an ever enlarging increased proportion to the total. That is, an increase of 330 per cent places it in the area of livestock as to increase.

Utah County leads the state in Grade A milk production. It also has the highest dairy herd average in the state. There are 8,994 dairy cows on 2,004 farms, 350 of these are commercial dairy farms.<sup>1</sup>

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1. U.S. Bureau of the Census. Agriculture. 1950.

Sixty-five per cent of milk produced is used for Grade A bottle milk. The other 35 per cent is used for cottage cheese, American cheese and ice cream. The annual income to dairymen in Utah County is \$2,724,000 for milk production and \$696,000 on cows sold for beef, making an annual gross income to dairymen of \$3,424,000.<sup>1</sup>

Utah County's poultry industry today is third among the county's agricultural industries as a source of cash farm income. The Agricultural Census of 1950 shows an income of \$3,491,945 from poultry products sold and traded in Utah County. The poultry industry is constantly forging ahead, and as an industry is far different from that of some 30 or even 20 years ago in that major eastern and western markets have developed for Utah County and Utah's poultry and eggs.

The development of these eastern and western markets has meant a great deal to the poultry raisers of Utah Valley, but generally speaking, Utah's market is rapidly shifting from the East to the West. This follows the marketing pattern of many other Utah products. Factors which have influenced this shift include increased freight rates, competition with producers who are closer to the eastern markets, and the increased population on the West Coast. Western markets for the state's poultry products include Los Angeles, San Francisco, Denver, Phoenix, Portland, Seattle, Alaska and the Hawaiian Islands. Large quantities are also sold to the armed forces. The Los Angeles area is by far the largest consumer.

The largest single item of farm income in Utah Valley in 1950 was field crops. The cash income from the sale of crops in this valley was \$3,980,112, which is approximately 25 to 30 per cent of the total

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1. Ibid.



cash income. Field crops are of particular significance because of their relationship to Utah Valley's livestock industry. This is especially true of hay, but it is also true of much of the wheat, and almost all of the field corn, oats, and barley produced in the county. These are feeds and do not appear as cash farm income.

A major portion of the field crops in Utah County is of the so-called "truck crops" variety. These crops provide a quick cash crop each fall and the major portion of the production is used in the vegetable canning industry. The major commercial truck crops include celery, onions, corn, peas, beans, tomatoes, cabbage and pumpkins. Most of these crops are processed in the county at the Pleasant Grove canning factory.

Another mainstay of Utah County agriculture is fruit production, which, while a reliable income-producer, has increased less than any of the farm products involved in our table (98 per cent increase). Perhaps this is true to a large extent because of the large number of farmers working at Geneva, for fruit orchards do not take the constant attention and close supervision that row crops entail. In fact, Utah County is the largest fruit producing county in the state, accounting for 35 to 40 per cent of the total value and total income from the sale of fruit. Utah County produces more apples, pears, prunes and raspberries than all of the rest of the state combined. The value of fruit sold in 1950 amounted to \$1,051,136, as compared to \$531,312 in 1940.

In analyzing farming in the county it must be noted that a heterogeneous type of agriculture characterizes Utah County. There is a considerable variety of crop and livestock enterprise, not only

TABLE NO. 15

FARM PRODUCTS INCOME  
1940-1950

	<u>1940</u>	<u>1950</u>	<u>Per cent Increase</u>
Approximate Gross Farm Income	\$ 4,830,105	\$ 13,056,768	170%
Major sources in percentage of total gross income:			
Livestock sold and traded	897,720	3,921,874	337%
Dairy products sold and traded	386,408	1,660,333	330%
Poultry products sold and traded	966,021	3,491,945	261%
Field crops sold and traded	1,081,944	3,980,112	268%
Vegetables harvested for sale	289,806	881,505	204%
Fruits and nuts sold and traded	531,312	1,051,136	98%

Source: United States Bureau of the Census.  
Agriculture. 1940 and 1950.

in the county as a whole, but also on individual farms. The more successful farm units combine the raising of general crops with the raising of livestock.

It is a basic economic fact that agriculture is stimulated by industry, and agriculture in Utah Valley is no exception. Agriculture and industry have prospered side by side. In agriculture Utah County ranks first in the state; it ranks among the top one hundred agricultural counties of the 3,070 in the United States, and also ranks near the top in the entire Rocky Mountain region.

#### Effect of Geneva

It has been interesting to note the reflections of the Utah Valley residents as to the effect Geneva has had on the agricultural economy of the valley. Naturally, it was difficult for the older residents to break with almost 100 years of tradition and accept heavy industry into the area; but, on the other hand, the younger people were generally rather willing, able and eager for the opportunity to work at the plant and to follow the trend of the times and shift from agriculture to industry. However, with the passage of years, the shift has not developed to the point that agriculture has suffered in the least from Geneva entering the valley. Neither the loss of the productive land involved in building the facilities, nor the shift of population from farming to industry has had an adverse effect on agriculture.

While steel production has increased, agriculture, too, has increased; steelmaking has not been at the expense of agriculture. The farmer-plant employee has developed to the point where farmers can work on the farm and at the plant, too. By referring to a previous

point that is of interest and of economic significance is the fact that Utah County ranked first in the number of farm operators reporting 100 or more days of off-farm work in 1949. The significance of this factor being that 45 per cent of the farm operators are working at some occupation other than their farm for 100 or more days of each year. These operators are, of course, the farmer-steel company employees referred to by former President Walter Mathesius of the Geneva Steel Company.<sup>1</sup>

It would seem that when a county can have almost one-half of its farmers away from the farm for 100 or more days a year and still continue to be the number one agricultural county in the state, farming must be at a rather low ebb in the other counties of the state, or that there is more mechanization in this particular county, or that some relative factor is not explained by this general statistic.

From close association with the Geneva employees, the author has ascertained the fact that these farmer-employees generally will only accept "shift work"; i.e., rotating eight hour shifts, so they may farm on their off hours. The apparent error of reading this statistic is the indication that these farmers do not do farming as 100 days of off-farm work would indicate. The fact of the matter is that they do have over 100 days off-farm labor each year, yet they still farm before or after their shift at the plant. This presents a very unique situation. A close combination of agriculture and manufacturing side by side and employing the very same people has set up what seems to be a sound, basic economic relationship. This very factor has made Utah

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1. Walther Mathesius. "Remarks by Dr. Walther Mathesius, President, Geneva Steel Company, Before the Payson Chamber of Commerce and Other Service Clubs at Payson, Utah." Op cit.

County the number one agricultural county, as well as the number one manufacturing county in the state of Utah.

The following news release is an indicator of this farmer-steel employee relationship, as well as bringing out a salient point on the local, predominant church of the area:

Whereas in 1940 only about 340 farmers in Utah County were able to find year-round work off the farm, by 1945 some 1300 farmers in the area were working in a kind of agriculture-industry partnership. Instead of an influx of outsiders hurting the status of the L. D. S. church, the Mormon church population has more than doubled in many places, and in Orem there are 16 wards instead of the seven there before the steel mill came. . . .

And right along with industrial growth has gone agricultural development, which saw the harvest of crops in Utah County increase from \$2,877,000 in 1940 to \$8,165,000 in 1945. (1)

Another effect of Geneva on the agricultural economy of the valley is reflected in the growth of banking in an area from the period 1940 to 1950. Of interest and in support of this fact, the following news release from the Salt Lake City Telegram is presented:

PLEASANT GROVE (Special) -- Change from an all-agricultural economy to a dual industrial-farm setup in this area is reflected in a study of Bank of Pleasant Grove's assets and deposits in the past 10 years.

Junius A. West, vice president and cashier, noted that since the advent of Geneva Steel Company, in this area, its population has doubled and bank assets have quadrupled.

In 1940, he noted, the bank had assets of \$490,693 and deposits of \$413,007.

On November 13, 1950, assets and deposits were \$2,226,648 and \$2,014,675, respectively. (2)

Perhaps the greatest effect the plant has had on the agriculture of the valley has been in relation to the fluorine problem. This is

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1. Salt Lake Telegram (Salt Lake City, Utah), May 28, 1951.
  2. Salt Lake Telegram (Salt Lake City, Utah), December 1, 1950.

a complete and extensive study in itself and at the time of the writing the cases and lawsuits involved are in the process of litigation. This effect has been in the area of dollars and cents payments by the company to the litigants for damages suffered on livestock and field crops in the county. It has already evolved into a multi-million dollar program with a vast number of cases still on the docket. The eventual outcome and final effect the fluorine will have on the county will constitute an extensive study in and of itself.

#### Problems of Agriculture

The principal problem of agriculture in Utah County, and indeed, one of the major problems of the county, is the inadequate size of the farm unit. Table No. 13 shows that in the last census prior to 1940, the majority of the farms fell into the 20 acres to 49 acres class. The largest group today falls into the 1 acre to 9 acres class, with only a small number of farms (75 farms) falling into that of over 99 acres. Thus economic efficiency is impaired by the reduced operations that must result, and, consequently, production and income per man hour spent in farming pursuits must be reduced. The greater number of farms in the county are much smaller than the unit essential to permit the farmer to support his family from the farm income.

Another problem is the decline of the sugar industry, once a major source of income in the county. Historically, three of the four sugar factories in the county, those at Lehi, Springville, and Payson have ceased operating and presently the Spanish Fork mill secures less than two-thirds of the best tonnage needed for capacity operation. The

1940 Census of Agriculture shows 966 farms reporting the production of sugar beet tonnage, whereas the 1950 census indicates only 271 farms reporting such production. Acreage planted in 1940 was 5,205 acres, and in 1950 only 1,670 acres. The yield by tonnage shows an improvement per acre as 60,865 tons were raised on the 5,205 acres in 1940 and 27,897 tons raised on 1,670 acres in 1950.<sup>1</sup>

Sugar beets were not only the principal cash crop grown on a contract basis but their production and processing gave summer and winter work, since many of the farmers were employed in the mills during the late fall and early winter. The low price of sugar, combined with the frequent conflicts among the beet raisers and with the sugar manufacturers are the factors, among others, accounting for the decline of the industry in Utah County.

In recent years the problem of drastically reduced prices of livestock equated against a rising cost of hay, grain, and feed has been a serious problem to the livestock industry in the county. With an ever-increasing population in the state and intermountain region, raising these livestock and livestock products will be of ever increasing importance. Another problem of concern to the livestock industry is that of increasingly poor range conditions with severe drought. While this is not a problem of Utah County directly, drought has characterized almost all of the area south of Utah County and the entire western portion of the state. The disturbing factor here is that many of the Utah County livestock men range their cattle and sheep in areas south and west of the county.

Aside from the constant and major problem of insect control in the fruit industry, there is the problem of a uniform standard of production

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1. U.S. Bureau of the Census, Agriculture, 1940 and 1950.

from year to year. This is important to the canning industry, which would perhaps like to become dependent to some extent upon the fruit, but the production varies from year to year. However, the local market for fruit is really much the most important, supplying, as it does, a great portion of the demand for these types of fruit for home canning and for fresh consumption not only for Utah County but also for the surrounding counties. At the same time, there are a number of other problems associated with the fruit industry, including the constant competition with other crops for the use of the land, the constant problem of marketing recurring every year with the supply and the price being major factors from season to season.

The greatest problem in agriculture in the valley up until the time of this writing has been the throwing off of fluorine into the air by the furnaces and sintering plant at the Geneva works. Since few facts and figures are available on this problem, it is a difficult one to approach. It has involved multi-millions of dollars in suits, with many of them having already been paid to the individuals. Many are, as of now, still pending.

The problem has been that fluorine from the Geneva plant has settled on the hay crops and water of the valley, which have, in turn, been taken in by the livestock.<sup>1</sup> Fluorine is a cumulative poison, and long-continued consumption of relatively small quantities causes fluorosis in farm animals. Cattle, sheep, and horses develop fluorosis

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1. Fluorosis also affects poultry, and to a somewhat lesser degree, fruit orchards. Since the life span of poultry is so short, the economic consequences are rather negligible. The fluorine effect on orchards seems to have been minor to date, but it is impossible to know specifically since these particular studies are just getting underway.



when they consistently consume roughage containing 30 or more parts per million of fluorine on a dry basis.<sup>1</sup> Research work by Dr. Delbert Greenwood of the Utah State Agricultural College staff indicates that on the first, second and third hay crops in 1951 the fluorine content averaged from ten parts to several hundred parts per million, depending on wind drift, area of the valley, etc. The economic effects on livestock pastured in the latter area could be rather drastic under the right conditions.

In time and with an overexposure to fluorine, a typical case of fluorine poisoning in cattle shows a rough, dry hair coat with a tight skin and emaciated appearance. The knee, hock, and pastern joints are greatly enlarged and the cannon bones are thickened.<sup>2</sup> Cattle suffering from advanced stages of fluorosis show marked wear, mottling, and staining of the incisor teeth.<sup>3</sup> An uneven table surface and excessive wear develops in the teeth. They may eventually become soft and fall out. The eventual outcome is that the animal may literally starve to death.

This problem appears to be on the way to a solution. However, the economic repercussions will continue to occur for some time since official, final legal decisions have not yet been made. It was noted in a recent trip to the Geneva plant (December 1955) that giant precipitators have been installed, and now less than 1 per cent of fluorine is released into the air by the Geneva plant.

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1. Utah State Agricultural College, Agricultural Experiment Station and Extension Service. Circular 130 (June, 1952), Recommended Practices to Reduce Fluorosis in Livestock and Poultry and Circular 179 (June, 1953?), The Effect of Fluorides on Plants and Animals. Passim.
  2. Ibid., Circular No. 130. p. 9.
  3. Ibid., Circular No. 130, p. 6.

### Analysis

An analysis of agricultural growth in Utah County for the period 1940-1950 shows that growth and increase are not nearly so dynamic as those factors pertaining to population growth and labor supply enumerated in Chapter V.

Statistics from Table No. 11 and 12 indicate that growth of agriculture in the county is in relation to the average for the state and to the selected counties of Box Elder, Cache, and Weber. The average value per farm, if we are to evaluate it moneywise, indicates the increase (\$5,254 in 1940; \$17,071 in 1950) is below the average for that of the state (\$6,074 in 1940; \$19,146 in 1950). While this is true of farm values, previous statistics indicate that in other fields; i.e., livestock, poultry, etc., Utah County has forged steadily ahead. In general, an analysis would indicate that the county has held its own percentagewise in the realm of agriculture, while manufacturing has grown by gigantic leaps and bounds. The unique thing is that this increase in manufacturing has not been at the expense of decreased or decreasing agriculture.

## CHAPTER IV

## MANUFACTURING AND BUSINESS ACTIVITY IN UTAH VALLEY

## Economics

Historically, manufacturing in Utah Valley began, if only in a very modest way, shortly after the immediate needs and life-sustaining factors of the pioneer settlers were fulfilled. First were the simple manufactures of pioneer life, gradually becoming more complex, and then developing into a complexity that only our contemporary or neo-atomic age can begin to comprehend.

Certain factors establish Utah Valley as a site well situated for this modern day manufacture with the qualities of land, water, transportation, raw materials and population being in immediate or nearby supply. The land, water and raw materials have been instrumental in establishing basic industries in the county, and the consequent resulting service industries are predicated on the established basic industries.

Manufacturing, as a basic industry in the county, has determined, substantially, the population and economic activity. Patterns for basic industries vary to some extent by regions and geographical locations within the country. However, whatever the variation in the proportionate size of the different subdivisions, they mutually compensate for each other so that when all are added together they make up virtually the same relative proportion of the total economic activity of each region. This is the same thing as saying that the sum of various basic economic

activities bears a virtually constant relation to the total service or secondary industries. From this we assume the primary economic relationship of 54 per cent basic industry to 46 per cent service industry, or an approximate 1:1 ratio.<sup>1</sup>

In light of most current thinking on the matter, it is generally agreed that all producing industries are basic, no matter where its products are consumed. When a basic industry enters a region, such as when Geneva entered Utah Valley, the service and other industries are stimulated to greater activity. It is estimated that each producing employee in a basic industry requires one other supporting employee in the basic industry and two employees in service industries.<sup>2</sup> Thus, employees in basic industries require an equal amount of employees in service activities. Any increase in the basic function is magnified by a complementary increase in service features. An understanding of a basic industry's effects on a community leads to the pattern that the service field will take.

