

Associated Material in DR 72-9

WICHITA-SEDGWICK COUNTY
METROPOLITAN AREA PLANNING COMMISSION

MAY 9, 1974

11:45 A.M.

KING'S COURT - REGAL INN

INFORMAL LUNCHEON AGENDA

1. Discussion as to City travel reporting policies to be followed Re: ASPO Trip.

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2. Presentation of Dominant Industries Study. The recently completed Dominant Industries Study will be presented by Dr. Norman Weed. (Memo enclosed.)

Robert A. Lakin
Secretary

WICHITA-SEDGWICK COUNTY

DATE

METROPOLITAN AREA PLANNING DEPARTMENT

May 2, 1974

TO : The Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM : Willard L. Stockwell, Chief Planner, Advance Plans Division ^{WCS}
SUBJECT : Completion of the Dominant Industries Study

The Dominant Industries Study has recently been completed by Dr. Norman Weed through the Center for Business and Economic Research at Wichita State University. We wish to report to you the findings of the study at your next MAPC luncheon. Attached is a copy of the introduction to the study which explains the research methodology and the findings of the study. There is an additional 80 pages of tables, charts, computer program information, and survey results which is included in the printed report. While Dr. Weed will present his findings in detail at the MAPC luncheon, the highlights of the study are presented below.

As you know the Dominant Industries Study was initiated to develop a short-run model for forecasting and planning purposes. This was done by investigating the impact of aerospace activity from June 1969 through June 1972 on population, income, primary and secondary employment, and the induced affects on retail sales. The results of this study are extremely interesting and in some cases contrary to initial expectations.

The study found that Sedgwick County experienced net out migration equal to 7,874 in 1969, 23,737 in 1970 and 590 in 1971. While it would be expected that these people were essentially "pushed" from the area because of the lack of employment opportunity, the study found that this was not necessarily the case. Very few migrants other than aerospace workers were found to have been "pushed" from the area. A large number of these migrants were transferred or were new entrants into the labor force such as newly graduated students.

Since aerospace is a high wage industry and the reduction of income through the loss of paychecks should produce a strong multiplier affect, we expected a decline in area income. On the contrary, personal income continued to increase in the area although at half the rate of the nation as a whole. Dr. Weed concluded that this increase was a result of unemployment compensation, the tendency toward multiple job holding, and the ability of the non-migrant to pick up a temporary job.

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Completion of the Dominant Industries Study

Following the pattern of aggregate personal income, the absolute volume of retail sales did not decline although the rate of increase dropped - especially during 1970. This rate of increase was below that of the state but not the nation as a whole. Since personal income did not decrease this was not a surprise. In addition, survey results indicated that people unemployed drew on savings to maintain purchasing habits. This access to savings was greater for aerospace employees since they are normally considered high paid workers.

The final element of the local economy investigated, secondary and temporary employment, also exhibited interesting results. While the total number of unemployed increased throughout the study period, there were months when the actual number of unemployed actually decreased. Dr. Weed concluded that lines of manufacturing not related to aerospace were able to retain strength in the economy during the recessionary period. Other factors were the level of retail trade, the ability of spouses to obtain work, availability of temporary employment, and government programs such as the Emergency Employment Act.

The product of this study was a model for projecting short-run population change based on such economic indicators as retail sales, U.S. average weekly manufacturing earnings, Wichita average weekly earnings in aircraft and parts manufacturing, employment in Wichita aircraft and parts manufacturing, and local monthly employment turn-over rates. This model can be easily updated with current data to estimate short-run population change. The model will be used by MAPD to forecast the short-run impacts resulting from declines in aerospace activity on population, employment, income and retail sales for the area.

An additional function of the Dominant Industries Study was to suggest possible refinements in the aircraft and parts section of the Sedgwick County Input-Output Matrix completed in 1972. The Dominant Industries Study indicated no major refinements were needed to the matrix. Thus the matrix is in good shape and ready for use. Future use of the input-output matrix includes impact analysis, projections of industrial output, employment and population, multiplier analysis, and use as a descriptive tool of the local economic structure. Both the Dominant Industries Study and the Sedgwick County Input-Output Matrix will be distributed for use by such agencies as Industrial Development, WREAC, the Chamber of Commerce, and other interested agencies and individuals.

WLS:RLM:vn
Enclosures

DOMINANT INDUSTRIES STUDY

Prepared for the
Wichita-Sedgwick County Metropolitan
Area Planning Department

Center for Business and Economic Research
Wichita State University

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a Comprehensive Planning Grant from the Department of Housing and
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November, 1973

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INTRODUCTION

The National Bureau of Economic Research has designated the period of November, 1969, to November, 1970, as a period characterized by a downturn in the business cycle or period of recession. The impact that a national recession may have on a specific city will vary depending upon the nature of the recession and the industrial characteristics of the local area. In this particular case, the impact of the recession would appear to have been much harsher in the Wichita area than in the nation as a whole. From late 1969 to mid-1971, the Wichita area suffered an increase in unemployment from 4.0 percent of the civilian labor force to a peak of 11.6 percent. During this same period, the rate of unemployment for the nation as a whole rose from 3.2 percent to a peak of 6.5 percent. One of the reasons that the Wichita area experienced a comparatively greater impact during the period was because the decline in business activity nationally struck hardest in the industrial sector where Wichita is most vulnerable: the aerospace industry.

The aerospace industry has long been recognized as the dominant industry in the Wichita area. The data given in TABLE 1 indicate the relative importance of employment in aircraft and parts production in the Wichita Standard Metropolitan Statistical area (S.M.S.A.).

