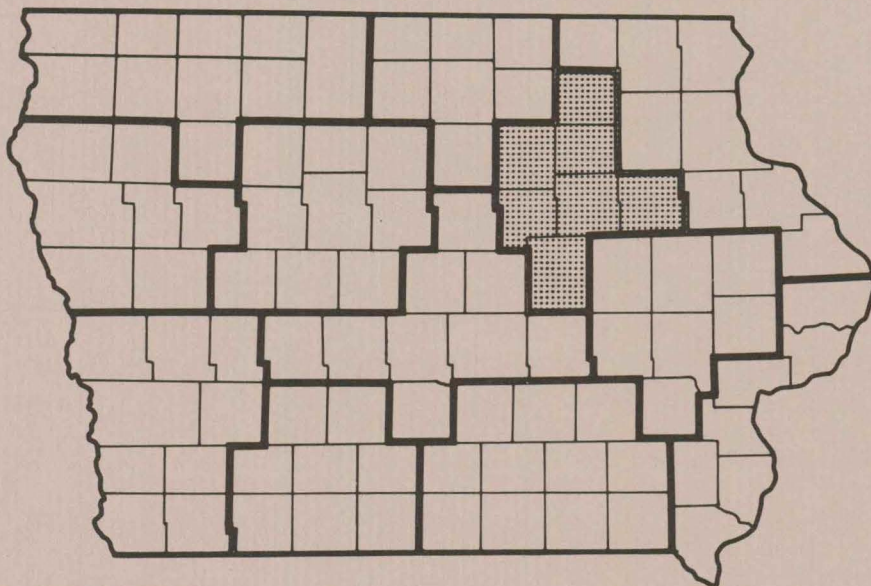


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An Economic Base Study of

IOWA'S WATERLOO AREA



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AN ECONOMIC BASE STUDY OF IOWA'S WATERLOO AREA

Introduction

This is a report of the economic activity and associated changes in a seven county area in North Iowa. The counties included are Black Hawk, Bremer, Buchanan, Butler, Chickasaw, Grundy and Tama.

The Waterloo-Cedar Falls and suburbs combination, with over 100,000 combined population, is the central city of the area. Most of the area is in the Waterloo-Cedar Falls trade territory except perhaps for the parts of the counties closest to Cedar Rapids and Mason City. On the other hand, Waterloo influence reaches into some territory in each direction that is not part of the defined area. The entire area is in the Northeast quadrant of Iowa, but it does not reach to either of the north or east borders of the state. The area has had a productive agricultural base which is not diminishing but is being overshadowed by a growing industrial base. The industrial jobs are concentrated largely at Waterloo, but heavy commuting activity spreads the benefits throughout the area.

The area had a total population of almost 234,000 in 1960. The estimated population in 1967 was just short of 241,000. In the 10 years before 1960, the area had increased about 25,000 in population.

Total employment in the area has been increasing by slightly more than one percent per year during the 1960's. Agriculture is continuing its long-term employment decline while employment in most of the other sectors is growing.

Within the area the most open country is steadily declining in both employment and population, but most towns and small cities show slow to moderate growth.

The Export Base

The employment analysis in this report uses the theory of the export base and its multiplier effect. An export base exists whenever an area specializes in the production of some products for which it finds markets outside the area.

Almost any populated area anywhere in the United States has an export base. The reason is that people want to use the full range of products produced by modern society, most of which are produced more inexpensively by volume production in other areas. An area earns the money to import this collection of desired products by producing and exporting a surplus of the goods with which it can best compete in state, national and world markets.

Workers who produce these exported goods are called export employees. The number of export employees that can exist in an area is determined by the area's success in selling to the 'outside world.'

Prepared by Marvin Julius, Extension Economist

A second class of workers, called domestic workers exists to furnish the services and the goods that can be most efficiently produced locally when demanded for local use. Examples of domestic employees are retail workers, teachers, ministers, local government officials and all of the others who produce for the local market. The number of domestic workers that can exist in an area is determined by the number of export employees in an area. The export employees create the original demand for locally produced goods and services.

In present-day Iowa areas of about 50,000 employment, the domestic workers usually make up about one-half of the total work force. Since the other half are export workers, the relationship between export and domestic workers is often described as a one-to-one ratio. Actually this ratio varies somewhat according to the employment total of the area, the industry mix and the point in time at which the ratio is measured.

Figure 1 illustrates the receipt of outside money in return for exports, the circulation of this money in the area to facilitate domestic activities and the payment of this money to the outside in return for imports.

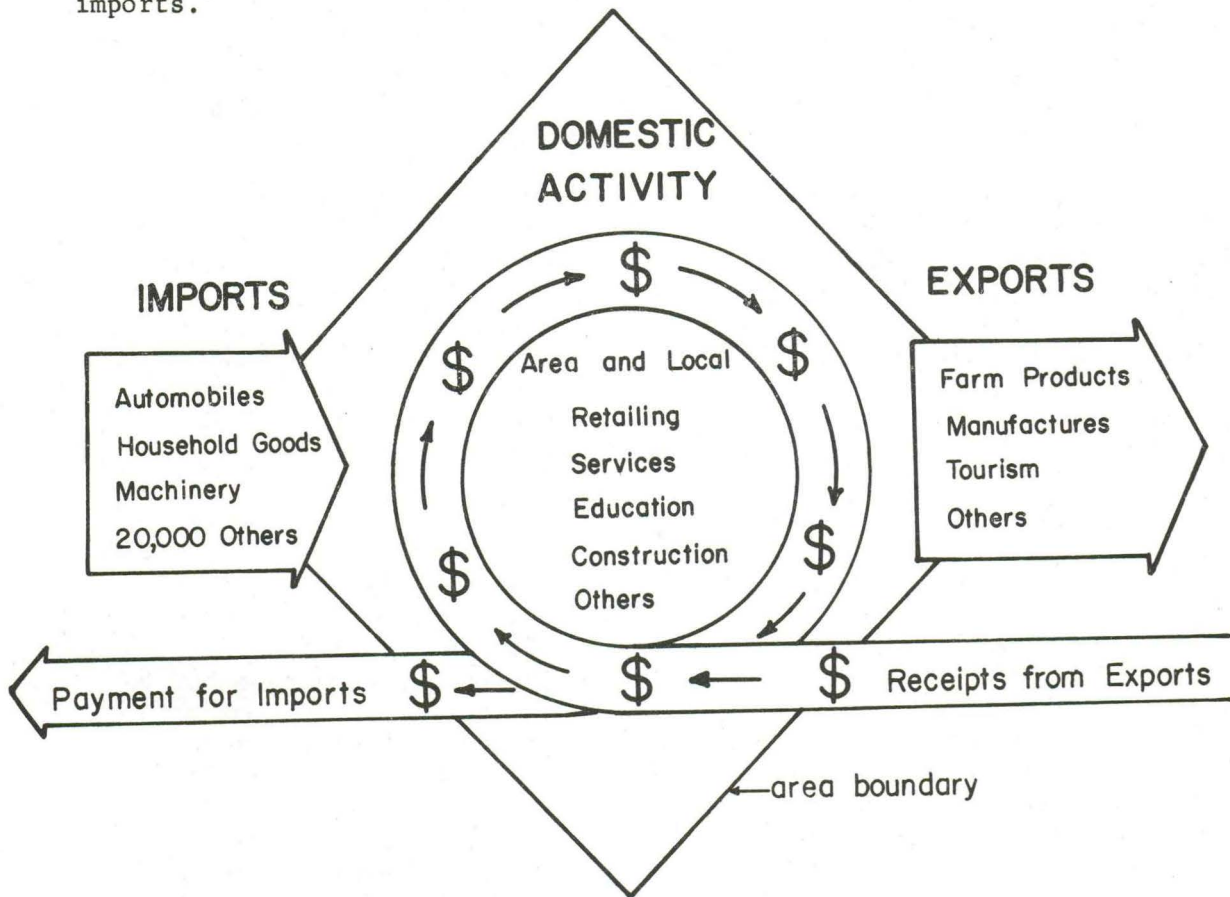


Figure 1. Export Domestic and Import Relationships.