The following material endeavors to give a survey of the areas of manufacturing, business and service industries in Utah Valley based on the relationship between the years 1940 and 1950. Tables and materials are often of little value unless compared to a preceding and comparable area of study. This holds especially true in a survey of growth which is intended to show the tremendous rate of increase due to the inception of the Geneva plant in and around the years 1941, 1942 and 1943.

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1. Utah Industrial Exhibit, The Utah Economy - Its Nature and Its Prospects. (Pamphlet, Utah Manufacturers Association: 1948)
  2. Theron J. Nelson. "The Economic Effects of a New Industry on a Small Utah Community." (Unpublished Masters Thesis, University of Utah: 1949). p. 15.

### Growth of Manufacturing

Basic or population-growth industries fundamentally determine an area's economy; it determines to a large extent the population, and much of the area's service industry is geared to basic industry. Service industries are those lines of economic endeavor whose chief function consists in rendering services to other. Among those engaged in service industries are professional workers, governmental employees, domestic workers, commercial attendants, servants, waiters, salespeople and white-collar workers.<sup>1</sup> Although there may be a small percentage of variance among regions and areas, the economic relationships remain comparatively constant. Some variance may enter into the picture where the line of demarcation between basic and service industries is not clear cut. Mining, manufacturing, and agriculture are considered the primary basic industries.

Population-growth jobs are often embodied, however, in some of the service industries; such as, public utilities, trade, construction, etc. That is, they support other service industries in the area.

Geneva Steel, as the largest basic industry in Utah County, and with its large employment and extensive installations requires a multitude of service industries. The Geneva plant directly inserts approximately \$25 to \$30 million annually into the county.<sup>2</sup> Some interesting

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1. Byrne J. Horton, Dictionary of Modern Economics. (Public Affairs Press: 1948) Washington, D.C. p. 301.
  2. Some of this leaks out into Salt Lake County and various adjoining counties, but by and large Utah County receives the lion's share of these expenditures.

statistics were revealed by former President W. Mathesius of the steel company in a 1951 speech to the Payson Chamber of Commerce:<sup>1</sup>

...Geneva's present rate of operations requires approximately 9,000 carloads of inbound and outbound commodities per month, which means the daily movement of 300 loaded and more than 200 empty cars into and out of the Geneva and Ironton plants. The inbound shipments include heavy movements of iron ore, coal, fuel oil, limestone, and dolomite, together with a large movement of miscellaneous supplies, all of which are necessary for the production of our outbound shipments which consist of pig iron, semifinished and finished hot-rolled steel products, also coke and coke plant by-products such as coal tar, sulphate of ammonia, benzol, toluol, xylo, solvent naphtha and naphthalene.

In addition to this railroad traffic, we are moving approximately 50 truckloads of both inbound and outbound commodities per week, and the outlook indicates that truck shipments will continue to increase.... (2)

The inception of manufacturing as new industry will almost invariably result in an aggregate increase in the income of the community. The constant influx of new industry into Utah Valley in particular has brought a very substantial gain as to the number of establishments and the increased number of wage earners employed. Table No. 30 shows that 34.5 per cent of the employed population of Utah County is engaged in manufacturing. This places Utah County 110 per cent above its nearest competitor (Salt Lake County) and 1,227 per cent above that county which is its farthest competitor (Carbon County).<sup>3</sup>

In keeping with this gain, the number of manufacturing establishments has increased 31 per cent between 1940 and 1947 (See Table No. 16). This gain is substantial, rating only second to Salt Lake County in the net increase of manufacturing establishments between 1940 and 1947. Actually, in this particular case the percentage increase in the number

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1. "Remarks Before the Payson Chamber of Commerce and Other Service Clubs at Payson by Dr. Walther Mathesius, January 25, 1951." Typed copy in possession of the writer.
  2. The author is confident that this trucking figure has at least doubled since the period in which the figure was released.
  3. This only includes those 11 counties in Utah with over 10,000 in population.

of manufacturing establishments is not a good index of growth for the county in that only one large establishment employs approximately 88 per cent of the manufacturing employment, yet the establishment is only given an index weight of one.

A better index of growth is the average number of wage earners for 1940 to 1947. The Census of Manufacturers for 1947 shows that 1,256 wage earners were employed in Utah County in 1940; whereas, there were 5,783 wage earners in 1947, a gain of some 360 per cent. This compares to a percentage gain of 112 per cent for the state of Utah for the same period. The comparative growth within the state for mining, agriculture and manufacturing for the period 1937-1947 is shown in Table No. 17.

The unweighted and relative index of wages for the period in question shows that Utah County wages increased 1,120 per cent or 159 per cent over the average for the state. In relation to this, Table No. 16 shows that our selected counties in each case were lower than the average for the state. Of course, with Utah County so far out of line, the average would tend to be generally high rather than toward a more general mean should this particular county be eliminated from the statistical run. The net increase of \$14,428,000 poured into a county of 81,912 as against a net figure of \$6,143,000 for a county comparable in size (Weber - 83,319) tends to show the importance of Utah County to the state as a manufacturing center.

Another factor substantiating this place in the sun accorded Utah County is through the substantial increase of value added by manufacturing 1940 to 1947. During this period, the percentage for

TABLE NO. 16

MANUFACTURING BY SELECTED COUNTIES  
(1940-1947)

		<u>Utah</u>	<u>Box Elder</u>	<u>Cache</u>	<u>Weber</u>	<u>State of Utah</u>
Number of establishments	-1940	58	16	27	72	560
	-1947	76	15	34	84	772
Per cent increase	1940-47	31%	-6%	26%	17%	38%
Average number of wage earners	-1940	1,256	469	540	2,092	11,555
	-1947	5,783	581	881	3,414	24,516
Per cent increase	1940-47	360%	24%	63%	63%	112%
Wages (dollars)	-1940	1,288,469	289,320	471,543	1,890,120	11,967,762
	-1947	15,717,000	1,203,000	1,903,000	8,033,000	63,804,000
Per cent increase	1940-47	1,120%	316%	303%	325%	433%
Value added by manufacturing (dollars)	-1940	3,767,967	1,111,974	2,340,443	6,893,076	43,719,862
	-1947	30,632,000	2,349,000	6,902,000	14,943,000	128,298,000
Per cent increase	1940-47	713%	111%	195%	117%	193%

Sources: United States Bureau of the Census, County and City Data Book, 1952. (Washington, 1953).  
United States Department of Commerce. County Basic Data Sheet, 1940.  
Compiled and published by Market Research Department, Farm Journal, Inc., (Philadelphia: 1941).



the county went up 713 per cent as compared with 115 per cent for Weber County and 193 per cent for the state of Utah.

The Bureau of Economic and Business Research at the University of Utah estimated the value added by manufacture in 1947 as \$130,000,000.<sup>1</sup> This places Utah County as adding about 23 per cent of the value to the total for the state. These studies show rather conclusively that the Geneva plant contributes by far the majority of this 23 per cent and again reiterates the importance of Utah County to the state as a manufacturing center. Of course, a prolonged strike at the Geneva plant could, and probably would, alter and reverse the trend arrived at through the use of these statistics.

#### Growth of Business

##### Number and Size

Manufacturing, mining and agriculture account for practically all of the production of commodities using the word "production" in the Chamber of Commerce sense. Production of goods itself, however, represents only a portion of the total essential economic activities. Before the goods reach the consumer they are transported; they enter into wholesale trade; their production, transportation and sale are financed in various ways; telephone and telegraph and power facilities are employed in the process of production and distribution; the services of thousands of retail stores are used; advertising is employed to make the product or service known to the public. All these activities and others, such as insurance and amusements, education and other public services, contribute to the total

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1. Bureau of Business and Economic Research, Utah's Economic Patterns. (University of Utah, December 1953).

productiveness of the economic system. All these corollary activities constitute the service industries.

For the purposes of this study, it has been deemed best to arrive at a sampled area that would give a comparative index for Utah County. Aside from a random sampling of selected areas of the county, the city of Provo has been chosen as a representative area of Utah County. This city is the largest in the county; it is the county seat; it is located in the center of the county and is located six miles from the Geneva plant. Samplings from cities and towns adjacent to Provo and the Geneva plant would indicate that percentagewise Provo City has proceeded in growth and expansion about equal, or perhaps in certain selected areas of growth, has proceeded somewhat faster and to a somewhat larger extent. Therefore, much of the statistics are for the city of Provo, but actually portray much of the rise and growth of the county in general.<sup>1</sup>

Provo is the trading center for Utah County's present 90,000 odd population, although the trade coming into Provo and the northern part of Utah County is at least partially offset by the volume of purchasing done by residents of the city and county in Salt Lake City, forty-four miles distant. Of the \$15,000,000 of retail sales in the county in 1940 made by 609 retail outlets, Provo's 212 retail stores accounted for \$9,000,000, or about two-thirds of the total sales of the county. Aggregately, Provo handled more than half of the business in 1940, but

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1. In collecting and analyzing the statistics necessary to support this particular section, it was found that by using the ten-year span -- 1940 to 1950 -- that the purposes of this study could best be served. Statistics for previous years were often available and were often collected for reference, and the same held true for those years after 1950 on up to the present date. However, in order to conserve the reader's time, yet illustrate the rate of growth as to size and wealth, the statistics in most instances have been pared to the ten-year span, 1940 to 1950.

TABLE NO. 17

NUMBER EMPLOYED IN, GROSS MONTHLY INCOME  
DERIVED FROM, AND PERCENTAGE CHANGE IN GROSS  
INCOME FOR MINING, MANUFACTURING, AND AGRICULTURE,  
UTAH, 1937-1947

Occupation	Numbers Employed		Total Monthly Gross Income		Per Cent Increase in Total Gross Income
	1937	1947	1937	1947	
Mining	11,402	12,947	\$1,554,206	\$3,265,233	110.0
Agriculture	33,000	39,400	4,156,000	10,329,600	148.5
Manufacturing	16,611	23,758	1,789,005	5,042,873	181.8

Source: Utah Economic and Business Review, Measures of Economic Change in Utah. (University of Utah, Salt Lake City, 1937-1947).

Notice the percentage increase of the income derived from manufacturing. This figure, 181.8 per cent, proves that manufacturing is Utah's fastest growing economic unit. Manufacturing, therefore, assumes a position of prime importance in the future of the state. It is the most dynamic activity, the one most promising in the future and the one presenting the most complex problems.

as the 1940-1950 span developed, business shifted from the city of Provo out into the county due to the inception of the Geneva works. By 1950 this shift in business accounted for Provo showing barely 51 per cent of the retail sales in relation to those for the county for that year. Retail sales for Utah County in 1950 amounted to \$68,856,000 and \$35,432,000 for the city of Provo. Table No. 18 shows the gradual slackening of sales for the city in relation to that for the county. This shifting factor brought the percentagewise growth of the county into a more comparable line with that of Provo.

By comparing the year 1943 with that of 1942 we see a rather dramatic jump in retail sales for both the county and for the city of Provo. Whereas sales for the city were \$9,766,000 in 1942 they jumped to \$13,112,000 for a 29.2 per cent increase in sales in the one-year period. Residents claim that the increase in sales in that one-year period appeared to be more than phenomenal. Sales were up in all areas.

While in the early 1940's the sales for Provo City were running about two-thirds of the total for the county, the county suddenly came alive and picked up growth with even greater rapidity than did the city. Retail sales for 1943 showed a gain of 59 per cent over the sales for 1942, going from \$13,143,000 in 1942 to \$20,871,000 in 1943.

With the advent of 1943, sales picked up throughout the county in ever enlarging proportion. This is made clearer by shifting to the end of the decade and comparing sales in the county for 1950 against those for 1949 and also the increase for the city. In 1949, sales for the county were \$51,273,000 and in 1950 were \$68,856,000 for an increase of

TABLE NO. 18  
 RETAIL SALES  
 (1940-1950)

<u>Year</u>	<u>Provo City</u>	<u>Utah County</u>
1940	\$ 9,000,000	\$15,000,000
1941	10,037,000	18,444,000
1942	9,766,000	13,143,000
1943	13,112,000	20,871,000
1944	13,866,000	22,515,000
1945	16,173,000	27,059,000
1946	19,755,000	32,068,000
1947	27,435,000	44,537,000
1948	33,584,000	54,986,000
1949	31,432,000	51,273,000
1950	35,432,000	68,856,000

Source: Sales Management Magazine,  
Survey of Buying Power, as  
 found in the files of the  
 Provo City Chamber of Commerce.

34 per cent. During the same period sales in downtown Provo were \$31,584,000 in 1949 and went to \$35,432,000 in 1950 for an increase of 12 per cent.

The significance of the shift in growth of the county over the city percentagewise is the fact that the population diverged and distributed itself over the county proper and more in relation to the proximity of the Geneva plant. The significance of the growth in and of itself is important whether measured by the growth of retail sales in the city of Provo or by the growth of sales for the county as a whole. Any city or county that can increase its retail sales by from 25 to 40 per cent in any one year has certainly passed over the threshold and is in the throes of a boom.

Table No. 19 portrays the growth of selected counties as to the increased number of establishments, proprietors, employees, sales and payrolls. The percentage increase of 25.1 per cent in the number of stores compared to a minus figure for Cache County shows again, rather dramatically, the increased secondary or service units that are necessary to support the influx of population brought about by the inception of Geneva. The number of full-time employees increased from 1,520 in 1939 to 3,154 in 1948 for a calculated percentage rise of 108 per cent. In comparing net sales for this period we find a 299 per cent increase and a 311 per cent increase in payrolls for 1948 over the year 1939 respectively in Utah County.

In almost all areas of Table No. 19, Utah County stands out with substantial increases. This picture would, no doubt, have been considerably different without the advent of the Geneva works into the

TABLE NO. 19

## RETAIL TRADE FOR SELECTED COUNTIES

1939-1948 and 1940-1950

		<u>Utah</u>	<u>Box Elder</u>	<u>Cache</u>	<u>Weber</u>	<u>State of Utah</u>
Population	1950	81,912	19,734	33,536	83,319	688,862
	1940	57,437	18,832	29,797	56,714	550,310
	Per cent increase	42.6%	4.8%	12.5%	46.9%	25.2%
Number of stores	1948	762	263	342	737	6,840
	1939	609	256	347	662	6,372
	Per cent increase	25.1%	2.7%	-0.1%	11.3%	7.3%
Active proprietors	1948	666	255	320	701	6,682
	1939	520	211	273	568	5,520
	Per cent increase	28.1%	20.9%	17.2%	23.4%	21.1%
Paid employees (full time)	1948	3,154	678	1,677	4,256	31,874
	1939	1,520	417	930	2,388	19,562
	Per cent increase	107.5%	62.6%	80.3%	78.2%	62.9%
Net sales (000's)	1948	58,286	16,714	27,980	75,572	578,767
	1939	14,624	4,313	8,299	20,127	170,728
	Per cent increase	298.6%	287.5%	237.1%	275.5%	239.0%
Payroll (entire year) (000's)	1948	5,616	1,224	2,955	8,479	63,034
	1939	1,366	307	797	2,315	18,743
	Per cent increase	311.1%	298.7%	270.8%	266.3%	236.3%

Source: United States Bureau of the Census. City and County Data Book, 1952. (Washington, D.C., 1953). United States Department Commerce. County Basic Data Sheet: 1940.

economy of Utah Valley. It would seem that few areas of the state depend to such an extent on one industry as is the case of Geneva to the economy of Utah County.

#### Measures of Trade and Economic Growth

For each community, whether it be a small village, city, state or nation, certain indices are available which, to a certain degree, can be used as yardsticks to measure the comparative incline or decline of wealth. Indices of wealth, such as the number of building or construction permits, gas meters, water meters, power and light meters, gross postal receipts and motor vehicle registrations show an increase from 1940 through 1950 with the years of 1942 and 1943 showing a tremendous surge ahead due to the construction and operation of the Geneva plant.