TABLE 1

EMPLOYMENT IN AIRCRAFT AND PARTS
AS A PERCENT OF TOTAL EMPLOYMENT
AND MANUFACTURING EMPLOYMENT,
1960 - 1973

Year	Percent of Total Employment	Percent of Manufacturing Employment
1960	21	68
1961	20	66
1962	20	66
1963	19	63
1964	20	66
1965	19	64
1966	22	68
1967	23	69
1968	21	67
1969	18	62
1970	13	53
1971	10	45
1972	12	48
Nov., 1973	15	53

Source: Computations base on annual average employment data as reported
by the Wichita Office of the Kansas Employment Security Division.

Within the period 1960 - 1973, employment in aircraft and parts had its greatest relative position in 1967 when it accounted for 23 percent of total employment and 69 percent of manufacturing employment in the area. The relative position of aerospace activities declined from 1967 to the low in 1971. However, the percentages increase from 1971 through 1973 indicating a movement back to the position in the local employment mix held by the aerospace industry prior to the 1969 recession.

The movement of the proportion of area employment accounted for by aircraft and parts production coincides with the periods of decline and expansion of employment experienced in the industry. The absolute level of employment for the June period of the years 1969 through 1972 is illustrated in TABLE 2. During the June, 1969 to June, 1971, period the

TABLE 2

TOTAL EMPLOYMENT AND EMPLOYMENT
IN AIRCRAFT AND PARTS FOR THE
MONTH OF JUNE, 1969 - 1972

June Employment Levels		
<u>Year</u>	<u>Aircraft & Parts</u>	<u>Total</u>
1969	30,650	164,850
1970	20,400	153,500
1971	14,400	145,550
1972	19,300	156,900

Source: Appendix A

number of active job holders in aircraft production declined by 16,150. The total number of persons employed declined by 19,300 during the same period. The decline in employed persons in aerospace was 84 percent of

the total. During the expansion from June, 1971, to June, 1972, aircraft employment increased by 4,900 and total employment by 11,350. The increase in aerospace employment was only 43 percent of the increase in total employment.

The total civilian labor force in the Wichita Area decreased from June, 1969, to June, 1971, by 5,950 persons or approximately 3 percent of the 1969 figure (see Appendix A). The increase in the 1971 to 1972 period was approximately 1 percent. Thus, the net change in number of persons comprising the civilian work force was relatively small in the recessionary period.

The employment data clearly indicate the predominant role of the aircraft industry during the economic decline of 1969-1971. Given the rapidity and severity of the employment decline, the Wichita Area economy should have been in such a depressed state that quick recovery would not have been anticipated. Yet the resiliency shown by the economy in the post-1971 period would indicate that some elements of the community did not follow the pattern set by aerospace employment. Certain sectors of the economy must have provided an underlying stability that allowed the area to weather the shock of high unemployment without tremendously adverse aggregate effects.

This study was undertaken to investigate the impact of changes in employment levels in the aerospace industry on such aggregate measures as population, income, and sales of goods and services in the Wichita Area. The study essentially covers three types of problems: What was the effect of the unemployment in the aerospace industry on the population of Wichita and can the experience provide a predictive mechanism for similar future

experiences? What was the impact on aggregate income flows of the high rate of unemployment? How did the rate of commercial activity respond to the recessionary pressures in the Wichita economy?

Methodology

The time period chosen for the study was the period from June, 1969, to June, 1972. This period includes both the peak to trough designation of the national business cycle (November, 1969, to November, 1970) and the major decline in aircraft production employment with the beginning of the subsequent increase in employment.

Series of economics data for the period were gathered from secondary sources or obtained from the primary data gathering agencies. Where practicable, the data series were adjusted for seasonality and, in the case of retail sales, were further adjusted for price increases.

Data relating to individual circumstances were obtained by survey techniques. Two structured surveys were conducted for the study. The first survey was a sample of the persons who had migrated from Sedgwick County during the study period. The limits of the county were utilized rather than the city to avoid counting as migrants those people who may have moved from the city for non-economic reasons, i.e., school problems, etc., but essentially retained their economic ties with the city. The sample was drawn from a listing of names and addresses obtained from change of address information.

The second survey was a random sample of persons within Sedgwick County. Data similar to that obtained from migrants was thus drawn from

nonmigrants. Weighted samples were taken on the basis of zip code areas in the county. In both cases, the general survey results were sub-categorized into aerospace related groups.

Population Change

Population change in an open region may stem from four possible sources: births, deaths, in-migration, and out-migration. Births and deaths are recorded monthly for the area but in-migration and out-migration are extremely difficult to measure on a short-term basis. However, the concept of net population change will give an indication of which of the two flows are dominant in the region. Since birth rates and mortality rates are relatively stable over short periods of time, a negative net population change would indicate that out-migration was greater than in-migration and the converse would be true for positive net change.

The estimated annual net population change for the period was derived as follows:

$$\text{Net change} = P_{t+1} - (P_t + B - D)$$

where

P_t = population at the beginning of time period t

P_{t+1} = population in time period $t + 1$

B = absolute number of births during the period

D = absolute number of deaths during the period

The results are given in Appendix B.

The annual estimates were distributed over the monthly periods by the application of a proxy series. In this case, the proxy series utilized consisted of average residential utility connects and disconnects adjusted

by the pattern of migration indicated in the survey results. Economic time series were then regressed against the monthly net-migration estimates in a step-wise regression model to select the variables that would provide the best fit in the second model.

The variables selected in the first stage were then utilized in a multiple regression technique of the form:

$$Y = A + B_1X_1 + B_2X_2 + \dots + B_nX_n$$

The series utilized in the equation represented economic conditions outside of Sedgwick County and inside the County. Since the original purpose of the study was to deal with impact of aerospace employment declines, three of the variables were directly related to that industry.