The Changing Base

Table 1 provides employment comparison information for the Waterloo area for 1960 and 1967. Employment is divided into export and domestic categories for each type of export activity. Both male and female employment is included, but is not separately identified.

Agriculture has been and still is an important export sector in this area. It provided over one-third of the area's export employment in 1960 and over one-fourth of the export employment in 1967. Between these years the export employment of agriculture declined by 2,777. This degree of employment decline is typical for agriculture in all areas of Iowa as labor in farming continues to be replaced by capital in the cultivation of a fixed amount of land.

Manufacturing is the largest export sector in this area. It accounted for 46 percent of total export employment in 1960 and increased to 52 percent of the total by 1967. The gain of 3,482 employees was about twice the net export gain over all sectors.

Trade has been providing about 10 percent of total export. By 1967, services was approaching the 5 percent level. Trade export includes out-shipment of farm produce by wholesalers and retail sales beyond area boundaries. The services export is largely connected with the post high school educational institutions of the area.

In total, export employment increased by 1,765 workers between 1960 and 1967. In 1960 there were about 97 domestic workers for every 100 export workers. If the same ratio had existed also in 1967, domestic employment would have increased by 1,762. Actually, domestic employment increased by 6,002. The extra increase resulted because the ratio had changed to 107 domestic workers for every 100 export workers by 1967. The higher ratio would have produced a gain of 4,117 domestic workers without any change in export employment. Both export changes and changes in the ratio over time influence the level of domestic employment.

Export-Domestic Relationships

The employment generating effects of export activity are represented in the three columns of table 1, entitled "Domestic Employment." For example, in 1960, 17,158 employees are listed across from "Agricultural export." These persons have jobs which can be said to exist because of the agricultural export activity of the area. Some of these jobs can be thought of as directly related to agriculture. Examples are fertilizer salesmen, tank truck drivers and machinery repairmen. Other jobs are indirectly related to agriculture. An example is the barber whose customers include fertilizer salesmen, tank truck drivers and machinery repairmen. People who serve both farmers and non-farmers, as the barber might, can be both directly and indirectly dependent on agricultural export activity.

Table 1. Area Export and Domestic Relationships

Type of Activity	Export Employment			Domestic Employment		
	1960	1967	Change	1960	1967	Change
Agricultural export	15,407	12,630	-2,777	17,158	18,653	1,495
Construction and Mining export	242	331	89	222	302	80
Manufacturing export	19,455	22,937	3,482	16,716	20,171	3,455
Transportation, Communications and Utilities export	1,506	1,219	-287	1,261	1,070	-191
Wholesale and Retail export	4,192	5,041	849	4,505	5,368	863
Finance, Insurance & Real Estate export	522	315	-207	437	262	-175
Services export	1,421	2,037	616	1,189	1,664	475
Area	42,745	44,510	1,765	41,488	47,490	6,002

In total, 17,158 represents the number of domestic jobs of many kinds that could not have existed in the area in 1960 if agricultural export had not been operating at a level of 15,407 employees in 1960.

In some ways, the relationship between a sector's export activity and the domestic employment related to it is a unique one. No two export activities have the same export-domestic ratio for any year (except by coincidence). This is because each sector has its individual pattern for the portion of its inputs which it buys locally and that which it imports. Agriculture, for example, is a relatively heavy purchaser from local wholesale and retail outlets, while manufacturing is more likely to buy raw materials and tools in quantity lots from distant sales outlets.

In the between years comparison, agricultural export decline was partially counteracted by an increase of 1,495 in the domestic employment related to it. The ratio of 18,653 domestic workers to 12,630 export workers that existed for agriculture in 1967 is equivalent to 148 domestic workers for every 100 export workers. This is up sharply from the 111 to 100 ratio which existed in 1960.

Table 2. Total Effects of Export Activity

Type of Activity	Export Plus Domestic Employment		
	1960	1967	Change
Agricultural export	32,565	31,283	-1,282
Construction and Mining export	464	633	169
Manufacturing export	36,171	43,108	6,937
Transportation, Communications and Utilities export	2,767	2,289	-478
Wholesale and Retail export	8,697	10,409	1,712
Finance, Insurance and Real Estate export	959	577	-382
Services export	2,610	3,701	1,091
Area	84,233	92,000	7,767

The domestic employment related to manufacturing showed the largest rise (3,455 employees) between 1960 and 1967. This growth can be attributed mostly to the rise of manufacturing export employment during this period.

Table 2 provides a comparison of the relative importance of the export activity of each sector to the area. In 1967, for example, agricultural export accounted for a total of 31,283 jobs when we count both the export employment of agriculture and the domestic employment related to it. This was 34 percent of the total employment of the area. Manufacturing export was responsible for 47 percent of the total employment, and wholesale and retail export provided for 11 percent of the total. In 1960 the comparable percentages were 39 percent for agricultural export, 43 percent for manufacturing and 10 percent for wholesale and retail.

Employment by Sectors

Table 3 shows employment identified by sectors for both 1960 and 1967 and the change in each sector during the period. The employment in each sector includes both the export and domestic employment of that sector. The domestic employment in this table is included with the sector from which it comes and not with the sector to which it relates in an export-domestic sense.

Table 3 provides a good picture of the change of composition of the labor force, but it does not provide a cause and effect picture of employment shifts. Table 3 shows that agriculture jobs declined by 3,301 during the seven year period and that sector slipped from 21 percent of total employment in 1960 to 16 percent in 1967. Corresponding increases were registered by manufacturing, services and wholesale and retail with 3 percent, 2 percent and 1 percent jumps, respectively.

One employment shift that is not revealed by tables 1, 2, or 3 is the increasing proportion of females in the labor force. The gains in the trade and services sectors may have been 50 percent female while the loss in counted employment in agriculture was probably more than 85 percent male. It is probable that, while total employment gained between 1960 and 1967, male employment increased less. The number of families in the area increased somewhat, but the increased employment was accomplished also by a shift to more workers per family.

Table 3. Employment by Sectors 1960-1967

Sector	1960	Employment		Percent of Total		
		1967	Change	1960	1967	Change
Agriculture	17,712	14,411	-3,301	21	16	-5
Construction & Mining	4,206	4,676	470	5	5	0
Manufacturing	21,283	24,939	3,656	24	27	3
Transportation, Communications, & Utilities	4,755	4,689	-66	6	5	-1
Wholesale & Retail	15,807	18,598	2,791	19	20	1
Finance, Insurance & Real Estate	2,312	2,587	275	3	3	0
Services	18,158	22,100	3,942	22	24	2
Area	84,233	92,000	7,767	100	100	0

Income

The incomes of individuals and families and changes in these incomes are very important in measuring the economic progress of an area. It can be preferable to have a declining employment and population situation if the decline is associated with fuller employment and higher incomes for the remaining people. This type of decline is occurring in much of rural America, including the rural parts of the Waterloo area. Income per farmer is generally rising as farm consolidation continues, but an associated result is fewer farmers and fewer merchants to serve remaining farm households. The alternative of a constant number of farmers with declining incomes would probably be even less desirable for both farmers and merchants.