In order to facilitate this study it is again practical to use our representative city of Provo as an index of growth and development as well as integrating statistics drawn from the county. While Provo has grown 60 per cent in the period 1940-1950, Pleasant Grove has grown 64 per cent and American Fork 54 per cent respectively, showing the average growth at approximately 60 per cent, of which Provo is representative.

Since housing is one of the primary indices of wealth, one must note from Table No. 20 the tremendous spurt in building permits allotted in 1943.<sup>1</sup> There is a percentage jump of 469 per cent in the dollar value of building permits when, in the middle of the war, housing was a critical item and certainly in short supply. The other jump we note is

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1. It should be kept in mind in analyzing the statistics and statistical tables the place Geneva plays in each of them. In most of the indices of wealth a large cleavage comes between 1942 and 1943. The only attributable factor available for this cleavage, since it was the center of a war period, is the inception of and production at the Geneva works.



TABLE NO. 20

	<u>Building Permits<sup>a</sup></u> <u>(Provo City)</u>
1940	\$ 483,230
1941	470,424
1942	599,270
1943	3,408,265
1944	211,955
1945	396,405
1946	2,198,872
1947	2,097,350
1948	3,102,679
1949	2,318,195
1950	4,189,060

TABLE NO. 21

	<u>Postal Receipts<sup>b</sup></u> <u>(Provo City)</u>
1940	\$ 84,962.60
1941	87,360.79
1942	112,635.66
1943	159,744.45
1944	160,708.63
1945	154,067.58
1946	144,423.55
1947	154,172.06
1948	176,682.02
1949	195,800.11
1950	205,074.22

- Sources:
- a. Monthly Report of Provo City Engineer.
  - b. Annual Report of Provo City Postmaster.

Courtesy Chamber of  
Commerce, Provo City,  
Utah.

after the close of the war, but is not pertinent to this particular study. This post-war period boom in the area of housing, however, tended towards normalcy with the housing boom and housing starts upped tremendously throughout the nation.

With regard to the utilities, Table No. 22 gives a resume of changes with respect to telephones, gas, light and water meters. It should go without mention that with the 1943 spurt in housing, the utilities must show a correlation, to a large extent, with the units of construction. Of the utilities group, the number of light meters would prove to be the best index. In the building years of late 1942 and 1943 the table shows an increase of 305 light meters over 1941, and in 1943 an increase of 429 over 1942.

Gas meters show an increase of 192 meters in 1942 over 1941 and 191 meters in 1943 over 1942. Gas meters do not give a complete picture, however, as many homes prefer coal to gas heat or electric hot water heating to that of gas. Not in conjunction with this Geneva study, but of interest in passing, is the fact that in 1949 there were over 1,000 gas meters suddenly in use over 1948. This was due to the fact that the Mountain States Fuel Supply Company completed a new line into the Orem-Provo area.

Telephone installations show an interruption in the normal trend in that 1943 only shows an increase of 283 telephones over 1942; whereas, 1942 shows an increase of 828 telephone connections over 1941. This vast increase in a year previous to the extensive surge of construction is due to the fact that the Geneva plant is on the Provo line and the

TABLE NO. 22

PUBLIC UTILITIES  
(Provo City)

	<u>Telephones</u> <sup>a</sup>	<u>Gas Meters</u> <sup>b</sup>	<u>Light Meters</u> <sup>c</sup>	<u>Number Power Consumers</u> <sup>c</sup>	<u>Water Meters</u> <sup>d</sup>
1940	2,821	1,367	4,900	*	3,321
1941	2,987	1,400	5,150	4,985	3,596
1942	3,815	1,592	5,455	5,356	*
1943	4,098	1,783	5,884	5,771	*
1944	4,567	2,123	6,335	6,122	4,267
1945	4,748	2,661	6,755	6,332	*
1946	5,616	2,796	7,299	6,826	4,901
1947	7,637	2,800	8,199	7,130	5,476
1948	7,811	3,108	8,287	7,524	5,583
1949	8,655	4,188	*	7,711	*
1950	9,309	4,260	*	7,941	*

Source: a. District Manager, Mountain States Telephone and Telegraph Company, Provo.  
 b. General Manager, Mountain Fuel Supply Company, Provo.  
 c. Office Manager, Department of Utilities, Provo.  
 d. Courtesy of Chamber of Commerce, Provo, Utah. Supplied by Provo City Engineer.

\* Not available

majority of telephone connections for that particular year went to the Geneva plant.

Gross postal receipts form an index of a measure of wealth in the sense that many forms of mail are a luxury rather than a necessity, and also that it is an index of business in the area. Post office officials believe that a surprisingly large part of daily mail is gifts, and in the war years this was especially true. Also, with the inception of Geneva came a multi-thousand dollar postal increase in the area as the company handles vast amounts of mail daily and carries its own sub-station postoffice. However, in spite of the many ramifications, Table No. 21 on gross postal receipts shows a 42 per cent increase in 1943 over 1942.

School population is, of course, an index of population growth, which, in turn, may be productive of economic growth. Between 1941 and 1942, the District School Census counted 5,224 students in 1941 and 6,027 in 1942 -- a 15.4 per cent increase -- and 1943 shows 6,837 students for a 13.4 per cent increase over 1942. The other years represented in Table No. 23 show about a 2 per cent or less increase over the remaining years. The significance in these figures lies in the fact that in 1942 construction at Geneva was at its high point with some 10,000 workers involved, but from the following year on, as production began, the number of employees was cut in half. The number of school children, however, was not cut in half as the remaining employees, for the most part, were family men. The construction workers, to a large extent, were itinerate workers without families, and moving from job to job.

Presenting some of the factors just cited and expanding other related statistics is a news release from a Utah County daily newspaper:

TABLE NO. 23

## PROVO CITY SCHOOLS' CENSUS AND ENROLLMENT

	<u>School Census</u> <sup>a</sup>	<u>City School Attendance</u> <sup>a</sup>	<u>Brigham Young University</u> <sup>b</sup>
1940	5,014	4,165	2,715
1941	5,224	4,243	2,131
1942	6,027	4,405	1,687
1943	6,837	5,130	1,155
1944	7,152	5,926	1,508
1945	7,197	6,199	3,446
1946	7,247	6,331	4,350
1947	7,005	6,034	5,082
1948	6,888	5,821	5,441
1949	6,918	5,728	5,652
1950	*	5,865	5,904

\*Not available

Source: a. Provo City School District, Superintendent's Office.  
 b. Brigham Young University, Office of the Registrar. It must be pointed out that the growth of Brigham Young University does not represent any correlation to this study. In fact, the particular period in question shows an inverse relationship which can be attributed to the war.

An increase of 803 children of school age was revealed in 1942 census enumeration figures for the Provo school district released today by Dr. J. C. Moffitt, superintendent of schools.

As of October, date of the census completion, there were 6,027 children 6 to 18 years of age in the city, compared with 5,224 for last year, the number showed.

This included 3,055 boys and 2,972 girls, while last year there were 2,631 boys and 2,593 girls.

Especially significant is the fact that the increase in students this year is greater by 505 students than any previous year's increase on record, Dr. Moffitt said. In 1938, the next highest year, the increase was only 298 students.

The census bears out the belief that Provo's population has grown by several thousand people since the Geneva Steel project started last spring.... (1)

Another measure of wealth and perhaps more in the luxury class than any of the previously mentioned items is that of motor vehicle registrations in the county. The surge in 1943 automobile registrations is due primarily in the influx of construction and personnel for the plant. At the particular time of construction between 1942 and 1943 there was about a 9 per cent increase in registrations while most areas of the country were losing registrations due to the war. That this particular high percentage has been duplicated in the post-war period (1950) tends to substantiate the fact that much has been added to the county coffers through automobile registration fees and personal property taxes (on automobiles), and also in revenue to the automobile service industries. Although a greater part of this revenue results from the Geneva payrolls, it is impossible with the information available to show what the correlation would be. Table No. 24 covers

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1. The Herald (Provo, Utah), November 19, 1942.

TABLE NO. 24

MOTOR VEHICLE REGISTRATION AND VALUATION  
 UTAH COUNTY, 1940-1955

<u>Year</u>	<u>Number of Registrations</u>	<u>Total Assessed Valuation</u>	<u>No. of Vehicle Registrations for Geneva Steel Company</u>	<u>Total Assessed Valuation</u>
1940	4,710	\$ 709,923		
1941	4,766	760,293		
1942	4,880	843,055		
1943	5,428	929,552		
1944	5,673	979,725		
1945	5,381	921,212		
1946	15,481	2,492,479		
1947	17,273	3,122,554		
1948	18,991	3,694,684		
1949	20,585	4,924,265	35	\$16,040
1950	22,608	5,598,871	67	34,420
1951	24,350	7,351,462	63	31,830
1952	26,304	7,960,559	69	27,520
1953	26,635	7,639,768	53	21,100
1954	27,941	7,650,080	77	23,880
1955			78	21,990

Source: Tax Assessor's Office, City and County Building, Provo, Utah.

the increased registration and valuation by years and also the registration of the steel company's cars for the past five years.

This analysis of certain measures of economic wealth and growth shows rather dramatically the rise in income concurrent with the inception of the Geneva plant. The dramatic break comes, in most instances, in the 1942-1943 area during the construction and early operational phases of the plant. The 469 per cent increase in the dollar value of building permits in this 1942-43 area is especially noteworthy, since building is a basic index of any community growth.

#### Financial Measures of Growth

Table No. 25 shows a representative bank in Utah County as to savings and demand deposits.<sup>1</sup> While savings deposits may be an indicator of good incomes, they are not necessarily a good index of business activity. Demand deposits, or those deposits popularly known as checking accounts, are a more exact indicator of business activity in a community.

It must be noted that in the deposits for representative bank X (See Table No. 25) the cleavage is again in 1942-1943. Demand deposits for December 31, 1942 are shown as \$2,060,943, against \$803,389 on December 31, 1941, for this bank. Percentagewise this amounts to 157 per cent increase as compared to 22 per cent for 1941 over 1940. Should this be developed back into the 1930's the corresponding increase for those years would be much smaller in view of the Great Depression. Going forward, however, into the 1942-43 period one finds an increase of \$1,173,820 or a 57 per cent increase, or to take 1943 over 1941, the

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1. Research on this section of banking included three representative banks located in Utah County. In each case the particular bank officials asked that the name of the bank be withheld although the figures themselves could be used en toto.



TABLE NO. 25  
 SAVINGS AND DEMAND DEPOSITS  
 BANK X

(In rounded dollars)

<u>Date</u>	<u>Year</u>	<u>Savings</u>	<u>Demand</u>
3-26	1940	\$ 571,526	\$ 656,034
4-4	1941	616,269	748,773
6-30	1941	632,348	858,472
12-31	1941	660,620	803,389
12-31	1942	917,944	2,060,943
12-31	1943	1,334,450	3,234,762
12-30	1944	1,706,545	2,962,281
12-31	1945	2,181,943	3,399,026
12-31	1946	2,363,017	3,398,192
12-31	1947	2,298,368	3,175,026
12-31	1948	2,183,193	3,286,143
12-31	1949	2,166,753	3,450,223
12-30	1950	1,968,218	3,826,653

Source: Data obtained personally from  
 Bank X, Utah County, Utah.

increase is somewhat over 300 per cent. The following years level off with a generally small but steady rise.

A second representative bank, Bank Y, is in the same relative position as bank X in relation to increases of demand deposits.<sup>1</sup> The deposits of bank Y indicate that it is a smaller bank in relation to bank X. Demand deposits for the year ending 1941 show an increase of \$353,635 or an increase of 17 per cent over 1940. The construction year of 1942 shows an increase of \$2,097,389 or 86 per cent over 1941. The following year of 1943 where construction and primary plant operations were carried on the deposits increased \$5,134,810 or 114 per cent over 1942. The following years follow the trend of banking in general.

Bank Z, the smallest of the three banks in relation to deposits, shows much the same trend, but on a somewhat reduced scale.<sup>2</sup> Demand deposits on December 31, 1941 increased over 1940 by \$414,859 or 15 per cent. The year 1942 shows an increase in deposits of \$1,855,127 over 1941 or an increase of 59 per cent. Finally, 1943 shows an increase of \$5,092,852 over the previous year of 1942 for an increase of 102 per cent. Again, in the following years, Bank Z shows the normal trend of banking.

It must be noted that the trend of bank X deviates to an extent from bank Y and Z in that the spectacular increase in the deposits of bank X came in the year 1942 (152 per cent); whereas the increase for bank Y (114 per cent) and Z (102 per cent) came in 1943. This comes about for two main reasons. (One should keep in mind that bank X is

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1. See Table No. VII, Appendix.

2. See Table No. IX, Appendix.

the largest of the three banks in this survey, banks Y and Z being smaller community, state-regulated banks.) First is the fact that Bank X was peculiarly situated so as to draw almost exclusively upon the deposit creation of the construction of the plant. Construction began in March 1942 and carried on through a greater part of 1943 with this bank absorbing the personal deposits of the construction employees. Second, this bank was located so as to hold on deposit a percentage of the operating capital needed by the Geneva plant in construction. The capital needed for payment of local materials, payrolls, etc., contributed to a considerable extent in this increase of demand deposits.

Bank Y and Z, as noted, surged forward the following year; i. e., in 1943. These banks represented smaller holdings in smaller communities, and as 1943 progressed and Geneva entered into the operational phases of production the permanent employees began to settle down, build and rent homes. These smaller community banks absorbed the deposits of these family groups that settled in the community to work at Geneva. It may be further noted that bank Z increased by 31 per cent in the year 1944, whereas bank Y increased only 10 per cent. This is explained by the fact that the former bank is a greater distance from Geneva than the latter and as the plant assumed full operation the perimeter increased as to living quarters, and the employees that commenced employment with full operations in 1944 found they had to secure housing at greater distances from the plant.

Underlying the measures of wealth previously enumerated and general growth of Utah County there can be no doubt as to the influence of the growth of the county on banking and finance. And, with the respective increases of 152 per cent, 114 per cent and 102 per cent in

the operating capital of any community, the round of prosperity must begin to spiral. The repercussions in this particular case were somewhat modified by the advent of World War II and the general prosperity of the nation during the period.

### Analysis

An analysis has been made of some of the factors involved in the growth of Utah Valley. Manufacturing has shown a tremendous increase with the inception of the Geneva plant into the county with approximately 35 per cent of the employee population engaged in manufacturing. This supports the fact that Geneva adds 23 per cent of the total value added by manufacturing to the state's \$130,000,000 (1947). Utah County has emerged into the fore percentagewise as the number one manufacturing county in the state of Utah.

Business and the service industries, on the other hand, have also increased more than proportionately to that of the state in the number of stores, number of active proprietors, number of paid employees, net sales and payrolls. Again, in closer scrutiny, it is revealed that the largest percentage of this vast increase came in the area of 1941 and 1942, or the area of construction and primary operational phases of the Geneva plant.

In making an analysis of the preceding material, it must be kept in mind that the field of research is not limited to the measures of wealth and growth that have been employed. Certainly other indexes, such as wholesale trade and professional services, could be used to show this development. It would seem obvious that almost any index named or used would point dramatically to the fact that growth and development surged ahead tremendously at the very time of the inception of the Geneva plant into Utah Valley.

CHAPTER V  
POPULATION, EMPLOYMENT AND LABOR

Labor Supply

The inception of the Geneva plant in Utah County heralded the dawning of a new manufacturing era. With this dawning came an ever-increasing call for an expanded labor force. Acquiring a labor and construction force to build Geneva was a major problem in itself as it was a war-time period with manpower being utilized to maximum effort.

Originally in 1941 and early 1942 key officials and technicians from Columbia and other United States Steel subsidiaries looked over the site and paved the way for construction. The problem of enticing construction workers into the area then presented itself. Construction workers were drawn primarily from the immediate surrounding Mountain States.

Ground was broken in March, 1942; by August 5,500 workers were employed on the project. By the beginning of 1943 this total was up to the maximum of somewhere in the neighborhood of 10,000 workers. The shortage of labor became somewhat critical at the height of construction.