The estimating equation was:

$$Y = -8867.8 + .001 X_1 + 68.675 X_2 - 7.477 X_3 + .017 X_4 - 244.344 X_5$$

where

X_1 = Retail Sales (Series 003)

X_2 = Average Weekly Earnings by Production Workers in Manufacturing - U.S. (Series 037)

X_3 = Average Weekly Hours in Aircraft and Parts Production - Wichita (Series 039)

X_4 = Employment in Aircraft and Parts - Wichita (Series 062)

X_5 = Monthly Labor Turnover Rates, Layoffs - Wichita (Series 074)

The regression was significant at the .01 level. The regression statistics are presented in TABLE 3 and TABLE 4.

TABLE 3
REGRESSION STATISTICS

Variable	Intercept or Regression Coefficient	Standard Error of Regression Coefficient	Partial Correlation Coefficient
Intercept	- 8867.8		
X ₁	.001	.0117	.0164
X ₂	68.675*	31.7130	.3625
X ₃	- 7.477	49.9267	-.0268
X ₄	.017	.0298	.1006
X ₅	- 244.344*	92.8731	.4272

$$R^2 = .55$$

*Significant at .05 level.

TABLE 4
CORRELATION COEFFICIENTS MATRIX

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
X ₁	1.00					
X ₂	.26	1.00				
X ₃	.24	.24	1.00			
X ₄	-.20	-.69	-.36	1.00		
X ₅	-.25	-.59	-.00	.21	1.00	
X ₆	.21	.64	.06	-.30	-.67	1.00

Overall migration is influenced by conditions in both the local area and the potential destination, the characteristics (age, level of education, race, etc.) of the individual, and the distance of the journey. The spatial mobility of individuals, that is, their readiness to move in

response to some set of incentives, may be increased by a single factor or set of factors. The assumption underlying the model set out above was that migrants were essentially "pushed" from the area by the lack of employment opportunity brought about by the reduction of employment levels in aircraft and parts and an ensuing recessionary state in the local economy. The Coefficient of Determination (R^2) of .55 would indicate that factors other than employment drops in aircraft and parts were also at play in the migratory pattern.

Of the migrants surveyed, 31.4 percent were affiliated with the aerospace industry. Within that group, 65 percent indicated that they had experienced a lay-off status. The predominant indications were that they moved from Sedgwick County because they could not find a job at comparable income and skill levels.

Among all migrants, 26 percent indicated that they had been in a lay-off status. Thus, very few migrants other than aerospace workers had been "pushed" from the area because of lay-off status. More than likely, they were transferred or were new entrants into the labor market and seeking employment in places more appealing than their home location. The latter groups, in particular, contained newly graduated students from local institutions of higher education most of whom would normally fall into the out-migrant category. The addition of variables covering the number of persons entering the age cohort 18-24 years and the number of persons graduating from local colleges and universities would undoubtedly increase the coefficient of determination of the predictive equation.

Income

Income in the area continued to increase during the study period.

While the rate of increase of personal income was small, approximately half the rate of the nation as a whole, the change was positive. The greatest impact of reduction in aerospace employment should be felt through the income stream. As an industry, aircraft and parts is not highly interrelated to other industries in the community. Hence, the employment multiplier would be relatively small. The industry is a relatively high wage one, however, and the reduction of income through loss of paychecks should produce a fairly strong multiplier effect. As incomes decline, families normally reduce purchases of goods and services which causes a further reduction in employment and income.

Of the persons surveyed within Sedgwick County, 31.7 percent were affiliated with the aerospace industry. Within that group, 38.6 percent indicated they had experienced a lay-off status - again accounting for all but 2 percent of total lay-offs. The mean family income of all persons who lost their jobs declined by 32 percent - far less than one would expect if estimates were based on straight multiplier analysis.

There were several factors that tended to truncate the income multiplier effect. One factor was the infusion of transfer payments, e.g., unemployment compensation, into the economy. A second factor was the tendency toward multiple job holders in the family. A third element which will also be discussed later, was the ability of non-migrant unemployment to pick up a temporary job thus keeping the term of total unemployment shorter than normally would be the case. Some individuals also indicated the ability to pick up a second job in cases where cuts in pay had been sustained as opposed to total lay-off.

In terms of the aggregate income of the area, additional factors were

also at play. Persons who were not unemployed seemed to be able to not only maintain but actually enhance their income position. Average weekly earnings over the period did not decline and, in fact, continued to increase. Thus, the purchasing power of individuals did not experience the absolute decline that would have been anticipated.

Retail Sales

Retail Sales volume followed a pattern similar to aggregate personal income. The absolute volume of sales did not decline during the period but the rate of increase dropped - particularly during the year 1970. Some decline in the rate of growth of sales would have been anticipated because of national economic conditions. The question then is how much greater was the drop in the growth rate in Sedgwick County than in the nation as a whole?

The monthly rate of change of retail sales volume for the United States, the state of Kansas, and Sedgwick County were regressed against time in a second degree polynomial regression equation of the form:

$$Y = A + BX + CX^2$$

where the X values all time periods. The resulting equations were as follows

U.S. $Y = -.03 + .05X + .002X^2$

Kansas $Y = -2.91 + .68X - .02X^2$

Sedgwick $Y = -1.16 + .43X - .02X^2$

The coefficients of the regression equation indicate that the Sedgwick County rate of growth of sales was below that of the state but not the

county as a whole.

Given the income patterns that prevailed during the period, it is not out of line to find that the level of retail sales did not decline absolutely. In addition to income maintenance, respondents in the survey indicated that support was also achieved by drawing down savings during the period of their unemployment. The volume of savings in a local area is nearly impossible to measure. However, certain inferences can be made concerning the availability of savings. Since aerospace employees are considered among the higher paid workers in the community, the access to savings should be greater than average. For short-term unemployment periods, the savings plus the availability of transfer payments would tend to maintain purchasing power.