The most recent overall measurement of the income levels in the Waterloo area was made with the population census of 1960. We will not have a later one for comparison purposes until after 1970. As a substitute for the overall income picture for recent years, a comparison of average annual earnings of private wage and salary workers for 1959 and 1967 for each county is presented in table 4 with the Iowa average as a comparison base.

The earnings information on self-employed persons and government employed persons is not included in table 4. Also missing is any information on income from property ownership and from transfer payments such as social security allotments.

Table 4 is, thus, only an indicator of the income situation in the counties of the area, particularly for non-agricultural employment. It indicates that, except for Black Hawk County, incomes were not as high as the Iowa average in either 1960 or 1967. On the other hand the increase in several counties was comparable to the Iowa average per worker increase. Black Hawk has been the leader in income level, and Bremer has been first among the outlying counties. Butler has been in lowest position during most of the 1960's while Chickasaw, which was in last place in 1960, had the largest increase of all the area counties.

Higher average family incomes allow families to buy more goods and services. This in turn creates a need for more domestic workers to produce or deliver or retail these goods and services.

Table 4. Average Annual Earnings, Private Wage & Salary Workers

County	1959*	1967	Change
Black Hawk	\$5,244	\$6,000	\$ 756
Bremer	3,760	4,616	856
Buchanan	3,048	3,816	768
Butler	2,896	3,596	700
Chickasaw	2,808	4,100	1,292
Grundy	3,236	3,900	684
Tama	3,228	3,896	668
Iowa Average	4,280	5,028	748

Source: County Business Patterns

* Adjusted to 1967 dollars

The average family income increase is probably the most important factor of those which tend to increase the domestic-export ratio. However, it is supplemented in the agriculture sector by the tendency of farmers to purchase increasing amounts of production services (feed processing, fertilizer spreading, etc.) and locally sold production inputs (fertilizer, chemicals, feed supplements, etc.)

Agriculture

The structure of agriculture in the Waterloo area was last described in detail by the 1964 Census of Agriculture. Selected information from this census is presented in the following paragraphs.

The total number of operations classified as farms in 1964 was 12,479. Of these, 91 percent or 11,297 were classified as commercial farms. Generally, under Iowa conditions, a commercial farm is one which has sales of \$2,500 or more per year. Non-commercial farms have less than \$2,500 of sales per year and usually are operated by persons with other employment or by partially retired persons over 65 years of age. However, these same types of people are also found on some commercial farms.

Table 5 gives some information on the commercial farms of the area in regard to certain characteristics. In 1964, 318 of them were 500 acres or over in size. This was 3 percent of all the commercial farms in the area. The comparable percentage for all of Iowa was 6 percent. Hiring of a substantial amount of labor occurred on 8 percent of the area farms as compared to 10 percent for Iowa. Looking at the numbers in a different way, it can be said that about 92 percent of the commercial farms had less than the equivalent of a full-time hired-man.

The practice of working off the farm by the operator appears to be more prevalent in this area than for the state as a whole. Probably this is due to a relative abundance of non-farm jobs in the cities and some towns of the area.

Farming at a commercial level by operators 65 years of age or over is somewhat less prevalent here than for the state as a whole. Generally, the percentages associated with this characteristic are higher in Southern Iowa and lower in Northern Iowa.

Table 5. Commercial Farms with Selected Characteristics, 1964

Characteristic	Area Number	Area Percent	Iowa Percent
500 acres or over in size	318	3	6
Hiring 150 days of labor or more	969	8	10
Operator working off farm 100 days or more	1,549	14	12
Operator 65 years of age or older	719	6	8

Source: Agriculture Census
Analysis by H. B. Howell, Extension Economist

Farm Size and Sales

Table 6 presents the distribution of farms (commercial and non-commercial) of the area according to size in total acres. Farms smaller than 140 acres accounted for 34 percent of all farms, but only 14 percent of the total farmland was included in farms of this size group. At the other extreme, 22 percent of the farms were 260 acres or over and 42 percent of the farmland was in farms of this group. By 1970 it is likely that at least 50 percent of the land will be in farms of 320 acres or larger. This statistic seems to illustrate the march of farm technology and resulting consolidation more dramatically than does the average farm size measure, which is often pulled down by a large number of small part-time and retirement farming units.

Table 6. Farms by Size in Acres, 1964

Size Class	Percent of Farms	Percent of Land in Farms
0-139 acres	34	14
140-179 acres	21	18
180-259 acres	23	26
260 acres and over	22	42

Source: Agriculture Census

Analysis by H. B. Howell, Extension Economist

Table 7 also shows a size distribution of farms by product sales volume in dollars. Since both livestock and crop production may be reflected in sales volume, it is usually a better indicator of farm income than is size in acres alone. Most of the farms with sales over \$30,000 (11 percent of all the farms) were probably producing adequate returns for the labor and capital and management time involved. Most of the farms with sales under \$10,000 were probably producing quite low returns for the labor and management time involved, except for those farmers who used a substantial amount of their time in off-farm employment.

The 50 percent of the farms with sales of \$10,000 to \$29,999 includes most of the typical family farm situations of the middle 1960's. Incomes are not as high as the farmers and their families might wish, but neither are they so poor as to cause large-scale desertion from farming.

Table 7. Farms by Product Sales Volume, 1964

Sales Class	Percent of Farms	Percent of Total Sales
\$30,000 and over	11	31
\$10,000 to \$29,999	50	55
Less than \$10,000	39	14

Source: Agriculture Census

Analysis by H. B. Howell, Extension Economist

Growing Output

Table 8 is presented in order to show that farming is not a declining industry in terms of output. Between the two time periods shown, a 7 year span of time on the average, some dramatic increases occurred. Corn production was up over 14 million bushels for a 24 percent increase. Soybean production was up 164 percent, fed cattle up 28 percent, beef cow numbers up 33 percent, but swine were down 9 percent. Lamb feeding and raising were both down, but these are minor enterprises for this area. The decline in milk cows of 17 percent is a decline in a major farm enterprise. If an index of overall farm output for Iowa areas were available, it seems likely that total output of the Waterloo area would show some increase for the 7 year period.

The percentage changes for each enterprise of the area can be compared to comparable changes for Iowa. It appears that the Waterloo area has been concentrating particularly on soybeans as an expansion possibility. Beef cow numbers are not increasing as rapidly as in the state, but dairy cow numbers are decreasing less rapidly. The failure to increase fed beef and swine as rapidly as the state may be caused at least partially by growing income opportunities in crop farming and off-farm work.

Table 8. Agricultural Output

Enterprise	Unit	1958-60	1965-67	Change	Percent Change	
					Area	Iowa
Corn	1000 bu	59,576	74,048	14,472	24.3	23.9
Soybeans	1000 bu	3,491	9,226	5,735	164.3	100.2
Fed cattle	1000 head	159	204	45	28.3	44.9
Beef cows	1000 head	51	68	17	33.3	39.2
Pigs born	1000 head	1,646	1,496	-150	-9.1	2.4
Fed lambs	1000 head	82	56	-26	-31.7	-27.4
Lambs born	1000 head	46	35	-11	-23.9	-27.7
Milk cows	1000 head	116	96	-20	-17.2	-23.8

Source: Iowa Assessors Annual Farm Census, Adjusted

Analysis by Gene Futrell, Marvin Skadberg, Allan Rahn, Extension Economists.