The first few years during early construction and operations saw frequent shortages from time to time. It is assumed that this shortage would have been much more acute had there not been a carry-over of unemployment from the 1930's. In 1940, at the time of the Census, the percentage of the total population over 14 years of age in the labor force was smaller in the Intermountain West than in any other Census

Division in the country. Yet the Mountain States had the highest percentage of unemployed workers of any region and, also, the highest percentage of persons employed on emergency public work.

In 1940, while only 4.8 per cent of the population of the United States was employed on emergency public work, there was 7.1 per cent in the Intermountain West. While 9.6 per cent were seeking work in the United States, 10.2 per cent were seeking work in the Mountain West.<sup>1</sup> Clearly, unemployment was a serious problem in the Intermountain West in the early 1940's.

A considerable number of the construction group stayed in Utah County after commencement of operations and became permanent employees of the Geneva plant. The largest percentage of employees, however, came from the original population of the Valley -- principally from the farm-labor group. Workers of the area were ready and willing to change their vocations. Naturally, the wage rates at Geneva were much more lucrative than those for farm hands and there was a mass exodus from farming to the Geneva mills. This was also true for other farm areas of the state that lost people to this new industry.

At the height of construction a serious shortage of common labor developed. Residents point out that this was partially alleviated by the fact that a vast number of high school students were used and that a partial day was instituted in some schools and also the fact that shift work was available for these people. The following dispatch is an example of the pressing need for labor at the height of construction:

Provo - Utah County's most critical shortage is of common labor rather than skilled workers, W. Leslie Mildenhall,

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1. Morris E. Garnsey. Op cit., p. 97.

director of the Provo employment office of the United States Employment Service, said Wednesday, announcing the area has been placed on the war man power list where labor shortages are "critical."

Farmers of this area, who have completed their fall work and would like to work in industrial plants until next spring are urged to advise the Provo employment office, Mr. Mildenhall declared. "These farmers will be given a clearance or deferral and will not be frozen on their jobs when they wish to return to their farms," he said. (1)

When the Geneva plant went into operation skilled labor shortages developed as well as shortages for unskilled laborers. The following news item from a Utah Valley newspaper tends to show the particular needs of the Geneva plant after it had been in production for several months.

W. L. Mildenhall, manager of the Provo United States Employment Service, issued a call this week for laborers, machinists, millwrights and other workers to bring the Geneva project up to full production.

There are now 4,000 construction workers and 2,500 operation employees and the company will require 2,000 additional workers in the next five months for production jobs. The director said women also can be used on many jobs. (2)

Today Geneva has a large percentage of farm-owning and farm-operating employees on the payroll. The general three-shift rotating schedule ("21 turn schedule") in effect at Geneva adapts itself rather well to farming. Not only has the plant drawn employees from the farms, but the farms are still being operated by the same people. Statistics do show that farms have been reduced in size since the inception of the plant.

These farmer-employees have generally made good employees and have been found dependable and efficient by company management. One

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1. Salt Lake Tribune. Salt Lake City, Utah. December 10, 1942.
  2. Orem-Geneva Times. Orem, Utah. April 6, 1944. Page 1.

pessimistic note has been injected by the Industrial Relations Department, however, in that the independence of this farmer-employee population often makes collective bargaining somewhat difficult. With other sources of income on hand "holding out" for greater gains is possible.

Generally, Utah County farmers now find there is an opportunity at home for earnings which more than support a reasonable standard of living. The farmer-steelman is a prevalent type in the ranks of Geneva Steel Company's employees today, and he is finding individually what the county and state are finding collectively; that industry and agriculture provide the best results while working together.

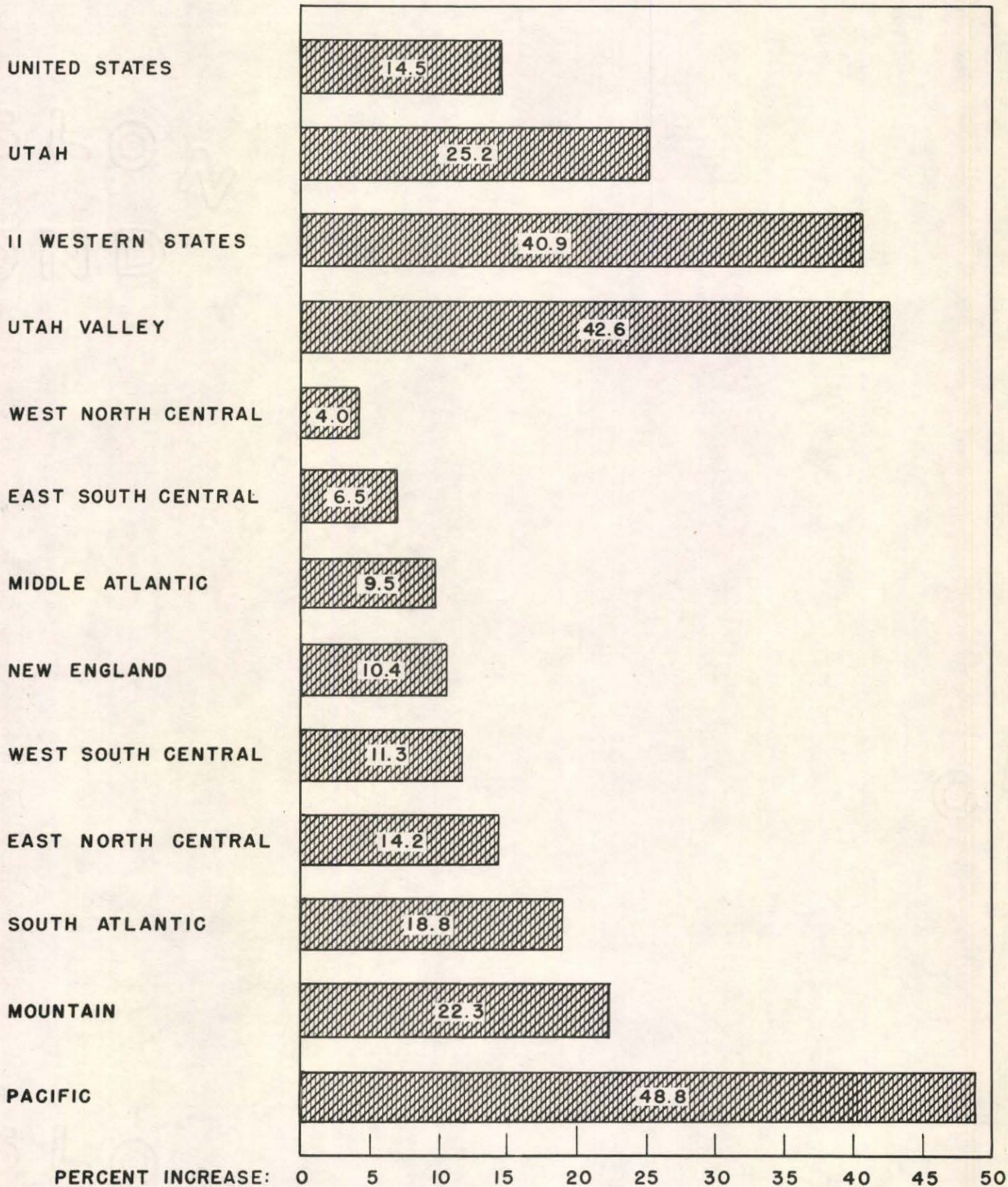
#### Population

Concurrent with the inception of the Geneva plant in Utah Valley, there was a vast and perceptible shift in population. One of the outstanding characteristics of Geneva coming into the Valley was this sharp rise in population. The U. S. Census of Population shows that in 1940 the population for Utah County was 57,437 and in 1950 jumped to 81,912; an increase of 42.6 per cent over the 1940 census. This rate of increase is almost double that of the state and three times the national rate. The Labor Market Analyst for the U. S. Department of Employment Security, Utah County, estimated the 1954 population as 90,000, an increase of 9.9 per cent above the 1950 census count.

The point of importance is the 42.6 per cent increase in ten years; attributable primarily to the inception of the Geneva plant. The Brigham Young University and the small steel fabricators surrounding Geneva are at the present time other major sources of population growth, other than



# POPULATION CHANGES BY AREAS 1940 TO 1950



the natural reproduction rate, in Utah County.<sup>1</sup> This increase of 42.6 per cent is by far the highest rate of increase for Utah County in this century. Table No. V in the Appendix is a statistical analysis of population trends from 1860-1950 for Utah County, Utah State, the Western States and the United States. Table No. 27 portrays population changes by areas for 1940 to 1950.

An analysis of the three counties with a greater percentage rise in population for this period; i. e., Davis, 95.6 per cent; Tooele, 60.3 per cent and Weber, 46.9 per cent, reveals that heavy government installations in the area have contributed extensively to this growth.<sup>2</sup> Salt Lake County approximates the average for the state of Utah. Utah County is the only county in the state of Utah that can attribute an extensive population increase principally to manufacturing. Table No. 30 shows that the percentage of population engaged in manufacturing in Utah County is more than double the nearest competing county. Utah County, much the same as other counties in the state, has a somewhat unique population pattern in relation to much of the nation due to religious and consequent sociological influence. When categorized, these influences show one of the highest birth rates in the nation; one of the lowest death rates in the nation; usually the highest natural increase; one of the highest average years of school completed by the adult population and the highest percentage of population attending college.

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1. Agriculture must be ruled out as the farm population is on the decrease due in the past few years, among other things, to the high cost-low price problem of agriculture and also to mechanization.
  2. For a rather comprehensive study of the impact of a large government installation on Weber and Davis County, consult the study made by John D. McConahay. The Economic Impact of Hill Air Force Base on the Ogden Area. (Unpublished Masters Thesis, Utah State Agricultural College: 1955).

TABLE NO. 28  
POPULATION OF UTAH COUNTY  
1890 - 1950

	<u>1890</u>	<u>1900</u>	<u>1910</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>
Population	23,678	32,456 <sup>a</sup>	37,942	40,792	49,021	57,437	81,012
Per Cent Increase in Decade		36.6%	16.9%	7.5%	29.2%	17.2%	42.6%

<sup>a</sup>A portion of Sanpete County was annexed to Utah County during the period 1890 to 1900.

Source: United States Bureau of the Census,  
Population Various years.

TABLE NO. 29  
POPULATION OF UTAH COUNTY  
Compared with State and  
Other Counties of 10,000 or more Population  
1940 - 1950

<u>County</u>	<u>Population</u> <u>1940</u>	<u>Per Cent Increase</u> <u>1930-1940</u>	<u>Population</u> <u>1950</u>	<u>Per Cent Increase</u> <u>1940-1950</u>
Utah	57,437	17.2	81,912	42.6
Box Elder	18,816	5.6	19,734	4.8
Cache	29,789	8.6	33,536	12.5
Carbon	18,418	3.5	24,901	34.9
Davis	15,371	9.6	30,867	95.6
Salt Lake	211,552	9.0	274,895	29.9
Sanpete	16,051	0.002	13,891	-13.5
Sevier	12,103	8.1	12,072	- 0.3
Weber	56,717	8.7	83,319	46.9
State of Utah	549,254	8.1	688,862	25.24

Source: United States Bureau of Census,  
Population 1940 and 1950.

TABLE NO. 30

COUNTY POPULATIONS AND PER CENT OF WORKING FORCE ENGAGED IN MANUFACTURING  
1950

<u>County</u>	<u>Population</u> <sup>a</sup>	<u>Per Cent Increase</u> <u>1940-1950</u>	<u>Per Cent of</u> <u>Working Force</u> <u>Engaged in</u> <u>Manufacturing</u>
Salt Lake County	274,895	29.9	16.4
Weber	83,319	46.9 <sup>b</sup>	11.2
Utah	81,912	42.7	34.5
Cache	33,536	12.5	9.3
Davis	30,867	95.6 <sup>b</sup>	9.0
<hr/>			
Box Elder	19,734	4.8	5.5
Carbon	24,901	34.9 <sup>c</sup>	2.6
Sanpete	13,891	-13.5	5.7
Sevier	12,072	- 0.3	8.2
Tooele	14,636	60.3 <sup>b</sup>	15.2
Uintah	10,300	4.1	4.2
<hr/>			
State of Utah	688,862	25.2	12.2

a Includes only those eleven counties over 10,000 population.

b Denotes heavy government installations in the area.

c Denotes that this county is tied to the Utah County economy as this county supplies the coking coal to the Geneva and Ironton plants in Utah County.

Source: U. S. Bureau of the Census. Population. 1950.

The people of Utah Valley tend to be two years younger than the state average and seven years younger than the national average. Utah Valley's median age for 1950 was 22.9 years, compared with 25.1 for the state and 30.2 for the entire country.

Utah County boasts of a relatively young population with a median age of only 23 years. Only 5.4 per cent are 65 years of age or older. It has a predominantly native white population. Only 0.4 per cent are non-white, compared to 1.7 per cent for Salt Lake City and 2.8 per cent for Ogden and are composed almost entirely of Japanese, Chinese and Indians. The population is composed almost entirely of those born in the United States. Only 2.5 per cent are foreign born. Those of foreign-born parentage are mostly of Anglo-Saxon or Scandinavian origin.

Utah County has thirteen incorporated cities. When the population percentage increases for the larger cities is taken, we find the rate of percentage decreases directly to the increased distances from the Geneva plant. This factor is significant not only because it started the author on this particular study, but because of this high correlation of growth in relation to distances from the plant shows beyond a doubt that the Geneva plant is a deciding factor in the economics of Utah County.

Table No. 33 shows the percentage of increase from 1940 to 1950 and the distances from the Geneva plant. The only digression in the direct decrease is at Springville where the Ironton plant is located. It must be noted that the outer perimeter of population increases stop at a convenient driving distance; i.e., Spanish Fork (22 miles). Were a scale of concentric rings to be drawn with Geneva as the common center, we would find Spanish Fork lying on the outer ring. At this

point the percentage population growth of 25.5 per cent for Spanish Fork approximately equals the state average for the same period of 24.6 per cent.

Each city in Table No. 32 shows a rise in population over the ten-year period 1940-1950 which is due primarily to the inception of the Geneva plant. An analysis would not be complete, however, without a more detailed study of some exemplary cities. One of particular significance to the author in that he resided there for five years while employed at Geneva is American Fork -- "The Steel City." We note from Table No. 32 that population for this particular city increased some 54 per cent in the 1940-50 period. In 1940 there were 3,333 people living there and in 1950 a population of 5,124. In the field of housing between 1943 and 1950 the city experienced a 68 per cent increase in the number of dwellings erected. In 1943 there were 789 houses in the community and in 1950 there were 1,328, an increase of 539 dwelling units. During the first ten-year period, up to 1950, that the plant was in the valley the number of business establishments in this city increased from 117 to 139.<sup>1</sup> Considering professional facilities for this same period, the people of American Fork were endowed with the services on one more doctor and two more dentists, but the number of lawyers remained exactly the same which may attest to the law-abiding qualities of the American Fork citizens.

In 1949 a report was prepared for interested Chamber of Commerce groups by the Bureau of Economic and Business Research of the University of Utah, of which Dr. Elroy Nelson was then director.

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1. Walther Mathesius. "Remarks by Dr. Walther Mathesius, President, Geneva Steel Company at an Appreciation Dinner Sponsored by American Fork Service Clubs at American Fork, Utah." December 8, 1950. Typed copy in possession of the writer.

In this report it was revealed that nearly one and one-half millions in wages and salaries were paid annually to 402 American Fork employees of the Geneva Steel Company. Only Provo, Springville and Orem exceeded American Fork in the number of employees and total income. Wage payments by Geneva were approximately equal to three-fourths of the total cash farm income in Utah County the report showed.

The company at that time had an annual payroll in Utah of \$22,000,000, of which \$15,315,000 went to 4,307 residents in Utah County.

The 402 employees from American Fork had an average of 3.3 dependents.