Secondary and Temporary Employment

During the period of the study, the total number of unemployed increased commensurately with lay-offs in the aerospace industry. However, there were months in which the number of unemployed actually decreased. These periods occurred throughout the peak to trough decline. The relationships between the absolute change in employment in aircraft and parts and the absolute change in the number of unemployed is shown in TABLE 5. If the first column has a negative sign, the second column should exhibit a positive sign. The existence of declines in unemployment, given the small changes in the labor force, would indicate sectors in the economy with sufficient strength to absorb unemployed persons.

The sectors that were able to increase their employment are illustrated in TABLE 6. Sectors that are particularly interesting are Fabricated Metal Products, Retail Trade, and Government.

Fabricated Metal Products is contained under the manufacturing category. The indication is that lines of manufacturing not related to aerospace were able to retain strength in the economy during the recession. The employment pattern in Retail Trade is consistent with the results of the analysis concerning the volume of trade. Likewise, the continued employment in such pursuits accounts for the ability of spouses, particularly females, to obtain work and for others to obtain temporary employment. The Government sector reflects the institution of job slots under various types of programs - particularly the Emergency Employment Act. These job slots were considered temporary but in some cases led to permanent positions. In either case, the programs contributed to income maintenance in the community.

TABLE 5
 ABSOLUTE CHANGE IN EMPLOYMENT IN AIRCRAFT AND PARTS
 AND ABSOLUTE CHANGE IN NUMBER OF UNEEMPLOYED
 WICHITA S.M.S.A., JUNE 1969-1972
 (non-seasonally adjusted)

	<u>Absolute Change in Aircraft and Parts</u>	<u>Absolute Change in Number of Unemployed</u>
<u>1969</u>		
June		-600
July	-250	
August	-5,050 ^a	350
September	5,250 ^a	-800
October	-900	-1,300
November	-150	800
December	-550	100
<u>1970</u>		
January	-1,150	350
February	-2,450	2,750
March	-1,550	1,000
April	-1,300	1,100
May	-1,350	2,450
June	-800	3,550
July	-700	-1,650
August	-400	350
September	-900	-1,550
October	-650	-100
November	-400	1,550
December	-700	-1,650
<u>1971</u>		
January	-700	1,550
February	-650	350
March	-500	250
April	-750	-1,050
May	100	300
June	250	3,300
July	250	-2,600
August	500	-2,100
September	300	-1,950
October	150	-1,550
November	550	450
December	700	-1,600
<u>1972</u>		
January	650	-200
February	400	-450
March	250	-900
April	400	-750
May	350	650
June	400	2,850

^aRecorded data does not follow trend.

Source: Wichita Office of the Kansas Employment Security Division.

TABLE 6

CHANGES IN EMPLOYMENT BY CATEGORY AND INDUSTRY
IN RELATION TO CHANGES IN EMPLOYMENT IN AIRCRAFT AND PARTS
FOR SELECTED MONTHS

July 1969

Absolute Changes in:

Aircraft and Parts	-250
Number of Unemployed	-600
Civilian Labor Force	-1,250
Number of Employed	-650

Category and Industry Changes in Employment:

Agricultural	350
Mining	50
Contract Construction	200
Transportation and Public Utilities	50
Total Increase	650

October 1969

Absolute Changes in:

Aircraft and Parts	-900
Number of Unemployed	-1,300
Civilian Labor Force	-2,300
Number of Employed	-1,000

Category and Industry Changes in Employment:

Printing, Publishing and Allied Industries	50
Mining	50
Retail Trade	300
Government	550
Total Increase	1,050

July 1970

Absolute Changes in:

Aircraft and Parts	-700
Number of Unemployed	-1,650
Civilian Labor Force	-5,100
Number of Employed	-3,450

Category and Industry Changes in Employment:

Fabricated Metal Products	50
All Other Nondurable Goods	50
Total Increase	100

September 1970

Absolute Changes in:

Aircraft and Parts	-900
Number of Unemployed	-1,550
Civilian Labor Force	-2,450
Number of Employed	-900

Category and Industry Changes in Employment:

Fabricated Metals	50
Transportation, Communication, Electrical, Gas and Sanitation Service	50
Retail Trade	50
Government	<u>1,700</u>
Total Increase	1,850

October 1970

Absolute Changes in:

Aircraft and Parts	-650
Number of Unemployed	-100
Civilian Labor Force	-600
Number of Employed	-500

Category and Industry Changes in Employment:

Agricultural	300
Fabricated Metal Products	100
Meat Products	50
Printing, Publishing and Allied Industries	50
All Other Nondurable Goods	50
Services	50
Government	<u>650</u>
Total Increase	1,250

December 1970

Absolute Changes in:

Aircraft and Parts	-700
Number of Unemployed	-1,650
Civilian Labor Force	-3,150
Number of Employed	-1,500

Category and Industry Changes in Employment:

All Other Durable Goods	50
Printing, Publishing and Allied Industries	50
Retail Trade	650
Government	<u>150</u>
Total Increase	900

April 1971

Absolute Changes in:

Aircraft and Parts	-750
Number of Unemployed	-1,050
Civilian Labor Force	-550
Number of Employed	500

Category and Industry Changes in Employment:

Agricultural	50
Fabricated Metals	100
Machinery (including electrical)	50
All Other Durable Goods	300
Food and Kindred Products	50
Chemical and Allied Products	50
Mining	100
Contract Construction	400
Transportation, Communication, Electrical, Gas and Sanitation Service	100
Retail Trade	250
Finance, Insurance and Real Estate	100
Services	300
Total Increase	1,850

May 1971

Absolute Changes in:

Aircraft and Parts	100
Number of Unemployed	300
Civilian Labor Force	2,300
Number of Employed	2,000

Category and Industry Changes in Employment:

No Decrease Recorded

June 1971

Absolute Changes in:

Aircraft and Parts	250
Number of Unemployed	3,300
Civilian Labor Force	5,350
Number of Employed	1,100

Category and Industry Changes in Employment:

Fabricated Metals	-1,300
Printing, Publishing and Allied Industries	-50
Retail Trade	-100
Government	-300
Total Decrease	-1,750

November 1971

Absolute Changes in:

Aircraft and Parts	550
Number of Unemployed	450
Civilian Labor Force	850
Number of Employed	400

Category and Industry Changes in Employment:

Agricultural	-250
Fabricated Metal Products	-50
All Other Durable Goods	-50
Printing, Publishing and Allied Industries	-100
Contract Construction	-300
Finance, Insurance and Real Estate	-100
Services	-100
Government	-200
Total Decrease	<u>1,150</u>

May 1972

Absolute Changes in:

Aircraft and Parts	350
Number of Unemployed	650
Civilian Labor Force	3,150
Number of Employed	2,500

Category and Industry Changes in Employment:

Machinery (including electrical)	-100
Grain Mill Products	-50
Transportation, Communication, Electrical, Gas and Sanitation Services	-50
Total Decrease	<u>-200</u>

June 1972

Absolute Changes in:

Aircraft and Parts	400
Number of Unemployed	2,850
Civilian Labor Force	5,500
Number of Employed	2,650

Category and Industry Changes in Employment:

Chemical and Allied Products	-50
Mining	-50
Total Decrease	<u>-100</u>

DEFINITIONS

Civilian Labor Force^d- The civilian labor force comprises the total of all civilians classified as employed and unemployed.

Employment^d- Employed persons comprise (1) all those who, during the survey week, did any work at all as paid employees, or in their own business, profession or farm, or who worked at least 15 hours as unpaid workers in a family operated enterprise and (2) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor-management dispute, or various personal reasons. Each employed person is counted only once. Those who held more than one job are counted in the job at which they worked the greatest number of hours during the survey week. Excluded from the employed group are persons whose only activity consisted of work around their own home, such as housework, painting, repairing, etc., or volunteer work for religious, charitable and similar organizations.

Unemployment^d- Unemployed persons include those who did not work at all during the survey week, were looking for work and were available for work in the reference period. Those who had made efforts to find work within the preceding 4-week period, such as by registering at a public or private employment agency, writing letters of application, canvassing for work, etc., and who, during the survey week, were awaiting the results of these efforts, are considered to be looking for work. Also included as unemployed are those who did not work at all during the survey week and (a) were waiting to report to a new wage or salary job scheduled to start within the following 30 days and were not in school during the survey week or (b) would have been looking for work except that they were temporarily ill.

Unemployment Rate^a- The number of unemployed persons expressed as a percentage of the total civilian labor force.

Production Workers^c- This group, in general, covers those employees, up through the level of working foreman, who are engaged directly in the manufacture of the product of the establishment.

Aircraft and Parts^c- This industry includes establishments primarily engaged in manufacturing aircraft, aircraft engines and engine parts, auxiliary equipment or assemblage of complete aircraft. This sector also includes establishments primarily engaged in research and development of aircraft and aircraft engines or in factory type aircraft modification on a contract or fee basis.

Accessions^d- Accessions are all permanent and temporary additions to the employment roll, whether of new or rehired employees. Transfers from another establishment of the same company are counted as accessions. The Accession Rate and its two major component parts, New Hires and Other Accessions, are expressed as a rate per 100 employees.

New Hires- New hires are permanent and temporary additions to the employment roll of persons who have never before been employed by the establishment and former employees rehired although not specifically recalled by the employer. This category excludes transfers from

Definitions, continued

other establishments of the same company and employees returning from military service or unpaid leaves of absence.

Other Accessions- This subgroup includes all additions to the employment roll other than new hires.

Separations^d- Separations are terminations of employment of persons who have quit or have been taken off the rolls for reasons such as layoffs, discharge, retirement, death, military service expected to last more than 30 consecutive calendar days, physical disability, etc. Since January 1959, transfer of employees to other establishments of the same company also have been classified as separations. The Separation Rate and its three major component parts, Quits, Layoffs and Other Separations, are expressed as a rate per 100 employees.

Quits- Quits are terminations of employment initiated by employees for any reason except retirement, transfer to another establishment of the same firm, or service in the armed forces. Included as quits are persons who failed to report after being hired, if previously counted as accessions, and unauthorized absences which, on the last of the month, have lasted more than 7 consecutive calendar days.

Layoffs- Layoffs are suspensions from pay status, lasting or expected to last more than 7 consecutive calendar days, initiated by the employer without prejudice to the worker, for reasons such as lack of orders, model change over, termination of seasonal or temporary employment, inventory-taking, introduction of labor saving devices, plant breakdown, or shortage of materials.

Other Separations- This subgroup includes terminations of employment for military duty lasting or expected to last more than 30 days, discharge, retirement, death, permanent disability, failure to meet the physical standards required and transfers of employees to another establishment of the company.

Retail Sales^b- This includes all sales made within the state of tangible personal property or electrical energy, gas, water, services or entertainment for use or consumption and not for resale.

Retailers' Sales Tax Rate^b- A tax at the rate of 3% upon the gross receipts received from the sale of tangible personal property at retail within this state.

Exemptions from Retailers' Sales Tax Rate^b-

- (a) All sales of motor-vehicle fuel.
- (b) Sales of tangible personal property to educational institutions.
- (c) Sales of aircraft including remanufactured and modified aircraft and aircraft repair modification.
- (d) All rentals of nonsectarian textbooks by schools.
- (e) The lease or rental of all films, records and tapes.
- (f) Any motor vehicle or aircraft sold and delivered in this state to a bona fide resident of another state.
- (g) Meals served without charge to employees of any restaurant.
- (h) All sales of animals, fowl and fish used primarily in agriculture.
- (i) Trade fixtures and equipment which are already installed and second hand when sold.
- (j) Sales of items used in construction of facilities for non-profit institutions and governmental agencies.