Manufacturing

Manufacturing is a sector of major and growing importance in the area. The one large export and related employment increase of the 1960-1967 period was the almost 7,000 additional employment in manufacturing export plus related employment. Manufacturing export activity has been the primary force responsible for the emergence of this area as a metropolitan community. The heavy manufacturing employment has emerged from the typical pattern of a large industrial city with a number of satellite centers. The large city has some very large plants and a multitude of plants of medium and small size. The satellite towns generally have smaller plants. This pattern seems likely to continue in the Waterloo area.

The amount of manufacturing growth that has occurred has probably eased considerably the strains of agricultural adjustment. The small cities and most large towns of the area have been helped to maintain or moderately increase their populations. A number of smaller towns have benefited similarly, either from the location of small manufacturing plants in the towns or by serving as residence locations for commuters working in plants in nearby towns or cities.

Table 9. Manufacturing Employment

County	1960	1967	Change	Percent County is of area with respect to		
				1960 Employ- ment	1960-67 Change	1967 Employ- ment
Black Hawk	18,251	21,446	3,195	86	87	86
Bremer	925	1,233	308	4	9	5
Buchanan	613	501	-112	3	-3	2
Butler	313	328	15	1	1	1
Chickasaw	356	511	155	2	4	2
Grundy	343	502	159	2	4	2
Tama	482	418	-64	2	-2	2
Area	21,283	24,939	3,656			

Employment

Table 9 shows the employment in manufacturing for each of the counties of the area for 1960 and 1967 and the change during the period. A noticeable characteristic is the concentration of manufacturing activity in Black Hawk County. About 86 percent of the manufacturing jobs of the area have been located in Black Hawk County, and 87 percent of the 1960-67 manufacturing employment growth occurred there. Of the other counties, only Bremer, with about 1,000 jobs in manufacturing, has stayed much above 500. The 500 job level is about the point where manufacturing within a county can begin to qualify as an important employment source. For several of the outlying counties, the number of commuters to manufacturing jobs in the Waterloo vicinity about equals the number of local manufacturing jobs.

Kinds of Manufacturing

The diversity of manufacturing activity is illustrated in Table 10. It would be difficult to describe a typical manufacturing plant. Of the 284 individual plants in the area in 1963, 211 had less than 20 employees. On the other hand three plants had 500 or more employees and two of these had well over 1,000.

Manufacturing activity is divided into some general categories in Table 10 in order to provide some understanding of the reasons for manufacturing in the area. "Processing of agricultural produce" is the category that includes meat packing, animal feed production, dairy products processing, and other activities connected with food or feed. This category covered 77 plants including one of the two largest and one-fourth of the plants with more than 100 workers.

A second category is "Processing of other local resources." This category included 33 plants, but 27 of these were in the smallest size category with less than 20 employees each. Almost all of the plants in this category in the Waterloo area were engaged in concrete mixing or forming. A few of the others were engaged in operations involving wood products. The Waterloo area generally lacks sizable concentrations of trees, gypsum, limestone or clay needed to support large-scale manufacturing in this category.

"Production of non-feed inputs for agriculture" includes mainly farm machinery production, fertilizer production and animal biological products. There were 21 such plants in 1963, including one of the two largest plants. Undoubtedly the number of small fertilizer plants has increased since 1963.

"Area newspapers and printing" is a manufacturing category because printing is defined as a manufacturing operation. This category includes all of the newspapers of the area, and these accounted for a large part of the 42 smallest plants in this category.

The four categories described so far have the common characteristic of being, to some degree, attached to the area. The plants of the first three categories fit in with the agricultural and natural resources of the area. The newspapers and printers of the fourth category exist to serve the residents and advertisers of the area. In total, the four categories included 179 plants in 1963.

The other 105 plants have been categorized as non-attached manufacturing -- non-attached in the sense that neither the raw materials used, the products produced, nor the markets served would indicate that plants like these would be expected to exist in the area. Products of this group include specialized pumps, sporting and athletic goods, signs and displays, metal stampings, boiler shop products, construction machinery, electronic components and at least 50 other kinds of products.

In many areas of Iowa much of the increase of manufacturing employment since 1960 has been in the non-attached category. Many of the "non-attached" firms were probably started by local persons with the aid of some local financing. Many may have started and failed over the years, but a few have grown to moderate or larger size and many others have stayed small but profitable.

Table 10. Area Manufacturing by Size of Plant and Type of Product - 1963

<u>Type of Mfg. Activity</u>	Number of Plants with Employment of -						
	<u>1- 19</u>	<u>20- 49</u>	<u>50- 99</u>	<u>100- 249</u>	<u>250- 499</u>	<u>500- 999</u>	<u>All Plants</u>
All Types	211	35	18	13	4	3	284
Processing of Ag. Products	56	14	3	3	0	1	77
Processing of Other Local Resources	27	5	1	0	0	0	33
Production of Non-feed Inputs for Ag.	13	2	2	3	0	1	21
Area Newspapers and Printing	42	4	1	1	0	0	48
Total attached Mfg.	138	25	7	7	0	2	179
Non-attached Mfg.	73	10	11	6	4	1	105

Source: Manufacturing Census

Non-attached plants owned and operated by outside interests have usually been established in order to use an underemployed supply of labor. Frequently, this is female labor from families where men are not fully employed or highly paid.

In most cases the non-attached type of plant will be established, or expansion occur, in a community that provides some long-term capital to the firm. The capital may be an outright gift or subsidy, but usually it is recoverable through some sort of rental or lease-purchase arrangement. In either case, an initial investment of local capital is required. The amount may be as little as \$500 or as much as \$5,000 per additional employee.

Earnings and Wages

In most Iowa areas with a large central city, the county which encloses the central city will have the highest average yearly earnings and hourly wage for production workers. This county will also be one of the highest in average yearly earnings of management, supervisory and related personnel.

Several characteristics are usually associated with the higher earnings levels of the central city. Usually, much of the labor force is organized. Some of the larger plants are of industries which have been among the national leaders in wage levels. Large segments of the labor force consist of stable long-term employees who are highly skilled and experienced. The high productivity of the workers has been supplemented by large capital investments which, from the manager's standpoint, reduce the labor cost per unit of output; while, also, from the worker's standpoint, making a higher wage possible.

All of these characteristics are present in Waterloo and its vicinity. Black Hawk has been the leading county in all earnings level aspects. The latest detailed statistics available are from the Manufacturing Census of 1963. Table 11 gives some of these statistics.

In all three measures of earnings and wage levels, the Waterloo area was noticeably above the state average. The Black Hawk county levels were even further above the comparable state average levels. Black Hawk County had the state high in average hourly wage for production workers. The state highs are all in heavily industrialized counties, which typically offer a large, stable, skilled labor supply to the industrialist.

The less industrialized parts of the state, including much of the Waterloo area, have provided a different type of opportunity. Since shortly after the end of World War II, the farms and towns of the area have produced an excess of labor which has created a steady out-migration pressure.

Many of the persons who would have to migrate out if no jobs were available will stay if a job with a moderate pay rate is available. The pay rate does not have to be as high as the rate in distant cities, because the person will trade off some pay differential for the opportunity to stay in his rural community. Some of these persons will eventually migrate, but they are easily replaced by others of the about-to-migrate group.