The impact of the Geneva Steel Company on the economy of the cities and counties of the state is assayed in the following table:

TABLE NO. 31

NUMBER OF EMPLOYEES AND WAGES PAID BY PLACE OF RESIDENCE<sup>1</sup>

<u>Place of Residence</u>	<u>No. of Employees and Dependents</u>	<u>No. of Employees</u>	<u>Wages and Salaries Paid</u>
Total	15,056	4,500	\$ 16,000,000
Utah County	14,461	4,307	15,315,000
Alpine	116	34	121,000
American Fork	1,353	402	1,432,000
Lehi	821	232	824,000
Orem	1,645	453	1,012,000
Payson	563	166	589,000
Pleasant Grove	1,123	343	1,219,000
Provo	5,864	1,834	6,520,000
Salem	125	32	115,000
Santaquin	234	70	249,000
Spanish Fork	764	227	806,000
Springville	1,772	492	1,750,000
Other	81	22	78,000
Salt Lake County	399	136	482,000
Salt Lake City	244	84	298,000
Murray	28	10	35,000
Other	127	42	149,000
Wasatch County	139	41	146,000
Other Counties	57	16	57,000

1. American Fork Citizen. June 16, 1949.

TABLE NO. 32

## UTAH COUNTY POPULATION FOR CITIES OVER 2,500

<u>City</u>	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>Per cent increase 1940-1950</u>
American Fork	2,763	3,047	3,333	5,126	53.80
Lehi	3,078	2,826	2,733	3,627	32.71
Orem	1,915	**	2,914	8,351	186.58
Payson	3,031	3,045	3,591	3,998	11.33
Pleasant Grove	1,682	1,754	1,941	3,195	64.61
Provo	10,303	14,766	18,071	28,937	60.13
Spanish Fork	4,036	3,727	4,167	5,230	25.51
Springville	3,010	3,748	4,796	6,475	35.00

\*\* Returned Separately.

Source: U.S. Bureau of the Census.  
Population. Various years.



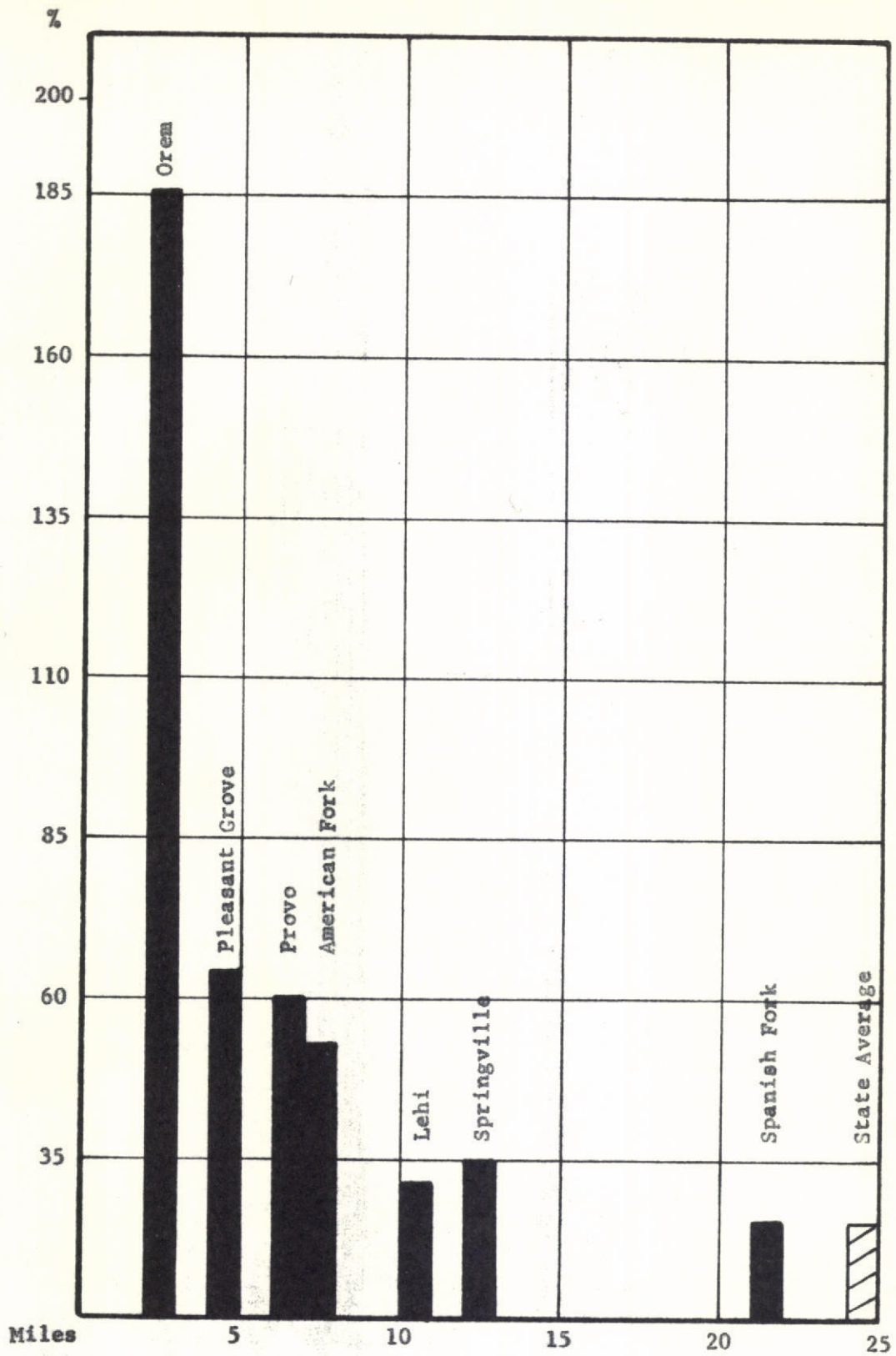


TABLE NO. 33  
 POPULATION INCREASE -- UTAH COUNTY -- 1940-1950  
 & PROXIMITY TO GENEVA PLANT

The city of Pleasant Grove, located five miles from the Geneva plant, is another example of growth and development due to the inception of Geneva. The population of Pleasant Grove in 1940 was 1,941 and in 1950 was 3,195 -- an increase of some 65 per cent. According to the Chamber of Commerce of Pleasant Grove, there were 24 business establishments in 1942. By 1950, the number had increased to 35. It is also estimated by the Chamber that annual payrolls from these business concerns in Pleasant Grove rose from \$250,000 in 1942 to approximately \$450,000 in 1950. In this same period, the number of dwelling units in Pleasant Grove increased by over 35 per cent.<sup>1</sup>

The largest city in Central Utah, Provo, is some seven miles from the Geneva plant. This is the third largest city in the State of Utah. The population of Provo in 1940 was 18,071 and in 1950 rose to a height of 28,937 -- an increase of some 60 per cent. Of particular pride to the people of Provo is that according to the Bureau of Census figures, housing conditions saw a bigger improvement than in most parts of the United States. The figures show that Provo expanded 68 per cent during the period in number of dwelling units, compared with the national increase of 23.6 per cent and the 32.5 per cent recorded in the Mountain States. Housing throughout Utah as a whole went ahead 36.6 per cent. In 1950, there were 7,757 dwelling units in Provo as compared against 4,618 counted in 1940. Of significance is the balance in favor of improved living conditions as shown by the fact that the 68 per cent increase in dwellings compared with 60 per cent increase in population.

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1. "Remarks by Dr. Walther Mathesius Before the Pleasant Grove Lions Club Meeting at Pleasant Grove, Utah, May 17, 1950." Typed copy in possession of the writer.

In 1950, there were 270 living quarters available for every 1,000 residents, as compared with the 255 per 1,000 in 1940.<sup>1</sup>

### Education

True to the pervading cultural and sociological influences of the region, Utah Valley has, in most instances, a somewhat higher educational base than does the state of Utah as a whole. Table No. 34 analyzes and compares Utah County and the state of Utah.

The average resident of both Utah and Utah Valley, 25 years of age and over, has completed 12.1 years of schooling. No other state equals this record. In the nation as a whole, the average school attendance completed by a mature person was 9.3 years. Nearly 47 per cent of the population in the valley between 14 and 29 years of age are enrolled in school.

School attendance, as illustrated in Table No. 34, is especially high for the age brackets between eighteen to twenty-four years, which is undoubtedly accounted for to a large extent by the location of Brigham Young University in a centralized position in the county.

It is interesting to note that school groups came from as far east as Missouri and from the neighboring states of Montana, Colorado, Idaho, and Arizona to visit the Geneva plant. Hundreds of Utahns in school groups and community groups also viewed the huge facilities.

In relation to education and to public relations, the Geneva plant sponsored the first "Family Day" on September 17th, 1955, and had in excess of 20,000 visitors. The two days preceding, on the 15th

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1. U.S. Bureau of the Census. Housing. 1940 and 1950.

TABLE NO. 34

## SCHOOL ATTENDANCE FOR UTAH COUNTY AND UTAH STATE

1950

<u>Age Groups</u>	<u>UTAH COUNTY</u>			<u>UTAH STATE</u>
	<u>Total</u>	<u>Enrolled in School</u>	<u>Per cent Attending School</u>	<u>Per cent Attending School</u>
7 to 13 years	11,675	11,295	96.7	97.1
14 and 15 years	3,210	3,115	97.0	96.9
16 and 17 years	2,945	2,610	88.6	88.3
18 and 19 years	3,665	1,990	54.3	42.9
20 to 24 years	7,620	2,435	32.0	19.3
25 to 29 years	6,185	855	13.8	10.3

Source: U.S. Bureau of the Census. Population. 1950.

and 16th, press, county, city, state and steel company officials were given special tours.

Visitors from as far north as Ogden and as far south as Cedar City were still in the plant at 11 p.m. Friday night. More than 100 girls served as baby sitters for the 2,500 children who stayed behind while their parents toured the plant. Fifteen men were called out to help in the children's recreation area, a big tent erected adjacent to the Geneva Recreation center.

The 16,078 counted visitors who went through on Friday, consumed 38,000 hot dogs, 15,000 cartons of milk, 24,000 cups of punch, 12,000 cups of coffee, 35,000 ice cream cups and 40,000 cookies. Fifty buses shuttled people around the plant. Original plans were for 30. One bus clocked up 110 miles during the day just driving around the plant.

There was keen interest among the vast crowds and the best of feeling continued even when long waits for buses were necessary. The 20,000 persons who went through the plant now have a fairly good knowledge of the workings of Geneva and happy attitudes toward the plant personnel. (1)

Records show that more than 5,000 visitors took advantage of the opportunity to tour the Geneva plant in 1950. Officially, there were 5,075 in 1950; 5,717 in 1951; 3,984 in 1952; 6,697 in 1953 and 5,860 in 1954. Individual visitors came from all over the world to view Geneva Steel's operations. Visitors during 1950 represented France, England, Australia, Austria, Germany, Pakistan, India, Afghanistan and other nations.

Although it has been impossible to date to acquire figures for Utah County or the Provo area on tourist spending, we do know that the tour through Geneva takes from two to three hours, which would mean the average tourist would have at least one meal in the county. A large number of the tourists visiting Geneva lodge overnight take the morning tour. Based on these general suppositions, it must be concluded that tourists leave several thousands of dollars in Utah county each year,

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1. American Fork Citizen. September 22, 1955.

most of whom would probably not have stopped had it not been for a tour of the Geneva works.

#### Employment

Since 1942, Utah County has experienced an industrial development and expansion program of substantial size. With this development and expansion came an era of growth and prosperity, marked by a tremendous growth in employment. This has not always been the case, however. In Utah during the twenty year prewar period, between 1920 and 1940, the population in Utah increased 101,000 while employment in basic industry actually declined, leading to an unbalanced economy. As a result, only 267 out of each 1,000 persons were employed in this area of basic industry in 1940, compared with the national average of 344 per thousand. This was also the case in Utah County.

The period following 1940 created a vast surge of employment in Utah Valley due partly to the war effort, but particularly to the construction of the Geneva plant. According to the Department of Employment Security for the State of Utah, in the year 1940 there were 1,229 persons employed in industrial and manufacturing plants in Utah County. Ten years later, in 1950, the number employed in industrial and manufacturing operations had risen to 6,210. Statistics from this same source indicate that this figure jumped to 7,274 in 1955.

Department of Employment Security statistics for 1955 indicate an average employment total for all industries in Utah County as 14,282. In relation to this figure, there are approximately an average of 5,545 employed by the Columbia-Geneva Steel Division of the United States

Steel Corporation.<sup>1</sup> This would indicate that approximately one-third of those workers covered by the Utah Employment Security Act are employed by the Geneva plant.

A fair degree of comparison as to employment figures in manufacturing can be drawn up against random representative counties, such as Cache County, Salt Lake County and San Juan County. Whereas Utah County has 50.93 per cent of its employees in manufacturing, Cache County has 21.83 per cent, Salt Lake County has 18.71 per cent, and San Juan County only 00.57 per cent.

Department of Employment Security statistics show over 50 per cent of the eligible covered employees are in manufacturing in the county. This industry, to a large extent, therefore, determines the volume of wholesale and retail trade; the nature and extent of transportation, communication, power, fuel and other services; the amount of construction; the total of amusement facilities; the nature of the financial services and, generally speaking, the character of the business, social and cultural activities of the community.

Another facet of the factor of employment by Geneva is that without the Geneva plant and this high percentage of employment, many satellite industries, such as Consolidated-Western Steel Company, Intermountain

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1. Although the Company would not release employment figures for any period to the Department of Employment Security, the author has access to daily employment breakout sheets while employed by the Company and averaged a six-week (3 pay periods) period in September and October of 1953. Employment conditions have been relatively stable as to numbers for some time before and after this figure and should not vary to any great extent under normal conditions. This figure includes the Geneva plant, Iron-ton plant, and Keigley Quarry.

Iron and Steel Company, General American Transportation Company, and others would not now be located in the Valley.

Assuming a primary economic relationship of 54 per cent basic industry to 46 per cent service industry,<sup>1</sup> and using the figures mentioned above, it can clearly be concluded that without the Geneva plant the wheels of general business in Utah Valley would grind much more slowly. As the Labor Market Analyst for the Department of Employment Security located in Provo remarked: "As Geneva goes, so goes Utah County."

Employment in basic industries requires a considerable investment. This investment provides the necessary tools and equipment. In fact, it has been estimated that it requires an average investment of about \$8,000 to provide one new job in Utah manufacturing industries. The steel industry requires considerably more than the average -- about \$20,000 per new job.

Geneva provides manufacturing employment for over 50 per cent of the eligible working force as ascertained by statistics from the Department of Employment Security. In so doing, it virtually controls the county economy. Statistics are again revealing as to how employment within the Company is allocated.<sup>2</sup>

On March 31, 1950 (the date of the 1950 Census of Population), employment at the Utah facilities at the Geneva Steel Company in Carben, Iron and Utah Counties totaled

1. The Utah Economy -- Its Nature and Its Prospects. Op cit.
2. James Marshall Roe, Some Important Impacts of Geneva Steel on the Utah Economy. (Unpublished Masters Thesis, University of Utah: 1953) p. 178.

The Geneva Plant	4,512	73.2%*
The Geneva Mine	751	12.2%
The Ironton Plant	347	5.7%*
The Columbia Mine	304	4.9%
The Columbia Iron Mining Co.	205	3.3%
The Keigley Quarry	46	0.7%*
	<hr/> 6,165	<hr/> 100.0%

\* 79.6% of the total is located directly in Utah County. (Author's asterisks)



6,165, of which 4,859 were employed in manufacturing and 1,306 in mining. This employment was virtually non-existent prior to 1940, with the exception of 825 persons employed in manufacturing and mining to produce pig iron and coke at Ironton. The 1950 employment of 6,165 persons by Geneva represents an annual payroll of approximately \$24,000,000. The annual state and local taxes paid are also substantial, although such figures are not disclosed. (1)

Also, the fact that Geneva serves as a magnet for additional satellite enterprises of metal products plants is particularly significant. The influx of fabricating plants has developed tremendously since the inception of Geneva. Steel plates, coils, sheets, and structural shapes manufactured at Geneva are raw materials to the local fabricating industries. Among others, a prime example of this is the new pipe plant of the Consolidated-Western Steel Company erected just North and across the road from Geneva at the cost of \$7,500,000.