Definitions, continued

Real Dollar Value^a - A series of dollar values from which the effect of changes in the purchasing power of the dollar has been removed. The resulting series is in real terms and thus indirectly physical volume. The process of converting current values is generally called deflating. Different deflators may be used to adjust different sets of data to constant dollars.

Consumer Price Index^d - The consumer price index is a statistical measure of change in prices of goods and services purchased by urban wage earners and clerical workers, including families and single persons.

Sources:

Book

^aDouglas Greenwald, Jack McCroskey, Dictionary of Modern Economics, McGraw Hill, 1965.

Government Publications

^bKansas Statutes Annotated, 1972.

^cExecutive Office of the President, Management and Budget, Statistical Policy Division, Standard Industrial Classification Manual, 1972.

^dUnited States Department of Labor, Bureau of Labor Statistics, Handbook of Methods, Bulletin 1711.

WICHITA-SEDGWICK COUNTY

DATE

February 20, 1974

METROPOLITAN AREA PLANNING DEPARTMENT

TO Robert A. Lakin, Director of Planning
FROM Willard L. Stockwell, Chief Planner, Advance Plans Division ^{WLS}
SUBJECT Economic Forecasting Contract

The Dominant Industries Study, contracted to the Center for Business and Economic Research, Wichita State University, has been completed. The study has been reviewed by several members of my staff and we are completely satisfied that the study fulfills the contract requirements. Attached is an abstract of the study as well as the first seven sections of the report text for your review.

Although the results of the contract do not require adoption by the MAPC, I believe the study's findings, future usefulness and possible future economic investigations should be presented to the Commission. This presentation could be made at their regular March 14th meeting, the March 14th luncheon, or at a special meeting. Since the study is technical in nature and will require 1 to 1½ hours to present, I would recommend not utilizing a MAPC meeting or luncheon for a presentation. Rather I suggest a special meeting where not only the Dominant Industries Study but all current 701 projects could be presented and discussed. This could include status reports on projects such as goals and objectives, population forecasting, open space, transit planning, water, etc.

WLS:RLM:df

Let's talk to Marge at a time

ECONOMIC FORECASTING

SUMMARY

This study was undertaken to investigate the impact of changes in employment in the aerospace industry on the population and economy of the City of Wichita. The study was performed by the Center for Business and Economic Research, Wichita State University, under a contract with the Wichita-Sedgwick County Metropolitan Area Planning Department. The purpose of the study was to provide estimates of changes in population, employment, income, and sales of products and services that take place with decreases in the level of employment in the aerospace industry.

Data gathering techniques included both the collection of secondary information and the survey of primary sources. Surveys were conducted among persons that had migrated from Sedgwick County during the study period to determine the socio-economic status of such individuals. Similar surveys were performed within Sedgwick County to derive information for the study period relevant to persons who did not migrate. In both cases, the sample data were categorized into aerospace related groups.

General economic data for the period were gathered from secondary sources or obtained from the primary data gathering agencies. Where possible, series of data were deseasonalized. For comparative series, i.e.; the U.S., Kansas, and Wichita; rates of change were utilized in lieu of absolute amounts.

Annual net population estimates were obtained by the following procedure: Current year population - (prior year population + net natural increase) net natural increase which was calculated by simply subtracting deaths from births for each year. Annual estimates of migration were distributed to months by the use of a proxy series. In this case the proxy series consisted of adjusted utility connects and disconnects by month for each year. Economic time series were regressed against the monthly net-migration estimates in a step-wise regression model. Key variables were then selected for estimating net-migration in a multiple regression equation of the form $Y = A + BX_1 + BX_2 + BX_3 + \dots + BX_n$. The variables were selected to represent economic conditions both within and outside of Sedgwick County.

EVALUATION

The time period involved in the study was the period from June, 1969 to June, 1972. This period was chosen to include the total downswing in aircraft production employment and the beginning of the upswing. In addition, the period encompasses the peak to trough period in the national business cycle as designated by the National Bureau of Economic Research. The peak-trough period ranged from the downturn in November, 1969, to the upturn in November, 1970. Data for all selected series were gathered to include the June, 1969, through June, 1972, period.

The dominance of aerospace activity in Sedgwick County's industrial structure has long been recognized although the extent and consequences of such dominance has only recently been quantified. For forecasting purposes it is important to know the size, type, and relationship of the economic impact of decreases in aerospace activity. The study provides estimates of the amount of income loss caused by a reduction in employment of aerospace and non-aerospace workers. Shifts in employment from the initial unemployment in the dominant industry and progressing to unemployment created in secondary or supply industries as well as job shifting and skill loss through out-migration is illustrated. The study also provides estimates of changes in population, employment, and sales of products related to a decrease in aerospace activity.

DOMINANT INDUSTRIES STUDY

Prepared for the
Wichita-Sedgwick County Metropolitan
Area Planning Department

Center for Business and Economic Research
Wichita State University

*Is this the proper
citation?*

The preparation of this report was financed in part through
a Comprehensive Planning Grant from the Department of Housing and
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INTRODUCTION

The National Bureau of Economic Research has designated the period of November, 1969, to November, 1970, as a period characterized by a downturn in the business cycle or period of recession. The impact that a national recession may have on a specific city will vary depending upon the nature of the recession and the industrial characteristics of the local area. In this particular case, the impact of the recession would appear to have been much harsher in the Wichita area than in the nation as a whole. From late 1969 to mid-1971, the Wichita area suffered an increase in unemployment from 4.0 percent of the civilian labor force to a peak of 11.6 percent. During this same period, the rate of unemployment for the nation as a whole rose from 3.2 percent to a peak of 6.5 percent. One of the reasons that the Wichita area experienced a comparatively greater impact during the period was because the decline in business activity nationally struck hardest in the industrial sector where Wichita is most vulnerable: the aerospace industry.