There is little reason for the plant management to raise wages substantially so long as the excess labor supply with desirable work habits continues to appear. The advantages of low labor cost outweigh the disadvantages of labor turnover for many of the plants that have located in rural areas. Many of these plants have competitors located in similar low-wage rural areas elsewhere in the nation. None of them can raise wages substantially until the low-cost labor supply has disappeared for all of them.

Table 11. Earnings of Manufacturing Employees, 1963

	Av. yearly earnings, management, supervisory, and related personnel	Av. yearly earnings, production workers	Av. hourly wage, production workers
Area Average	\$7,402	\$6,004	\$3.14
Iowa Average	7,008	5,415	2.68
Black Hawk County	7,511	6,172	3.25
Highest of Other Area Counties	6,516	5,171	2.52
Lowest of Area Counties	3,250	3,264	1.58
Highest of Iowa Counties	8,114	6,680	3.25
Lowest of Iowa Counties	3,000	2,738	1.41

Source: Manufacturing Census

Wholesale—Retail Trade

Wholesale and retail trade firms are heavily oriented toward domestic activity. A characteristic of domestic employment is its relative dispersion over the area which it serves. The main street businesses of all the numerous uniformly spaced small towns are operated primarily by domestic employees. A second and contradictory characteristic is the tendency for some parts of domestic activity to migrate to larger population centers. A result is the relatively faster growth of trade and services in larger cities. A third characteristic is the tendency of some farm input suppliers and farm produce buyers to avoid the congestion of large central cities.

Two sets of information on wholesale and retail trade are presented to illustrate the magnitude of the activity and the changes within the area. An analysis of retail "recurring type" sales by county for the years 1954 and 1963 is presented in Table 12. Table 13 presents employment in trade by county for the years 1960 and 1967.

The retail recurring type sales do not include lumber, building materials, farm equipment, and hardware sales. The sales that are left are primarily for household use, but some farm inputs purchased regularly (primarily petroleum and feed) are also included. The recurring type sales totals are believed to provide a measure of market potential with less year to year variability than a measure which includes sales of major investment items.

From Table 12 we can gain some feeling of market coverage and volume through the 1950's and early 1960's. In 1954 the area's recurring type sales were about \$233 million in 1963 prices. By 1963 the sales had increased to \$274 million for a 17 percent gain. This was a period of major percentage gain for Buchanan, Bremer and Tama counties; moderate gain for Black Hawk County; slight gain for Butler County and moderate loss for Chickasaw County.

The measure of recurring type retail sales per capita gives a general indication centralization of shopping patterns. This measure tends to be high when residents of a county do most of their shopping within its borders and in addition, one or more towns of the county serve a trade territory larger than the county. In the Waterloo area in 1963, Black Hawk County had the highest sales per capita indicating that its cities were serving as area shopping centers for many items.

A comparison between 1963 and a later year is not available in sales terms like those given in Table 12. It is necessary to switch to employment changes in wholesale and retail trade to bring the picture up to 1967. Table 13 presents this information by county for 1960 and 1967. The major gain in employment was made in Black Hawk County. Apparently Waterloo and Cedar Falls are gaining strength as area shopping centers. All of the other counties except Butler, had growth in trade employment, but none increased their share of the area total.

Table 12. Recurring Type Retail Sales

County	1954*	1963	Change	Percent Change	Per Capita 1963
Thousands of dollars					
Black Hawk	131,250	155,413	24,163	18.4	\$1,269
Bremer	18,093	23,544	5,451	30.1	1,115
Buchanan	15,713	20,928	5,215	33.2	939
Butler	17,482	18,551	1,069	6.1	1,062
Chickasaw	16,015	13,987	-2,028	-12.7	930
Grundy	14,705	15,763	1,058	7.2	1,115
Tama	19,822	25,378	5,556	28.0	1,185
Total Area	233,080	273,564	40,484	17.4	1,169
Area less Black Hawk	101,830	118,151	16,321	16.0	1,060
Iowa	2,964,168	3,245,793	281,625	9.5	1,177

Source: Census of Business

* 1954 sales adjusted to 1963 prices; inflator = 1.14

Table 13. Wholesale and Retail Employment

County	1960	1967	Change	Percent County is of area with respect to		
				1960 Employment	1960-67 Change	1967 Employment
Black Hawk	9,209	11,411	2,202	58	79	61
Bremer	1,511	1,694	183	10	7	9
Buchanan	1,008	1,182	174	6	6	6
Butler	902	882	-20	6	-1	5
Chickasaw	989	1,079	90	6	3	6
Grundy	987	1,112	125	6	5	6
Tama	1,201	1,238	37	8	1	7
Area	15,807	18,598	2,791			

Population Changes

The population of the Waterloo area has increased steadily since before 1880. Table 14 gives information on population for counties and the area for several points in time between 1880 and 1967. Black Hawk and Bremer counties have had continual population growth; rapid in Black Hawk and slow in Bremer. The other counties have all declined at different rates since 1960. In general, it can be said that none of the outlying counties of the area have had major population fluctuations since 1900.

Additional population analysis can be done by considering the metropolitan core separately from the rest of the area. In 1920 the total population of the territory represented by Waterloo, Cedar Falls, Evansdale, Elk Run Heights and Castle Hill was about 43,000. By 1967 these same cities and suburbs had a combined population of almost 108,000. The 65,000 population gain in this metropolitan complex represents 83 percent of the total population gain of the area between 1920 and 1967.

The 15 largest non-metropolitan towns of the area in 1920 had a combined population of 27,000. The smallest of these towns was just under 1,000 population, and the largest was less than 4,000. By 1967 these same 15 towns had a combined population of about 39,000. All of them had gained population during this period, and Waverly more than doubled. The growth in these towns represents almost all of the 17 percent of the area growth which did not occur in the central metropolitan territory. The non-metropolitan towns of the Waterloo area are, on the average, growing about as rapidly as similar towns in many other parts of the state.

Only a few of the smaller towns of the area have been declining in population. The availability of jobs within commuting distance has enabled most of the existing towns and hamlets to have a constant or slightly growing population. The increasing numbers of old people who are staying in the area have also helped to maintain the size of small towns over the years. A town that is just holding its own because of an increase in retired persons is, of course, declining in working age population.

The open-country population is declining in almost every rural township of the area as farming continues to decrease its requirement for labor. Both small towns and open-country areas have a smaller proportion of people under 15 years of age because of the sharp decline in births since about 1962. The reduction of birth rates has even dampened the population growth of the large metropolitan parts of the area to a level lower than it would otherwise have been.

Table 14. Population Change

County	1880	1900	1920	1940	1950	1960	1967
Black Hawk	23,913	32,399	56,570	79,946	100,448	122,482	134,633
Bremer	14,081	16,305	16,728	17,932	18,884	21,108	21,646
Buchanan	18,546	21,427	19,890	20,991	21,927	22,293	20,887
Butler	14,293	17,955	17,845	17,986	17,394	17,467	16,237
Chickasaw	14,534	17,037	15,431	15,227	15,228	15,034	14,430
Grundy	12,639	13,757	14,420	13,518	13,722	14,132	13,331
Tama	21,585	24,585	21,861	22,428	21,688	21,413	19,745
Area	119,591	143,465	162,745	188,028	209,291	233,929	240,909
State Total	1,624,615	2,231,853	2,404,021	2,538,268	2,621,073	2,757,537	2,875,994
Percent State Total	7.4	6.4	6.8	7.4	8.0	8.5	8.4

Meaning of Changes

A warning is called for concerning the use of the population level and increases or decreases in this level as a sole measure of progress or growth. A rural area may almost maintain its population because many young people choose to become under-employed farmers and small-town businessmen, rather than migrate to better opportunities elsewhere. The resulting community can become overly burdened with low-income people. A higher migration rate would have allowed a higher average income for the remaining population. Note that Chickasaw County lost population between 1960-1967 and simultaneously (see table 4) had the largest gain in average annual earnings of private wage and salary workers. It might be said that considering the alternatives available, Chickasaw had the most progress during the 1960-1967 period. This is progress measured in terms of increased income per person, a frequently used measure of national progress.