In analyzing the relationship of certain industries to a particular locality, a statistical news release in 1952 by the Utah Manufacturing Association has become somewhat of a basic media for analysis of this type:

A basic industry regularly employing 400 persons would eventually create 600 additional jobs, or a total of 1,000 (a ratio of 1.5). These 1,000 workers, with their families, could establish a community of 3,000, in which there would be 750 homes, 30 retail establishments, sales and service for 600 automobiles, 32 schoolrooms, and 75 professional men and women. There would also be a post office, a bank, a library, motion picture theaters, churches, and various other facilities for trade, repair, amusement and culture. The basic industry payrolls would create local business volume to the extent of 3 and 1/2 times the amount of these payrolls. (2)

In keeping with the data outlined above and using the previous

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1. These include an ad-valorem property tax, a sales tax and use tax, a franchise tax, and the state income tax.
  2. Salt Lake Deseret News-Telegram. December 17, 1952. Section 1, p. 4.

employment figure of 5,545,<sup>1</sup> and using a payroll of some \$25,000,000,<sup>2</sup> we find the employment thus arrived at would eventually create 8,318 additional jobs, or a total of 13,863 jobs. These workers, together with their families, could establish a community of 41,589 population. This would theoretically approximate a little less than one-half of the present population in Utah County. In this particular hypothetical community there would be 10,400 homes, 462 retail establishments, sales and service for 8,318 automobiles, 444 schoolrooms, 1,040 professional men and women. There would also be a main post office, a library, an undetermined number of banks, motion picture theaters, churches and various other facilities for trade, repair, amusement and culture. The \$87,500,000 which would not include such volume as might be directly generated by the purchase of various goods and services, or indirectly through the payment of state and local taxes.

A note of pessimism must be introduced at this point, however, in that in going back to the point that "As Geneva goes, so goes Utah County," we must note that at different periods of time work stoppages at the Geneva works has had its effect on Utah County employment. Figure No. 26 shows that in the interim period when Geneva was being turned over to the United States Steel Corporation by the government that employment in the county was almost cut in half. Had this particular situation continued and should the plant have been completely

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1. This calculation comes from the writer's footnote on page 118. This figure was arrived at empirically while employed at Geneva. Another approach is to take the figures cited previously for J. M. Row's study of 80% and apply it to the latest general figure released by the company of 7,000. Eighty per cent of 7,000 would be 5,600.
  2. This figure was arrived at based on the latest released figure of \$30,000,000. The figure used is somewhat over the 80% used previously and should be because 80% is an employment figure. Percentage-wise, Geneva, et. al., would receive more through incentive application plans than would the other segments of the employment table.

Source: Employment Security Office, Utah State  
Employment Service, Provo, Utah.

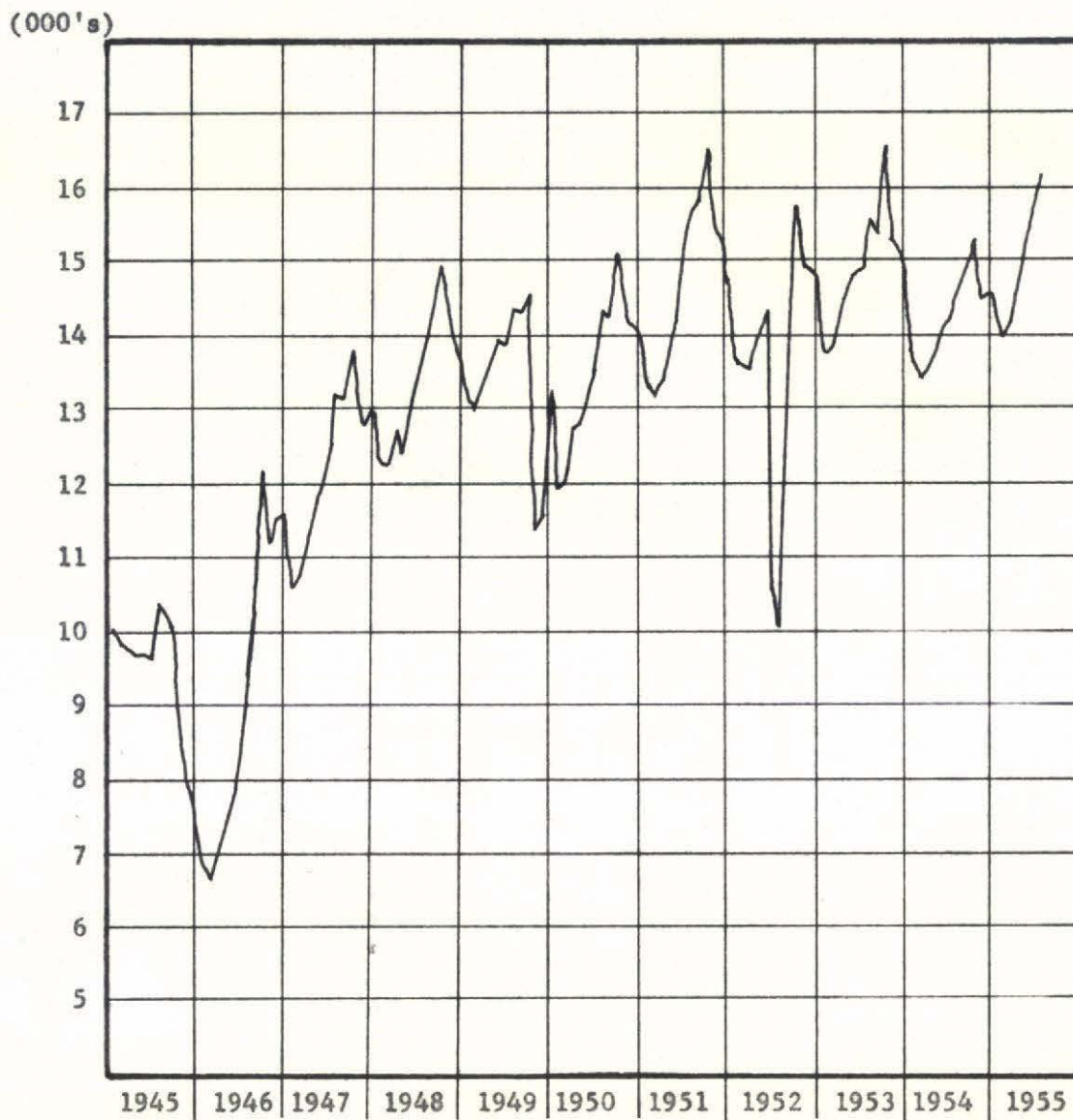


FIGURE NO. 26  
UTAH COUNTY EMPLOYMENT 1945-1955

closed down, the whole multiplier effect would have gone into reverse and things right on down the line would have been in serious difficulties. United States Steel did reopen the plant and employment went on to unparalleled heights.

Again in June, 1952, a nation-wide steel strike by the United Steelworkers of America closed the plant down completely. The drop in employment was again extremely significant. Figure No. 26 again dramatically points this fact out. Although we are interested in employment in Utah County, we must recognize the fact that when Geneva shuts down it means the quarry, coal mines, and iron mines must also shut down. When these areas are taken in aggregate, we realize there is a loss to the state in general, and to the Intermountain West for that matter, in employment and wages.

#### Union Development at Geneva

The development of a union at Geneva is significant to a study of this type because of the factors involved that pertain to the county and community. That is, through collective bargaining certain gains are made by workers that not only influence their standard of living, but that of the community as a whole. The average person is prone to take into consideration only the direct effects of a wage increase, which, to a large extent, is the most important, but other factors do enter into collective bargaining that are of significant value to the community; e.g., insurance, pensions, hospitalization and surgical benefits, etc. These items are basic to the growth of certain service industries and the community in general.

Since the Geneva plant is comparatively new in relation to other plants of the corporation and the area, collective bargaining at the

Geneva plant has a rather short history. With the inception of the plant came a multitude of craft unions affiliated with the American Federation of Labor and which was more or less congealed into a loose federation as a "Metal Trades Union." This group took in the local affiliates of the pipefitter's union, carpenter's union, electrician's union, and so forth. This pattern followed through for several years after the plant went into production -- not, however, without its consequences of jurisdictional disputes and strikes. This continued pretty much through the early history of the plant without benefit of the unifying feature of a single union to do the bargaining for the group. This pattern of early unionism at Geneva could be and would be a study in itself.

The prime modifying feature during this period of the early 1940's was the pursuit of World War II. With the exception of small jurisdictional disputes and wildcat strikes throughout this period, the fact that a "no-strike" atmosphere pervaded tended to modify the usual collective bargaining pattern. Contemporary union representatives feel that organizing the plant at that particular period would have had little effect on wage or working conditions due to these modifying influences. Due to the war and the "frozen" rates of the times, there was little chance for any major wage increases. There was also the fact that this farmer-steel worker group of employees could be considered rather indolent as to the practical and emotional appeals of organized labor. These were not a cosmopolitan people nor a cosmopolitan area and consequently not wise to the so-called ways of the labor world. As the years passed, however, so passed this era, and as the facts will bear out, a more or less normal pattern of union development has set in.

It was not until after the war that organized labor really stepped into the picture at the Geneva plant. In 1946, agitation began to

develop to institute one of the major labor organizations. Through the leavening influence of the War Labor Board an election was called for and was held on February 13 and 14, 1947, to ascertain whether the American Federation of Labor or the Congress of Industrial Organization should reign supreme. Needless to go into the campaign of the time with its rather close vote, but the United Steel Workers of America, affiliated with the C.I.O., emerged victorious.<sup>1</sup> It was not until March 21, 1947, that the union was actually certified, however.

Effective with this certification, bargaining between the union and management immediately moved forward. With the post-war inflation in progress at this time, wage rates and increases were of paramount importance. This area of wage rates and increases is developed in a succeeding section more fully.

During the war years the steel industry, including Geneva, had over 40,000 different rates of pay.<sup>2</sup> Consequently, there were over 15,000 grievances filed on rates of pay for United States Steel alone.<sup>3</sup> There was no basic wage rate for each job or position. People working side by side all may have received different rates of pay. Whim or fancy seemed to be the keynote in advancing employee wages. This led to a

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1. The United Steel Workers of America as a union was officially formed on June 3, 1936, by a merger of the Amalgamated Association of Iron, Steel and Tin Workers and the Committee for Industrial Organization. Actually, the Amalgamated joined the C.I.O. Within that group, the Steel Workers' Organizing Committee was created. The S.W.O.C. was to conduct an organizing campaign in steel and was to have sole charge of the campaign except for the issuance of charters, and the Amalgamated was in charge of the execution of trade agreements. This agreement averted a "dual" union in the steel industry. It must be remembered, however, that at that time those unions affiliated with the C.I.O. were still in the A. F. of L. as opposed to the present separation.
  2. These figures were cited to the author by Ron S. Bills, Staff Representative of the United Steel Workers Union at the Geneva plant. Interview at union headquarters, Orem, Utah: January 24, 1956.
  3. Ibid.

series of job classifications conducted and paid for by the company, but only through union agitation, until there was ultimately only 32 job classes within the steel industry. This has been, among others, one of the modern major contributions to collective bargaining in the steel industry.

#### Success of Local Collective Bargaining

If numbers could bespeak success, then contemporary collective bargaining at the Geneva plant should be considered successful (by the Union) as it has been estimated that 95, and possibly 98, per cent of the plant has been organized. Union-management relations have, in general, been considered rather successful by both sides. Up until 1955, relations were, on the general average, harmonious. In 1955 and into 1956, considerable unrest and agitation, which the union has been unable to arrest, has developed concerning the operation of so-called "indirect incentive" plans. Incentive plans had been previously instituted on the majority of production jobs at the plant, but "indirect incentive" has not (with the exception of maintenance workers, who were placed on incentive at the end of 1955) been generally applied; i.e., for janitors, clerks, etc. Company spokesmen contend that "standards"<sup>1</sup> for these plans are being pushed to the limit of engineering capacity, but the employees contend that it is not fast enough. The problem runs deep at Geneva.

Unique to collective bargaining at the Geneva plant is the sociological feature that the employees are of a farmer-steel worker type. They labor on their farms as well as produce steel at the Geneva works.<sup>2</sup>

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1. "Standards" in this sense is an engineering term used to depict those basic numerical factors that go into setting up an incentive plan.
  2. This particular factor is developed more fully in a previous chapter on agriculture.

Both union and management feels this has both positive and negative aspects -- in some cases it is a help and in some cases presents a hindrance.

Through the high educational standards achieved by Utahns that has been previously cited (section on Education), the fact emerges that higher education promotes higher production per worker and per man hour. To cite an example of this increasingly higher production, union officials are prone to point to the fact that prior to 1949 with 9 open-hearth furnaces in production there was an average "up time" on the furnaces of 7.2, with a production figure of 19.5 tons per furnace. Contemporarily, there are 10 furnaces with a 9.3 average per furnace and a production figure of 23.5 tons per furnace. The salient point here is that this production increase has been accomplished without a corresponding increase in employment, nor has there been any significant technological changes.<sup>1</sup>

On the other hand, due to their option of farming or working at Geneva, there is an atmosphere of independence that has caused some rather discordant notes as well as higher production. These workers have been known to call wildcat strikes during spring plowing, harvest time, and deer season. The peculiar nature of this combination farmer-steel worker does not make each employee completely dependent upon employment at Geneva, as it does at Pittsburgh, Gary, etc., where the only means of a livelihood is at the local steel plant.

The number of grievances filed can usually be considered as an index of good or poor labor-management relations. Since it is not possible to obtain figures on grievances, it is difficult to ascertain

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1. Ron S. Bills. Op cit.



what the relations are from this factor. However, in the writer's experience at the plant, empirical evidence would point to the fact that the union usually wins in the primary or lower stages of grievances (those not in writing) due to the fact that it is ironed out on the spot, whereas, management usually wins the grievance when it goes into written steps 2, 3, and 4 of the grievance procedure listed in the Steelworker's contract. If, however, the parties have still not been satisfied, the grievance may be carried to the Board of Conciliation and Arbitration where a final verdict is then handed down. Since 1947, only 54 cases at the Geneva plant have gone to arbitration, which is a figure that may be considered about average for the nation.<sup>1</sup>

#### Appraisal

Securing an appraisal of collective bargaining at the Geneva plant is difficult in that it should have been pointed out previously that the United States Steel Corporation prohibits any releasing of information on the area of labor-management relations. It is therefore difficult to obtain a full and well-rounded picture of labor-management relations at Geneva.

However, it has been found that the trend of collective bargaining has been comparatively smooth until the latter months of 1955 and on into 1956, where incentive application plans for the so-called or supporting non-production employees has become an issue. Aside from this factor, the general philosophy of labor-management relations has not been to fight it or just co-exist with it, but whenever possible, to co-operate with it. Labor-management relations, when all is said and done, is still the basic process of human relations, and consequently,

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1. Ibid.

with diverging personalities existing in both the ranks of union and supervision there will always be some little contention on issues.

#### Wage Rates at Geneva

Wage rates are naturally as old as the Geneva plant and the aggregate of these wages paid to the employees has been a tremendous stimulus to the valley. These payrolls pouring into the valley month after month and year after year has been a basic factor for growth of the secondary and service industries, as well as for population.

Historically, when the plant went into operation, wages were set up on a "Wage Inequity Program." This plan was necessary as rates were "frozen" due to the war period. This program was an average of wages throughout the industry and was set on three basic rates as follows: (1) standard hourly rate, (2) a guaranteed and occupational rate, and (3) an expected occupational rate.<sup>1</sup> Since no incentive rates of pay could be put into operation due to the lack of an experience factor, a specified rate was added into the base rates to compensate, to a degree, for incentive earnings. These basic rates were kept through the war and it was not until January 1946 that a request was made by the local A. F. of L. affiliates at Geneva for a wage increase. The company offered a 15 cent per hour increase, the union requested 25 cents. A 22-day strike ensued with the War Labor Board recommending a 18.5 cents per hour increase which was accepted by both parties. This was the first of several post-war wage disputes and negotiations.