The aerospace industry has long been recognized as the dominant industry in the Wichita area. The data given in TABLE 1 indicate the relative importance of employment in aircraft and parts production in the Wichita Standard Metropolitan Statistical area (S.M.S.A.).

TABLE 1

EMPLOYMENT IN AIRCRAFT AND PARTS
AS A PERCENT OF TOTAL EMPLOYMENT
AND MANUFACTURING EMPLOYMENT,
1960 - 1973

Year	Percent of Total Employment	Percent of Manufacturing Employment
1960	21	68
1961	20	66
1962	20	66
1963	19	63
1964	20	66
1965	19	64
1966	22	68
1967	23	69
1968	21	67
1969	18	62
1970	13	53
1971	10	45
1972	12	48
Nov., 1973	15	53

Source: Computations base on annual average employment data as reported
by the Wichita Office of the Kansas Employment Security Division.

Within the period 1960 - 1973, employment in aircraft and parts had its greatest relative position in 1967 when it accounted for 23 percent of total employment and 69 percent of manufacturing employment in the area. The relative position of aerospace activities declined from 1967 to the low in 1971. However, the percentages increase from 1971 through 1973 indicating a movement back to the position in the local employment mix held by the aerospace industry prior to the 1969 recession.

The movement of the proportion of area employment accounted for by aircraft and parts production coincides with the periods of decline and expansion of employment experienced in the industry. The absolute level of employment for the June period of the years 1969 through 1972 is illustrated in TABLE 2. During the June, 1969 to June, 1971, period the

TABLE 2

TOTAL EMPLOYMENT AND EMPLOYMENT
IN AIRCRAFT AND PARTS FOR THE
MONTH OF JUNE, 1969 - 1972

June Employment Levels		
<u>Year</u>	<u>Aircraft & Parts</u>	<u>Total</u>
1969	30,650	164,850
1970	20,400	153,500
1971	14,400	145,550
1972	19,300	156,900

Source: Appendix A

number of active job holders in aircraft production declined by 16,150. The total number of persons employed declined by 19,300 during the same period. The decline in employed persons in aerospace was 84 percent of

the total. During the expansion from June, 1971, to June, 1972, aircraft employment increased by 4,900 and total employment by 11,350. The increase in aerospace employment was only 43 percent of the increase in total employment.

The total civilian labor force in the Wichita Area decreased from June, 1969, to June, 1971, by 5,950 persons or approximately 3 percent of the 1969 figure (see Appendix A). The increase in the 1971 to 1972 period was approximately 1 percent. Thus, the net change in number of persons comprising the civilian work force was relatively small in the recessionary period.

The employment data clearly indicate the predominant role of the aircraft industry during the economic decline of 1969-1971. Given the rapidity and severity of the employment decline, the Wichita Area economy should have been in such a depressed state that quick recovery would not have been anticipated. Yet the resiliency shown by the economy in the post-1971 period would indicate that some elements of the community did not follow the pattern set by aerospace employment. Certain sectors of the economy must have provided an underlying stability that allowed the area to weather the shock of high unemployment without tremendously adverse aggregate effects.

This study was undertaken to investigate the impact of changes in employment levels in the aerospace industry on such aggregate measures as population, income, and sales of goods and services in the Wichita Area. The study essentially covers three types of problems: What was the effect of the unemployment in the aerospace industry on the population of Wichita and can the experience provide a predictive mechanism for similar future

experiences? What was the impact on aggregate income flows of the high rate of unemployment? How did the rate of commercial activity respond to the recessionary pressures in the Wichita economy?

Methodology

The time period chosen for the study was the period from June, 1969, to June, 1972. This period includes both the peak to trough designation of the national business cycle (November, 1969, to November, 1970) and the major decline in aircraft production employment with the beginning of the subsequent increase in employment.

Series of economic data for the period were gathered from secondary sources or obtained from the primary data gathering agencies. Where practicable, the data series were adjusted for seasonality and, in the case of retail sales, were further adjusted for price increases.

Data relating to individual circumstances were obtained by survey techniques. Two structured surveys were conducted for the study. The first survey was a sample of the persons who had migrated from Sedgwick County during the study period. The limits of the county were utilized rather than the city to avoid counting as migrants those people who may have moved from the city for non-economic reasons, i.e., school problems, etc., but essentially retained their economic ties with the city. The sample was drawn from a listing of names and addresses obtained from change of address information.

The second survey was a random sample of persons within Sedgwick County. Data similar to that obtained from migrants was thus drawn from

nonmigrants. Weighted samples were taken on the basis of zip code areas in the county. In both cases, the general survey results were sub-categorized into aerospace related groups.

Population Change

Population change in an open region may stem from four possible sources: births, deaths, in-migration, and out-migration. Births and deaths are recorded monthly for the area but in-migration and out-migration are extremely difficult to measure on a short-term basis. However, the concept of net population change will give an indication of which of the two flows are dominant in the region. Since birth rates and mortality rates are relatively stable over short periods of time, a negative net population change would indicate that out-migration was greater than in-migration and the converse would be true for positive net change.

The estimated annual net population change for the period was derived as follows:

$$\text{Net change} = P_{t+1} - (P_t + B - D)$$

where

P_t = population at the beginning of time period t

P_{t+1} = population in time period $t + 1$

B = absolute number of births during the period

D = absolute number of deaths during the period.

The results are given in Appendix B.

The annual estimates were distributed over the monthly periods by the application of a proxy series. In this case, the proxy series utilized consisted of average residential utility connects and disconnects adjusted

by the pattern of migration indicated in the survey results. Economic time series were then regressed against the monthly net-migration estimates in a step-wise regression model to select the variables that would provide the best fit in the second model.