Unlimited population decline, however, is not generally acceptable for all parts of a multi-county area. One reason is that increased income per person cannot be easily translated into increased purchasing power per person. The amount and variety of goods and services available within easy driving distance (generally not more than 50 miles) will shrink if there are no growing population centers within that distance. Chickasaw County, and other rural communities, can accept or encourage population loss with resulting higher incomes and have an improved situation so long as shopping facilities and community institutions are growing at Waterloo or some other location within one hour's driving distance. The situation will not be nearly so improved if all nearby cities are also declining in population and in services and goods offered.

The number and type of public and semi-public institutions which can be supported in an area at acceptable levels of cost and performance are closely related to the size and characteristics of the population. The changing geographical distribution of the population with an increasing concentration in the larger towns and cities has already been described. This concentration encourages the development of new church, school, medical, legal and other service facilities in the cities and the shrinkage of these services in the smaller towns and rural areas. The relocation process is even further encouraged by the willingness of many rural people to travel a considerable distance to patronize the more specialized city-located services.

Age Mix - Young and Old

Another important characteristic of the population is the age mix at a point in time. School boards and administrators, for example, are not nearly so concerned with the total population as with the numbers of young people. On the other hand, persons concerned with hospital and convalescent care are especially involved with the numbers of old people. Churches are involved with both extremes of the age range, but the two groups make very different demands on church facilities and services.

Table 15 presents a picture for each county of changes by selected 5 year age groups since 1940 and including an estimate for 1970. Some very substantial shifts are revealed for most counties. All counties reached a peak in numbers of 0-4 age children in 1960 or in the preceding decade. These are the children who, upon entering school between 1960 and 1965, substantially outnumbered the high school graduating classes. By 1970, the expected 0-4 years of age population will be lower than it was in 1950 for every county except Black Hawk. Grade school population will be dropping sharply in rural counties in the early 1970's.

Children ages 5-9 will also be fewer in number in the rural counties in 1970 as compared to 1960. These children were born during the decline from Iowa's 1947-1962 "baby boom". Their numbers are of concern to people planning junior high school programs for the early 1970's.

The 10-14 age group will be larger than at any previous time in history for some counties and starting to decline in others. High schools in some districts may therefore be quite crowded during the early 1970's unless adequate building programs have been completed.

School planners and planning committees should, of course, take a detailed look at the present and potential age distribution of their particular territories. In rural districts the numbers are likely to be dropping even faster than indicated by the overall county numbers. A number of already small (in enrollment terms) school districts will become much smaller. The large city districts will continue to face extreme pressure from high school enrollment increases.

Table 15. The Young and the Old - Waterloo Area

County	Age Range					
	Young			Old		
	Age 0-4	Age 5-9	Age 10-14	Age 65-69	Age 70-74	Age 74 +
Year						
<u>Black Hawk</u>						
1940	6682	5803	6205	2294	1682	1848
1950	11840	8529	6881	3201	2201	2697
1960	15579	14303	11720	3796	2979	3891
1970	13221	17234	18631	4280	3253	5071
<u>Bremer</u>						
1940	1587	1371	1624	684	493	572
1950	1966	1655	1608	705	571	766
1960	2269	2141	1933	824	679	884
1970	1773	2170	2414	892	663	1054
<u>Buchanan</u>						
1940	1730	1577	1740	913	736	811
1950	2461	2083	1881	937	705	930
1960	2556	2500	2431	902	727	979
1970	1997	2285	2391	792	680	949
<u>Butler</u>						
1940	1542	1448	1670	626	492	558
1950	1915	1519	1478	637	591	668
1960	1819	1805	1752	768	583	874
1970	1218	1430	1642	791	616	1015
<u>Chickasaw</u>						
1940	1384	1259	1379	536	431	517
1950	1734	1493	1321	582	479	622
1960	1748	1647	1561	658	505	721
1970	1376	1628	1667	627	595	785

Table 15 - Cont'd.

<u>County</u>	<u>Age Range</u>					
	<u>Young</u>			<u>Old</u>		
<u>Year</u>	<u>Age</u> 0-4	<u>Age</u> 5-9	<u>Age</u> 10-14	<u>Age</u> 65-69	<u>Age</u> 70-74	<u>Age</u> 74 +
<u>Grundy</u>						
1940	1044	1004	1111	469	300	345
1950	1466	1232	1090	559	391	453
1960	1423	1440	1385	587	514	608
1970	1037	1203	1342	568	461	716
<u>Tama</u>						
1940	1857	1698	1988	805	595	680
1950	2235	1847	1881	933	692	913
1960	2219	2208	2091	990	831	1150
1970	1513	1747	1977	963	834	1308

Source: Population Census

"Employment Estimates and Population Shifts" Marvin Julius
unpublished manuscript, May, 1969.

Figure 2 shows the territories covered by high school districts of the Waterloo area in 1967. The districts are also shaded to indicate enrollment levels. There were no districts in the area with less than 300 pupils in kindergarten through 12th grade. Five districts had an enrollment between 300 and 500 pupils, nine between 500 and 700 pupils and 17 each had enrollment of more than 700 pupils.

The too-small school district can be questioned from the standpoints of cost of operation per student and adequacy of performance, particularly at the high school level. If the teaching staff is specialized enough to raise performance levels, the cost of operation per student becomes very high. If cost of operation is to be held down, the number of subjects taught per teacher must be increased and performance will usually decline.