In the following year of 1947, rates of pay were increased 12.5 cents per hour, effective April 8, 1947, and put into effect on May 7,

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1. Ibid.

1947. This was the first wage increase after the inception of the Steelworker's Union at Geneva. This was primarily an agreement to eliminate previous wage inequities. Under this program of alleviating inequities, the highest rate increase was for 43 cents in the coke oven department and the lowest was zero in some areas. Maintenance employees averaged a 10 to 15 cent per hour increase. In 1948, there was a 12.5 cents per hour increase.

In 1949, there was no increase but a pension and social insurance program was instituted, with the company and employees each contributing 2.5 cents toward this plan for life and hospitalization insurance. In 1950, it was found that there was money over in the insurance fund program and the surgical allotment was increased. A \$100 per month pension plan for those retiring employees with 25 years of service was set up at this time, which the company was to bear the entire cost of. Also in 1950, a straight across-the-board increase of 9.5 cents per hour was granted. In 1951, there was no increase.

In 1952, the year of the nationwide steel strike arrived.

...In ninety days that [nationwide steel strike] strike cost America and the free world 18,000,000 tons of steel. This steel is gone forever. It can never be regained for our economy. Its loss was a staggering national blow. Workers lost more than \$150,000,000 -- an average per man of something over \$650....(1)

The cause of this particularly costly strike? The company contends the union shop clause was responsible. The union contends that the company wished to be able to change job descriptions at any time and to remove restrictive hours of work. The union contends the union shop

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1. Alden G. Roach. "Steel and Related Industries in the Economy of the West." Presented by J.B. Du Prau, Vice-President of Administration, for Mr. Roach, before the fourth annual community-industry conference at Joseph Smith Memorial Building, Brigham Young University, Provo, Utah. October 15, 1952.

was called for after the strike was called. The final settlement called for a 12.5 cent per hour increase plus one-half cent per job class. This was an average settlement of 16 cents per hour increase, which was about equal to what had been agreed on before the final deadline of the strike.

It is interesting to note at this point some of the effects this first strike of any duration had on the economy of the valley. Figure No. 26 shows the violent dip in employment where nearly one-half of the employed population was without work. In polling representative banks in the valley, it was found that savings accounts were not substantially impaired although checking accounts did become somewhat depleted. The area most noticeable was that of mortgages due -- there was an increase in mortgage delinquency.

On this matter, union reports show a comparatively small withdrawal upon the strike relief fund. Figures cited by Ron S. Bill, Staff Representative of the Steelworker's Union, show that a sister company of Geneva and of comparable size at San Francisco withdrew \$100,000 during this period for the strike relief fund, whereas locally only \$2,000 was withdrawn. Again, this farmer-steelworker concept comes into the picture where these employees were able to devote more time to farming. Had the strike been prolonged beyond the 10-week period, the complexion of personal finances and the economy of the valley would, no doubt, have undergone a more considerable change.

In 1953, a straight across-the-board increase of 8.5 cents per hour was incorporated into the contract, and in 1954, there was an 0.5 cent increase plus one-half cent increase per job class. In the

brief 2.5 hour strike of July 1, 1955, the Steelworkers gained a 11.5 cent increase plus one-half cent per job class.

Table No. XI in the Appendix is representative of the increases over the period 1947 to 1955. As a representative sample within these wage rate groups, we could take job class 0-1 (janitors) and find that over this span of time there was a 54.6 per cent increase in wages. This increase taken on down the tables for all 32 job classes indicates an extensive input of money into the Utah County economy. The direct effect is difficult to attain in a dollars and cents figure, but the overall effects are readily evident throughout the valley.

## SUMMARY AND CONCLUSIONS

In developing the economic impact of the Geneva plant on Utah Valley it has been interesting to note why, as well as how, the development came about in this particular valley among so many in the state, and of the consequences involved after the establishment of this plant in the valley.

The factors determining the location of the plant were naturally predicated on the economic determinants of land, labor and capital, plus certain sociological intangibles that are unique to this particular area. All the basic factors were present. Water, so vital, but so often lacking, was in sufficient abundance to operate a plant the magnitude of Geneva as well as satellite industries coming in the wake of Geneva. Raw materials of iron ore, coal, limestone and dolomite were located within a comparatively short radius of the plant and were in such abundance as to make it economically feasible to operate. Transportation was provided by two main rail lines through the valley, the Rio Grande Western and Union Pacific, as well as a network of highways radiating in each direction of the compass. These lines brought in the raw materials and transported the finished products to the principal markets of the Northwest, West and Southwest. One of the unique features of the valley was the type and supply of labor available. The predominantly Mormon sociological influence on education had produced a worker more highly educated than the average steel

worker and with a consequently higher rate of production. The labor supply has typically been a shift of farmers to industry, but without a slackening or shift in farm products output. These vital factors formed a setting for the location of the Geneva plant in Utah County.

Historically, agriculture has been the basic, predominant factor in the life of Utah Valley. For more than ninety years before the Geneva plant came into the valley, agriculture was the main source of wealth. Since 1849 and the first settling of the valley, Utah County has risen to agricultural prominence, ranking first agriculturally among the 29 counties of the state. However, for some years before World War II and the inception of Geneva, there was a noticeable migration out of the area and out of agriculture. Since 1940, because of the war and the inception of Geneva, agriculture and farming have taken on a new complexion.

While employment at Geneva has boosted the need for agricultural products, the plant itself has created some problems for the community. It has brought in personnel that have added a new and cosmopolitan atmosphere to the community that, while resented by some, has been a leavening influence on the valley. An economic problem of significance has been the liberation of fluorine gas into the atmosphere from the sintering plant and furnaces at Geneva. This had had economic repercussions on the livestock and crops of the county. Litigation is now in process to determine the rights, responsibilities and losses under this fluorine problem. Research is now beginning on fluorine poisoning and effects on fruit orchards in the area. This may be a long-range problem.

The interesting thing to note has been that while almost 50 per cent of the farmers in the valley have turned to employment at Geneva,

farming has not declined, nor have new farmers come into the area or has new land been opened up with the exception of some marginal areas devoted to agriculture during the war years. In spite of this, Utah County has prospered and become of first rank agriculturally in the state, among the top 100 counties of the 3,070 counties in the United States and also ranks near the top in the entire Rocky Mountain region. How has this been accomplished? This again is a unique structural situation of this particular community. In essence, the farmers simply do both. They accept only "shift work" at the plant and do their farming before or after shift. Since the vast majority of farms are now mechanized and the farms are comparatively small, this is not a problem and those farmers working at Geneva also can receive bagged fertilizer (sulphate of ammonia) at approximately half price for use on their farms.

Historically, manufacturing has not been extensive and has been, in fact, rather negligible in Utah County as has been the case in almost all counties in the state. However, the certain vital factors previously enumerated in this summary were present in Utah Valley and this steel industry was established in 1942 and 1943. What have been the results?

The real point of this study has been concerned with the effect and results steel manufacturing has had on the area. There can be no doubt that Geneva has been a prime, motivating force in establishing basic and resulting secondary or service industries. The numerous indices of growth and development and the increased number of manufacturing establishments have unequivocally established the place in the sun accorded to Geneva. Other manufacturing industries have



sprung up in the area prepared to use the products from the Geneva rolling mills and by-products plant. In turn, the service industries have likewise had the fire of life breathed into them and have come alive.

Provo City has served admirably well as a sample area and as a comparative index of Utah County. The various indices of retail sales, building permits, postal receipts, automobile registrations, public utilities and banking in Provo show a remarkable and rather dramatic increase in the 1942-1943 area when Geneva was in the process of construction and in the primary stages of operation. The intrinsic nature of how and why this increase came about with the inception of the Geneva plant is the very heart of this study.

Since ours is a rather technical money economy and the inherent processes of consumption and investment are contingent upon the flow of money, the survey of representative banks in Utah County gives a rather clear-cut picture of community expansion. There is an extremely noticeable cleavage in the 1942-43 area where demand deposits increased by as much as 152 per cent in one year. The same study is relatively true for each of the representative banks in Utah County that have been examined. With the extensive percentage increases of operating capital within the community due to the establishment of the plant, there was a tremendous spiral of prosperity that has more or less kept up into this contemporary period. Of course, this general prosperity, while basically attributed to the Geneva plant, was partially due to the advent of World War II and the rising national economy.

Employment has shown a very perceptible shift in the valley from the year 1940 to 1950. Principally, this has been due to the inception

of the Geneva plant. Previous to 1940, employment in basic industry was noticeably below the national average in Utah County, but again with the establishment of the plant industry and manufacturing employment in the valley has risen by almost 500 per cent.

What have been the consequences of this shift in employment patterns? The range of consequences has been enormous. The capital poured into the valley through payrolls and direct buying by Geneva has set into motion vast patterns of consumption and investment which, in turn, have determined much of the range of secondary and service industries. This is the general pattern followed when heavy industry moves into an area, but in this particular location it becomes somewhat more profound. The community is now geared to this industry, whereas in other areas there is generally other industry with varying degrees of influence entailed.

Because it has been somewhat unique, at least in the early stages, there has not been the cosmopolitan atmosphere of contemporary unionism, but rather a provincial atmosphere rather unique to collective bargaining. Unionism developed slowly, due in part to the historical aspects of the local community and farm life, and partly to the war years involved at the inception of the plant. Union-management relations have been rather cordial in the past and up until 1955, but the past months of late 1955 and early 1956 have brought some discontent due to the non-existence of incentive plans for nonproduction employees. With time, this will be cleared up and there is little doubt that eventually every individual employee at Geneva will fall under some type of incentive or bonus plan.

If collective bargaining is considered the only cause for wage rate increases, then the prosperity of the valley owes much to

unionism. In any event, wages have risen steadily year after year since the inception of the plant with the community absorbing these increases and prospering accordingly.

What does the future hold? It is rather difficult to predict the future in view of the vagaries of the business cycle, but it is the current belief that with the constant influx of satellite fabricating plants using the materials provided by Geneva that industry will continue to prosper and grow. Not only will the fabricating plants grow, but the Geneva plant is constantly expanding with a new multi-million dollar ammonia plant now in the process of construction, and the future looks bright for a wire, rod, nail, etc., division.

New industry creates new jobs and with an estimated present (1956) population for Utah County in the 90,000's, which amounts to an approximate 13 per cent increase over 1950, the future looks bright as to population growth. Population growth per se accelerates the need for supporting groups in the service areas. Jobs should continue to expand, foregoing an inverse national cyclical trend, and smaller firms should continue to flow into the valley.

The largest area of hindrance to future expansion of the valley is that of limited supplies of water available. Under present conditions there is not enough water available for continued unlimited industrial expansion. A saving factor in this area, however, is the possible fate of the Colorado River Project and the stores of water that would be made available to Central Utah Valley.

In whatever light the future is noted there is a definite trend toward a "Greater Utah Valley" and the prediction of the first page of this study that the future of the Far West looks bright seems fully justified.

APPENDIX

TABLE I  
CLIMATOLOGICAL DATA - UTAH VALLEY<sup>1</sup>

Month	Lower American Fork Power House		Provo Airport		Spanish Fork Power House		Utah Lake Lehi		Salt Lake City Airport <sup>2</sup>			
	Normal		Normal		Normal		Normal		Normal		Days with .01 in. or more precipitation	% of possible sunshine
	Temp.	Precip.	Temp.	Precip.	Temp.	Precip.	Temp.	Precip.	Temp.	Precip.		
January	28.4	1.69	26.1	1.52	28.1	1.74	24.8	1.12	29.1	1.35	10	46
February	34.2	1.57	32.0	1.54	33.7	1.53	31.3	1.22	34.0	1.44	10	50
March	41.0	1.63	40.5	1.55	41.7	1.97	39.2	1.12	41.8	1.95	10	58
April	50.1	1.78	48.9	1.38	50.9	1.93	48.0	1.15	50.2	1.98	9	67
May	59.1	1.70	56.8	1.48	59.2	1.61	56.3	1.23	58.6	1.88	8	70
June	63.1	.95	64.5	.74	68.5	.95	64.5	.66	67.8	.88	5	78
July	76.1	.74	72.4	.62	76.2	.82	72.4	.77	76.8	.56	4	80
August	74.6	1.05	70.4	.84	74.3	.91	70.0	.97	75.0	.85	6	78
September	65.8	.96	61.1	.88	65.4	.96	60.6	.84	64.9	.87	5	78
October	54.0	1.60	50.1	1.43	54.0	1.74	49.6	1.17	53.1	1.54	7	69
November	40.0	1.33	38.7	1.20	41.0	1.62	37.1	.85	40.9	1.43	7	58
December	31.6	1.63	29.1	1.44	31.1	1.77	28.2	1.15	32.2	1.38	11	46
Annual	51.9	16.73	49.2	14.62	52.0	17.55	48.5	12.25	52.0	16.11	92	65
Years of Record	37	38	57	62	42	42	42	47	76	76	76	64
Elevation	5063		4448		4711		4497		4222			

1. Source: Climatological Data - Utah Annual Summary 1951, Vol. LIII, No. 13, U. S. Department of Commerce.
2. Data from Salt Lake Airport Station is presented as a source of additional detailed information not available for any of the Utah Valley Weather Stations. This station is located 40 miles to the north of Utah Valley, being very nearly the same with respect to elevation and climate.

# Columbia-Geneva Steel

Division  
 United States  Steel Corporation

UTAH OPERATIONS — GENEVA, UTAH

L. F. BLACK  
 GENERAL SUPERINTENDENT  
 GENEVA WORKS

October 28, 1954

MAILING ADDRESS:  
 P. O. Box 510, PROVO, UTAH

Mr. Burton H. Adams  
 Utah County Commissioner  
 City and County Building  
 Provo, Utah

Dear Commissioner Adams:

It has always been my conviction that the most outstanding product of any community is its people. Their attitude, ability, ambition, thrift, and faith can spell success or failure to any industry, plant, or business concern.

It was this important factor of people and their ability to succeed, along with the natural resources of this area and its strategic location, that caused the government and later the United States Steel Corporation to establish the Geneva Works in Utah Valley.

In building our organization to its present position as the major steel producer in the West, we have been constantly aware of the capabilities of the labor market in this area. With a bare nucleus of employees with previous steel mill experience, we have developed a highly efficient working force, in spite of the fact that many of our present employees had little or no industrial experience before accepting employment at Geneva Works.

I can enthusiastically recommend the people of Utah Valley as the chief ingredient to the success of any industry that contemplates locating here.

Yours very truly,



L. F. Black  
 General Superintendent  
 Geneva Works

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TABLE NO. IV

## PRODUCTS OF GENEVA STRUCTURAL MILL

Product Range of 32"--26" Structural Mill

<u>Product to be rolled</u>	<u>Customer use</u>
Standard beams 6" to 15"	Fabrication of ships, buildings, bridges, machinery, electrical equipment, road and harbor equipment, miscellaneous steel structures.
Standard channels, 6" to 15"	
H-beams, 4" to 6"	
Equal angles, 3" to 8"	
Unequal angles 4" x 3" to 9" x 4"	
Flats and bars 4" to 18" wide	
Finished rounds 2" to 6"	
Piling 15" & 16" small flat web	
Ship channels 6" to 13"	
Bulb angles, 4" to 10"	
Zee bars, 3" to 6"	
Tees, 3" to 6"	
Semi-finished blooms, 6" to 10"	
Semi-finished forging rounds, 4" to 10"	
Semi-finished billets, 2" to 6"	
Skelp, 6" to 15"	For pipe manufacture.
Special sections, 6" to 15"	For automotive and various other industries.
Tie plates, 8" to 18"	Railroad construction and maintenance.
Cross ties, for 45 lb. to 100 lb. rails	
Splice bars, for 45 lb. to 100 lb. rails	
Draw bars, 6" to 15"	

TABLE NO. V  
POPULATION TRENDS  
1860-1950

	UTAH COUNTY			UTAH STATE		
	Population	Increase		Population	Increase	
		No.	%		No.	%
1860	8,248	--	--	40,273	--	--
1870	12,203	3,955	48.0	86,786	46,513	115.5
1880	17,973	5,770	47.3	143,963	57,177	65.9
1890	23,768	5,795	32.2	210,779	66,816	46.4
1900	32,456	8,688	36.6	276,749	65,970	31.3
1910	37,942	5,486	16.9	373,351	96,602	34.9
1920	40,792	2,850	7.5	449,396	76,045	20.4
1930	49,021	8,229	20.2	507,847	58,451	13.0
1940	57,437	8,416	17.2	553,010	45,163	8.9
1950	81,912	24,475	42.6	688,862	135,853	24.6
1952	83,200			704,000	15,138	

Source: U. S. Census of the Census.  
Population. Various years.