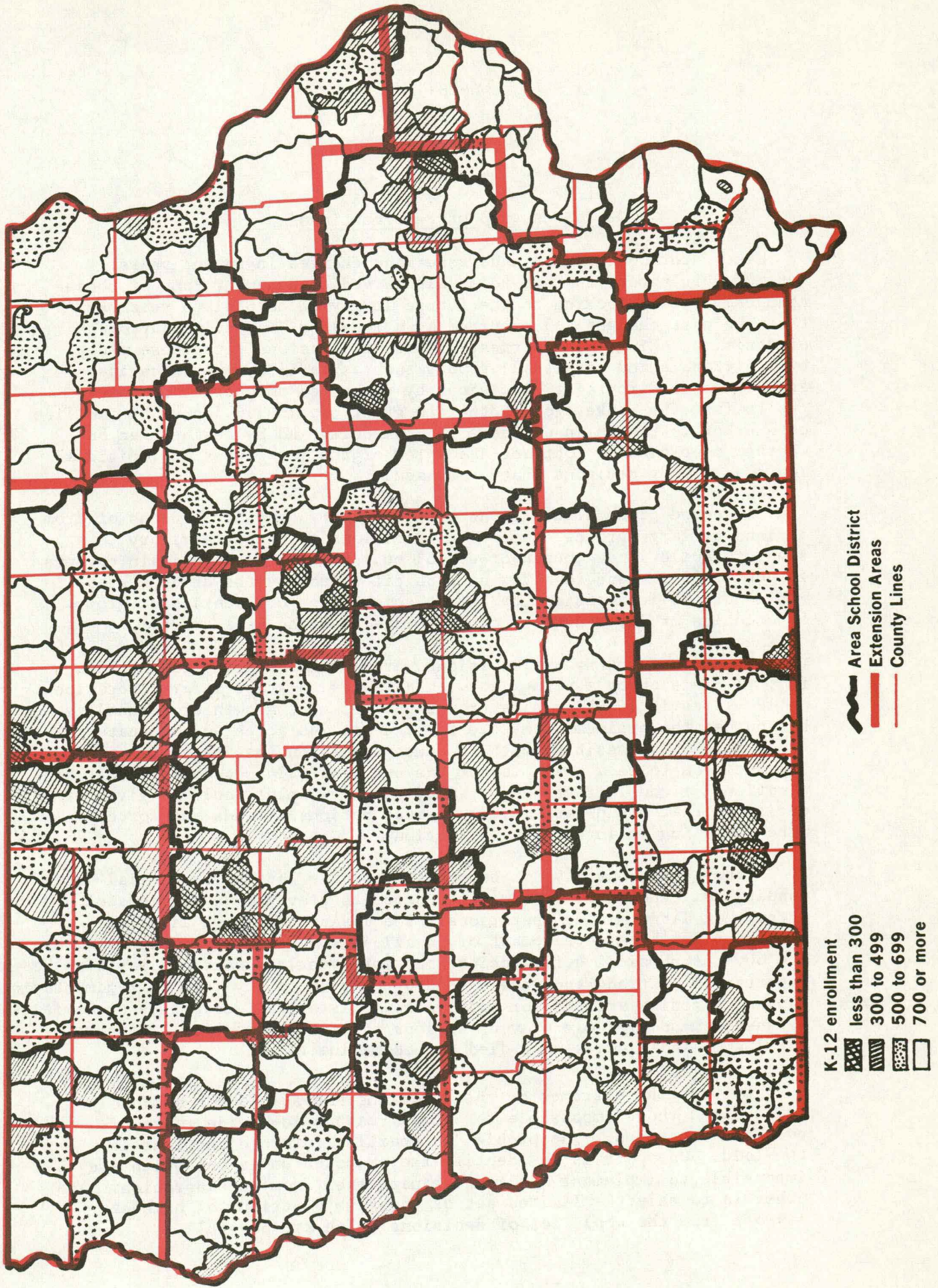
As people of the Waterloo area observe and study these patterns of cost and performance and the declining numbers of students in the future, they are likely to have to consider additional school consolidations. It is likely, also, that the school districts which had over 700 pupils in 1967 will be the focal points of most of the reconsolidations.

Table 15 also gives information on the numbers of older people who were in each county at census years and the estimated numbers for 1970. Two 5 year age groups are provided and an open-end group for 75 years of age and over. This latter group is one of the fastest growing of the entire population in all counties of the area. In 1970 almost every county is expected to have more people 75 years of age and over than at any time in history. For the ages between 65 and 75 years, the picture varies by counties, but generally there will be about as many people in these ages as there were in 1960, which was the high year up to that time for each county except Buchanan.

This build-up of the aging population indicates an increasing need for hospital, convalescent and nursing home facilities. Special recreational and housing programs for the aged may also need more attention.

Information and estimation of numbers by 5 year groups for the 15-64 age population is not presented. It is felt that the available 1970 estimates for this group of people may be unreliable because of unpredictable migration movements. In addition, no particular age group of the working age population creates any special demand on community institutions. Therefore, precise knowledge about changes in age distribution of this group is not as necessary as it is for the young and old population.

FIGURE 2. Iowa High School District Map



Decisions and Future Directions

The Waterloo area has undergone many changes in recent years. Most of this report to this point has served to document some of these changes. Before looking to the future it may be helpful to remember that the past changes all occurred as a result of a continual process of decision making. The largest number of decisions were those made by individuals and very small groups such as families, partnerships, and boards of directors. Decisions by young men on whether or not to try to farm, by bankers on whether to grant particular loans, by families on whether to remain in or leave the community and by businessmen on whether to expand or contract are a few of the many types of individual and small group decisions that were made.

A second group of decisions resulted from community actions or from actions by large groups of people. Decisions to annex territory to a town, to build a new church or school building, to elect certain persons to public office and to allow or prohibit liquor by the drink are examples of public decisions by entire communities or counties or groups of counties or large numbers of individuals acting as a group.

Attempts to carry out decisions were not necessarily all successful. A decision by a young man with a family to start a farm operation on 120 acres in 1950 may have proved unwise. The growth of technology had pushed the optimum farm size to at least 240 acres and adequate incomes were only possible, with few exceptions, on the larger farms. The decision to be a small farmer was not generally possible because of a national trend in technology. Many other examples could be given of decisions that would have failed because national trends and forces were operating in an opposing direction.

Other decisions may not have been possible because of special local conditions. The absence of mineral deposits prevents any successful attempt at large mining operations. The absence of large lakes and mountains inhibits development of an all-season recreational area. These are obvious physical deficiencies, but more subtle conditions may also be important. A strong and widely-held opposition to any form of regimentation may delay zoning actions for many years. Historical jealousies or enmities between communities may prevent serious cooperation efforts, at least until some individuals have died or become inactive.

Between the extremes of the decisions impossible for national reasons and those impossible for local reasons is a wide range of possible decisions. The problem in charting future directions is two-fold. One part is to identify the proposed decisions which are impossible to implement and to eliminate them from consideration. The other is to select a limited set of compatible actions of highest pay-off from the whole set of decisions which are possible.

Decision making can usually be kept within the bounds of possible success if sufficient information is available and is used. Much of the information presented in this report was selected because it could provide general background for many types of decisions. For any particular decision there may be specialized information available from other sources.

Goals for The Area

Table 16 presents a number of group goals which might be favored by either some community or area leaders or some sub-groups of community or area populations. In various ways, decisions will be made to try for, or to abandon, each of these goals. The right hand side of the table presents the first impression judgment of the author regarding the possibility situation during the early 1970's for each goal. Other observers, including knowledgeable people of the area, might change the list of goals and some of the possibility ratings. The table therefore should not be interpreted as a carefully researched guide to action. Its purpose rather is to illustrate the kinds of goals that people may suggest for acceptance or rejection and some thinking about these goals in terms of possibility of success.

Several pages could be written about each of the goals of Table 16, if the background of each were to be explored in detail. Such detailed discussion of specific projects must be left for follow-up educational efforts which may involve special meetings and special studies.

Functional Economic Area

The one topic of general concern that properly belongs in this study is the attitude of the area's communities to a functional economic area pattern. The Waterloo area of Iowa, which we have been describing, has thus far developed along the typical functional area pattern that is found in the Midwestern United States.

A typical functional economic area in rural Midwestern United States has a central city of a least 25,000 population. The functional economic area extends to about a fifty mile radius (by road distance) in all directions from the central city. The activities which require a very large population or labor base are located there. Among these are large department stores, factories with 500 or more employees, a junior college or community college, a regional hospital and clinic, wholesale warehouses, a multi-purpose airport, a daily newspaper and radio and television broadcasting. Because of the concentration of population and labor supply and community services already present, the central city can act as a growth center in attracting additional export activities to the area.

As the central city grows, the satellite cities and towns also tend to grow. This is partly because it is relatively easy to drive to big-city services from any place in the area. Also, many employers--particularly small firms--will choose small city and town locations if a central city is nearby.