(Continued)



TABLE NO. V (CONTINUED)

POPULATION TRENDS  
1860-1950

	<u>WESTERN STATES</u>			<u>UNITED STATES</u>		
	<u>Population</u>	<u>Increase</u>		<u>Population</u>	<u>Increase</u>	
		<u>No.</u>	<u>%</u>		<u>No.</u>	<u>%</u>
1860	618,976	--	--	31,443,321	--	--
1870	990,510	371,534	60.4	39,818,449	8,375,128	26.6
1880	1,767,697	777,187	78.5	50,155,783	10,337,334	26.0
1890	2,402,269	634,572	35.9	62,947,714	12,791,931	25.5
1900	4,091,349	1,689,080	70.3	75,994,575	13,046,861	20.7
1910	6,825,821	2,734,472	66.8	91,972,266	15,977,691	21.0
1920	8,902,972	2,077,151	30.4	105,710,620	13,738,354	14.9
1930	11,896,222	2,993,250	33.6	122,777,046	17,064,426	16.1
1940	13,883,265	1,987,043	16.7	131,669,275	8,894,229	7.2
1950	19,561,525	5,678,260	40.9	150,697,361	19,028,086	14.5
1952				158,216,000		

Source: U. S. Census of the Census.  
Population. Various years.

TABLE NO. VI

UTAH COUNTY LABOR FORCE AND EMPLOYMENT BY  
INDUSTRY, OCCUPATION, AGE AND SEX  
APRIL 1950 (1)

	<u>Total</u>	<u>Male</u>	<u>Female</u>
Population all ages	81,912	41,345	40,567
Under 20	36,476	18,613	17,860
20-39	24,818	12,416	12,402
40-59	14,002	7,162	6,840
60 and over	6,619	3,154	3,465
Labor Force (Civilian)	25,601	20,197	5,404
Employed	24,057	18,993	5,064
Unemployed	1,544	1,204	340
Not in Labor Force 14 years and over	29,456	7,238	22,218
Employed by Occupation	24,057	18,993	5,064
Professional & Technical	2,395	1,632	763
Farmers and Farm Labor	2,943	2,793	150
Managers and Proprietors	1,938	1,735	203
Clerical & Kindred Workers	2,301	855	1,446
Sales	1,671	1,072	599
Craftsmen	4,591	4,528	63
Operatives	3,668	3,287	381
Service and Domestic	2,235	913	1,322
Laborers and Occupations, NEC	2,315	2,178	137
Employed by Industry	24,057	18,993	5,064
Agriculture	3,018	2,861	157
Mining	282	274	8
Construction	2,296	2,265	31
Manufacturing	6,170	5,682	488
Trans. Comm., & Utilities	1,771	1,494	277
Wholesale & Retail Trade	4,138	2,730	1,408
Finance, Ins. & Real Estate	528	339	189
Service and Other, NEC	3,897	2,148	1,749
Public Adm. and Schools	1,957	1,200	757
Median School years completed	12.1		
Median income 1949	\$3,130		
Number of households	20,559		
Population per household	3.8		
Number of non-whites	315		

1. Source: U. S. Census of Population, 1950

TABLE NO. VII  
DEMAND DEPOSITS  
BANK Y

Month	1940	1941	1942	1943	1944	1945
January	\$ 265,743	\$ 139,635	\$ 184,151	\$ 603,908	\$ 944,695	\$ 908,214
February	135,774	134,589	184,232	588,027	989,623	864,699
March	138,317	154,434	217,210	594,282	786,615	966,412
April	164,186	163,230	286,024	621,549	829,284	933,358
May	146,918	177,858	314,557	679,527	843,019	1,000,660
June	143,369	282,667	349,511	778,360	812,479	936,925
July	140,997	181,847	398,465	811,055	854,028	906,924
August	143,919	279,593	349,747	887,723	821,118	998,269
September	267,330	221,047	440,486	998,411	898,799	1,102,754
October	165,334	222,042	553,415	950,999	950,628	1,217,632
November	181,289	225,355	609,209	1,110,266	941,880	1,169,382
December	179,648	244,163	636,841	1,034,551	946,254	1,175,448
TOTAL	\$2,072,825	\$2,426,460	\$4,523,848	\$9,658,658	\$10,618,424	\$12,180,677

	1946	1947	1948	1949	1950
January	\$1,170,633	\$ 935,530	\$ 900,143	\$1,040,170	\$ 950,107
February	1,287,341	968,284	944,769	1,034,919	931,239
March	1,137,279	995,413	974,133	943,652	920,359
April	1,102,154	886,250	866,831	926,033	870,791
May	1,113,061	870,298	840,478	984,692	946,206
June	1,102,563	1,026,670	798,646	939,834	895,531
July	1,028,543	910,258	890,204	976,635	890,542
August	1,024,311	905,452	1,045,161	961,022	973,848
September	1,409,691	1,046,467	1,103,673	1,015,576	958,094
October	1,259,292	971,434	1,119,913	988,299*	1,000,181
November	1,193,516	1,013,627	1,259,013	1,045,246	1,025,909
December	1,155,920	1,022,405	1,047,144	1,006,800	977,887
TOTAL	\$13,984,303	\$11,552,088	\$11,790,108	\$11,862,877	\$11,340,695

\* Not available -- two preceding months average taken.

Source: Data obtained personally from Bank Y, Utah County, Utah.

Note: Columns have been added in detail but do not necessarily reflect on exact total due to rounding.

TABLE NO. VIII

SAVINGS - DEPOSITS  
BANK Y

<u>Month</u>	<u>1940</u>	<u>1941</u>	<u>1942</u>	<u>1943</u>	<u>1944</u>	<u>1945</u>
January	\$ 149,824	\$ 280,712	\$ 296,390	\$ 460,374	\$ 742,638	\$ 958,744
February	265,883	276,501	300,685	473,862	742,038*	986,856
March	262,194	273,010	301,103	485,114	755,732	1,031,300
April	257,756	271,129	317,190	503,741	786,652	1,069,508
May	257,224	272,562	334,954	526,034	810,879	1,079,858
June	260,539	179,558	345,186	557,347	822,304	1,034,162
July	267,240	278,154	352,345	596,933	808,002	1,108,402
August	268,381	183,121	375,206	604,906	837,799	1,129,119
September	147,680	281,977	395,473	623,339	860,387	1,153,571
October	270,832	294,080	414,248	682,111	887,260	1,176,422
November	272,978	295,927	421,334	717,815	912,623	1,193,753
December	281,907	302,276	445,125	741,438	899,942*	1,211,491
Total	\$2,962,438	\$3,189,006	\$4,299,240	\$6,973,013	\$9,866,256	\$13,133,186
	<u>1946</u>	<u>1947</u>	<u>1948</u>	<u>1949</u>	<u>1950</u>	
January	\$1,196,533	\$1,115,420	\$1,069,812	\$1,042,297	\$ 998,672	
February	1,150,640	1,104,430	1,066,051	1,035,148	989,479	
March	1,137,651	1,093,589	1,052,951	1,038,635	981,398	
April	1,125,332	1,092,969	1,018,038	1,033,301	969,718	
May	1,114,142	1,081,150	997,879	1,028,895	965,818	
June	1,115,792	1,090,131	1,012,551	1,041,294	974,250	
July	1,116,847	1,057,296	1,012,522	1,026,445	977,567	
August	1,119,833	1,037,352	1,015,223	985,381	965,553	
September	1,130,603	1,041,359	1,026,596	990,599	948,238	
October	1,120,395	1,044,092	1,018,408	987,990	960,419	
November	1,105,213	1,075,158	1,034,932	981,489	978,472	
December	1,097,777	1,067,255	1,051,398	1,005,771	1,008,366	
Total	\$13,530,757	\$12,900,202	\$12,376,363	\$12,197,246	\$12,716,632	

\* Not available -- two preceding months average taken.

Source: Data obtained personally from Bank Y, Utah County, Utah.

Note: Columns have been added in detail but do not necessarily reflect on exact total due to rounding.

TABLE NO. IX  
DEMAND DEPOSITS  
BANK Z

Month	1940	1941	1942	1943	1944	1945
January	\$ 196,060	\$ 230,035	\$ 284,158	\$ 674,221	\$1,088,162	\$1,140,676
February	205,468	233,554	281,447	686,146	1,176,348	1,155,284
March	205,773	238,740	300,705	660,012	1,061,807	1,098,300
April	199,678	243,653	318,535	717,553	1,012,179	1,056,173
May	221,346	239,554	340,505	763,368	1,013,108	1,113,238
June	212,862	251,432	354,370	788,414	1,039,901	1,211,446
July	237,434	256,471	382,179	844,227	1,097,554	1,255,980
August	215,178	256,716	406,146	912,489	1,097,100	1,248,371
September	249,655	272,641	479,460	936,627	1,123,576	1,367,747
October	245,472	286,282	529,058	962,246	1,092,937	1,486,447
November	249,720	308,676	607,380	1,028,114	1,199,397	1,577,479
December	272,571	308,321	697,259	1,100,635	1,206,944	1,586,916
TOTAL	\$2,711,215	\$3,126,074	\$4,981,201	\$10,074,053	\$13,209,015	\$15,298,058

	1946	1947	1948	1949	1950
January	\$ 1,472,265	\$ 1,251,838	\$1,344,123	\$ 1,224,971	\$ 1,195,483
February	1,510,316	1,185,558	1,417,716	1,221,327	1,234,163
March	1,495,094	1,223,127	1,376,119	1,175,254	1,222,977
April	1,499,463	1,168,074	1,239,408	1,166,601	1,182,187
May	1,457,068	1,202,632	1,222,466	1,191,235	1,187,580
June	1,357,118	1,208,436	1,243,220	1,155,746	1,153,370
July	1,358,787	1,220,206	1,297,915	1,094,665	1,163,319
August	1,328,785	1,209,924	1,196,713	1,129,610	1,173,458
September	1,456,750	1,378,100	1,304,950	1,119,972	1,289,204
October	1,459,292	1,446,600	1,393,665	1,256,789	1,423,009
November	1,463,405	1,511,093	1,393,217	1,302,423	1,403,784
December	1,404,907	1,541,471	1,255,948	1,298,640	1,338,124
TOTAL	\$17,263,251	\$15,547,059	\$15,685,459	\$14,337,231	\$14,966,657

Source: Data obtained personally from Bank Z, Utah County, Utah.

Note: Columns have been added in detail but do not necessarily reflect an exact total due to rounding.

TABLE NO. X  
SAVINGS DEPOSITS  
BANK Z

Month	1940	1941	1942	1943	1944	1945
January	\$ 195,927	\$ 203,949	\$ 206,982	\$ 364,362	\$ 619,328	\$ 883,586
February	194,489	200,855	209,820	380,439	638,323	910,557
March	210,724	200,907	218,443	403,761	645,193	937,399
April	195,960	203,567	216,443	431,705	662,226	962,845
May	196,669	201,485	214,930	456,781	682,475	981,010
June	201,965	204,981	230,083	466,876	711,014	1,011,344
July	217,603	204,582	233,760	478,134	727,549	1,025,498
August	200,043	208,761	247,182	499,294	743,903	1,040,984
September	207,209	210,631	262,614	507,849	773,492	1,065,535
October	204,895	206,746	297,739	529,194	803,358	1,078,213
November	204,146	211,011	313,101	558,272	830,088	1,085,819
December	207,115	213,764	340,945	587,903	858,461	1,084,450
TOTAL	\$2,436,744	\$2,471,239	\$2,992,042	\$5,664,571	\$8,695,410	\$12,067,240

	1946	1947	1948	1949	1950
January	\$1,083,507	\$1,064,957	\$1,000,594	\$ 970,017	\$ 952,640
February	1,083,232	1,063,037	1,006,419	998,156	957,009
March	1,064,216	1,038,826	998,782	991,353	944,750
April	1,082,690	1,020,221	993,863	982,743	932,961
May	1,081,040	1,011,181	999,501	967,998	950,783
June	1,071,939	1,034,100	1,002,740	973,530	964,301
July	1,078,799	1,030,269	978,649	978,084	918,990
August	1,081,978	1,018,005	973,414	973,416	909,478
September	1,067,241	1,005,430	971,631	992,925	909,315
October	1,074,395	1,008,008	975,392	963,326	908,993
November	1,071,164	1,000,285	982,131	947,921	929,964
December	1,051,752	998,604	976,129	964,629	918,488
TOTAL	\$12,891,954	\$12,292,924	\$11,859,244	\$11,704,099	\$11,197,672

Source: Data obtained personally from Bank Z, Utah County, Utah.

Note: Columns have been added in detail but do not necessarily reflect an exact total due to rounding.

TABLE NO. XI

## WAGE RATES AT GENEVA

AGREEMENTS BETWEEN GENEVA STEEL COMPANY AND THE UNITED STEELWORKERS OF  
AMERICA

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AGREEMENT of May 7, 1947 - Geneva Plant, Geneva, Utah

<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>	<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>
0-1	1.09	17	1.73
2	1.13	18	1.77
3	1.17	19	1.81
4	1.21	20	1.85
5	1.25	21	1.89
6	1.29	22	1.93
7	1.33	23	1.97
8	1.37	24	2.01
9	1.41	25	2.05
10	1.45	26	2.09
11	1.49	27	2.13
12	1.53	28	2.17
13	1.57	29	2.21
14	1.61	30	2.25
15	1.65	31	2.29
16	1.69	32	2.33

AGREEMENT of August 15, 1952 - Pittsburgh, Pennsylvania

<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>	<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>
0-1	1.435	17	2.315
2	1.49	18	2.37
3	1.545	19	2.425
4	1.60	20	2.48
5	1.655	21	2.535
6	1.71	22	2.59
7	1.765	23	2.645
8	1.82	24	2.70
9	1.875	25	2.755
10	1.93	26	2.81
11	1.985	27	2.865
12	2.04	28	2.92
13	2.095	29	2.975
14	2.15	30	3.03
15	2.205	31	3.085
16	2.26	32	3.14

TABLE NO. XI  
(CONTINUED)AGREEMENT OF July 1, 1954 - San Francisco, California

<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>	<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>
0-1	1.57	17	2.45
2	1.625	18	2.505
3	1.68	19	2.56
4	1.735	20	2.615
5	1.79	21	2.67
6	1.845	22	2.725
7	1.90	23	2.78
8	1.955	24	2.835
9	2.01	25	2.89
10	2.065	26	2.945
11	2.12	27	3.00
12	2.175	28	3.055
13	2.23	29	3.11
14	2.285	30	3.165
15	2.34	31	3.22
16	2.395	32	3.275

AGREEMENT of July 1, 1955 - Pittsburgh, Pennsylvania

<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>	<u>Job Class</u>	<u>Standard Hourly Wage Rate</u>
0-1	1.685	17	2.645
2	1.745	18	2.705
3	1.805	19	2.765
4	1.865	20	2.825
5	1.925	21	2.885
6	1.985	22	2.945
7	2.045	23	3.005
8	2.105	24	3.065
9	2.165	25	3.125
10	2.225	26	3.185
11	2.285	27	3.245
12	2.345	28	3.305
13	2.405	29	3.365
14	2.465	30	3.425
15	2.525	31	3.485
16	2.585	32	3.545



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