Table 16. Illustrative Set of Goals for Consideration

Goals	Difficult for national reasons	Within poss- ibility range	Difficult for local reasons
Merger of cities and suburbs			*
Recruitment of only high wage industries	*		
Stop the agriculture employment decline	*		
Have no school district below 3,500 enrollment			*
Have no school district below 1,000 enrollment		*	
Make tourism as large as agr. and mfg. export	*		
Use recreational facilities as an industry inducement		*	
Consolidate all churches in each town			*
Keep all young people in the area	*		
Put a doctor in each town	*		
Establish centralized multi-town medical facilities		*	
Establish regional planning activities with public funding		*	
Reorganize churches to have none below 350 members		*	
Consolidate all counties into an area govt.			*
Stop all shopping center development	*		
Establish more multi-govt. joint programs		*	
Form a heavily funded area industry promotion group			*
Start interlocking memberships among local industry promotion groups		*	
Make representation on area committees proportional to population			*

A central metropolitan complex as large as Waterloo and Cedar Falls in combination tends to dominate its area in financial and business matters and, to some extent, in political matters. Resentment of this concentration of power tends to emerge in satellite cities and towns. Many area residents may favor scattering some of the activities so that all of the major transportation, education, health and other regional services do not tend to concentrate at one or two locations.

Some residents of the rapidly growing centers may, at certain times, support this view, because they are disturbed by the continuing need to expand the facilities of their city. There are areas (the Northwest Iowa-Southwest Minnesota territory is one) where a scattering of activities has occurred among a number of cities of less than 10,000 population.

It should be recognized, however, that areas without central cities of 25,000 or more population are not growing substantially in population and employment. The small central city will usually be growing at a good rate in relation to its previous size, but this growth is far short of the amount needed to counter the agricultural employment decline of the whole area. Many towns in such an area will, therefore, be declining in working age population.

The larger central city can support the high-capacity, multi-purpose airport needed for access to many of the markets of the future. It can attract the prospective employer who wants the major regional services all available for his employees at one place. It is not likely that any outside employer will favor a situation where the community college, the vocational school, the major hospital facility, the largest airport and the regional government service center are all located in different cities.

In many ways, therefore, the entire area has an interest in the continued growth of Waterloo and Cedar Falls. Consideration will likely be given in the future to proposals for area-wide financial support of some facilities and activities such as is now possible with the area school system.

Some kind of study may also be needed concerning the degree to which the outlying parts of the area can tap the growth of the central city. More small plants might be encouraged to move to the outlying towns. In some cases an improved line of credit may be needed, along with management help, for undercapitalized firms already located in the towns.

To some extent, the people of the Waterloo Area can change direction in regard to central city size versus more development of the outlying towns. The decision is not likely to be made by any one committee or group working with this problem alone. Rather, the final result will emerge from the accumulation of many location decisions by business firms, financial institutions, area school boards, a regional airport authority, regional planning commissions, area health committees, a council of governments, municipal and county governments and other institutions and individuals.

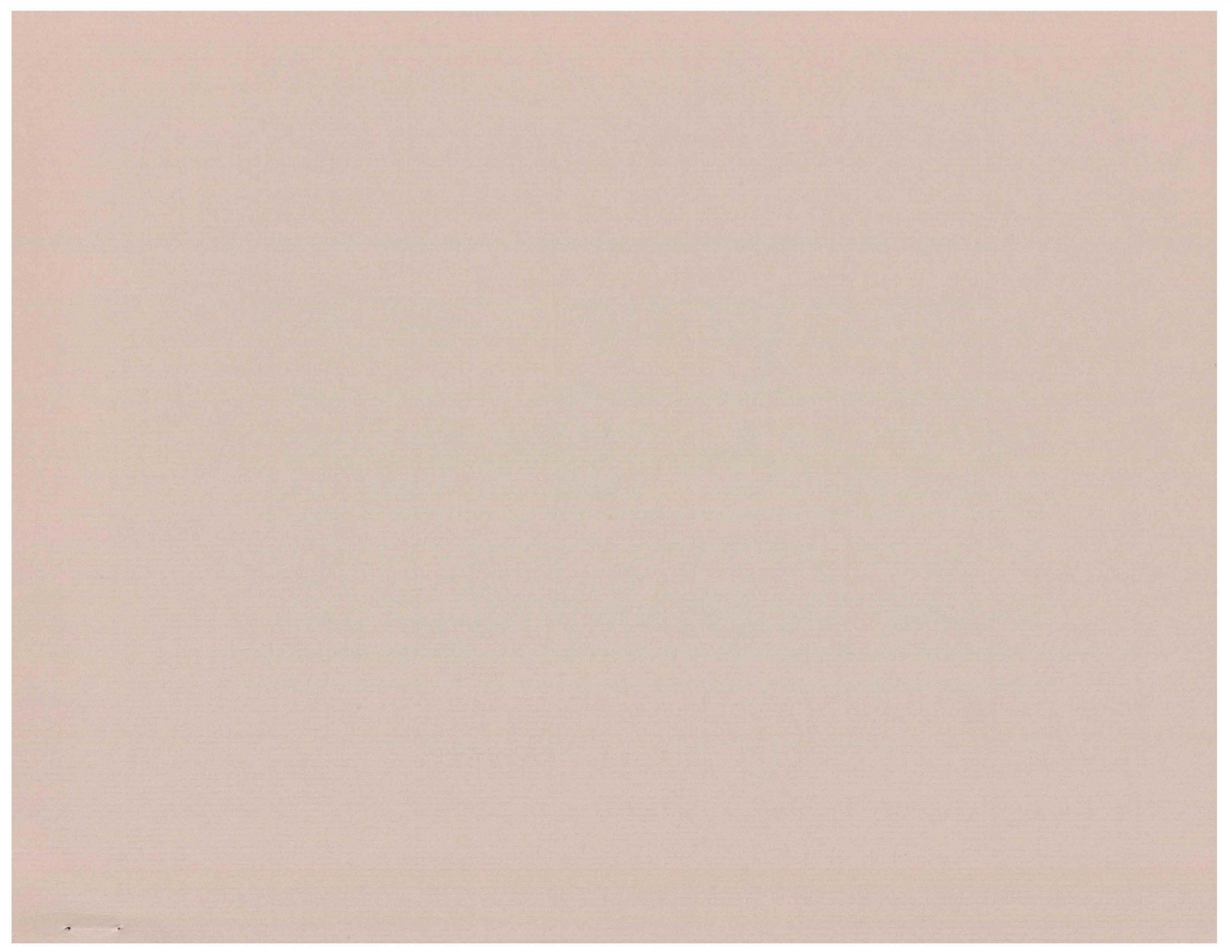
Each group of people responsible for making a location decision should remember that this decision also has an effect on the overall settlement pattern of the future. In many cases, the choice between any two or more places for a specific activity might be influenced by the relative effect of each location upon the overall settlement pattern.

Some Final Thoughts

This report may not have a uniformly optimistic tone. It tends toward a "realistic" look at the area, and it deals with both problems and success stories. This is in keeping with its purpose as a background document for leaders who are considering changes that they hope will better the area.

Likewise, the report is not meant to be a promotional piece for the area. On the other hand, there is no intent to downgrade promotional activities. Effective community leaders need to believe that their community and area are among the best of all communities and areas in which to live and work. If they have had failures, they will feel it was because they picked impossible projects or made mistakes in the education or action processes. They will not believe that there are basic faults in the community or area that prevent possible changes that most of the people are willing to support.

Constructive attitudes toward change and a good understanding of the facts of past and present situations are both essential for area progress. This report provides some of the necessary facts and interpretations. People of the area have provided and will provide the constructive and optimistic leadership.



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