The variables selected in the first stage were then utilized in a multiple regression technique of the form:

$$Y = A + B_1X_1 + B_2X_2 + \dots + B_nX_n$$

The series utilized in the equation represented economic conditions outside of Sedgwick County and inside the county. Since the original purpose of the study was to deal with impact of aerospace employment declines, three of the variables were directly related to that industry.

The estimating equation was:

$$Y = -8867.8 + .001 X_1 + 68.675 X_2 - \\ 7.477 X_3 + .017 X_4 - 244.344 X_5$$

where

X_1 = Retail Sales (Series 003)

X_2 = Average Weekly Earnings by Production
Workers in Manufacturing - U.S. (Series 037)

X_3 = Average Weekly Hours in Aircraft and Parts
Production - Wichita (Series 039)

X_4 = Employment in Aircraft and Parts-
Wichita (Series 062)

X_5 = Monthly Labor Turnover Rates,
Layoffs - Wichita (Series 074)

The regression was significant at the .01 level. The regression statistics are presented in TABLE 3 and TABLE 4.

TABLE 3
REGRESSION STATISTICS

Variable	Intercept or Regression Coefficient	Standard Error of Regression Coefficient	Partial Correlation Coefficient
Intercept	- 8867.8		
X ₁	.001	.0117	.0164
X ₂	68.675*	31.7130	.3625
X ₃	- 7.477	49.9267	-.0268
X ₄	.017	.0298	.1006
X ₅	- 244.344*	92.8731	.4272

$R^2 = .55$

*Significant at .05 level.

TABLE 4
CORRELATION COEFFICIENTS MATRIX

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆
X ₁	1.00					
X ₂	.26	1.00				
X ₃	.24	.24	1.00			
X ₄	-.20	-.69	-.36	1.00		
X ₅	-.25	-.59	-.00	.21	1.00	
X ₆	.21	.64	.06	-.30	-.67	1.00

Overall migration is influenced by conditions in both the local area and the potential destination, the characteristics (age, level of education, race, etc.) of the individual, and the distance of the journey. The spatial mobility of individuals, that is, their readiness to move in

response to some set of incentives, may be increased by a single factor or set of factors. The assumption underlying the model set out above was that migrants were essentially "pushed" from the area by the lack of employment opportunity brought about by the reduction of employment levels in aircraft and parts and an ensuing recessionary state in the local economy. The Coefficient of Determination (R^2) of .55 would indicate that factors other than employment drops in aircraft and parts were also at play in the migratory pattern.

Of the migrants surveyed, 31.4 percent were affiliated with the aerospace industry. Within that group, 65 percent indicated that they had experienced a lay-off status. The predominant indications were that they moved from Sedgwick County because they could not find a job at comparable income and skill levels.

Among all migrants, 26 percent indicated that they had been in a lay-off status. Thus, very few migrants other than aerospace workers had been "pushed" from the area because of lay-off status. More than likely, they were transferred or were new entrants into the labor market and seeking employment in places more appealing than their home location. The latter groups, in particular, contained newly graduated students from local institutions of higher education most of whom would normally fall into the out-migrant category. The addition of variables covering the number of persons entering the age cohort 18-24 years and the number of persons graduating from local colleges and universities would undoubtedly increase the coefficient of determination of the predictive equation.

Income

Income in the area continued to increase during the study period.

While the rate of increase of personal income was small, approximately half the rate of the nation as a whole, the change was positive. The greatest impact of reduction in aerospace employment should be felt through the income stream. As an industry, aircraft and parts is not highly interrelated to other industries in the community. Hence, the employment multiplier would be relatively small. The industry is a relatively high wage one, however, and the reduction of income through loss of paychecks should produce a fairly strong multiplier effect. As incomes decline, families normally reduce purchases of goods and services which causes a further reduction in employment and income.

Of the persons surveyed within Sedgwick County, 31.7 percent were affiliated with the aerospace industry. Within that group, 38.6 percent indicated they had experienced a lay-off status - again accounting for all but 2 percent of total lay-offs. The mean family income of all persons who lost their jobs declined by 32 percent - far less than one would expect if estimates were based on straight multiplier analysis.

There were several factors that tended to truncate the income multiplier effect. One factor was the infusion of transfer payments, e.g., unemployment compensation, into the economy. A second factor was the tendency toward multiple job holders in the family. A third element which will also be discussed later, was the ability of non-migrant unemployment to pick up a temporary job thus keeping the term of total unemployment shorter than normally would be the case. Some individuals also indicated the ability to pick up a second job in cases where cuts in pay had been sustained as opposed to total lay-off.

In terms of the aggregate income of the area, additional factors were

also at play. Persons who were not unemployed seemed to be able to not only maintain but actually enhance their income position. Average weekly earnings over the period did not decline and, in fact, continued to increase. Thus, the purchasing power of individuals did not experience the absolute decline that would have been anticipated.

Retail Sales

Retail Sales volume followed a pattern similar to aggregate personal income. The absolute volume of sales did not decline during the period but the rate of increase dropped - particularly during the year 1970. Some decline in the rate of growth of sales would have been anticipated because of national economic conditions. The question then is how much greater was the drop in the growth rate in Sedgwick County than in the nation as a whole?

The monthly rate of change of retail sales volume for the United States, the state of Kansas, and Sedgwick County were regressed against time in a second degree polynomial regression equation of the form:

$$Y = A + BX + CX^2$$

where the X values all time periods. The resulting equations were as follows

U.S.	$Y = -.03 + .05X + .002X^2$
Kansas	$Y = -2.91 + .68X - .02X^2$
Sedgwick	$Y = -1.16 + .43X - .02X^2$

The coefficients of the regression equation indicate that the Sedgwick County rate of growth of sales was below that of the state but not the

county as a whole.

Given the income patterns that prevailed during the period, it is not out of line to find that the level of retail sales did not decline absolutely. In addition to income maintenance, respondents in the survey indicated that support was also achieved by drawing down savings during the period of their unemployment. The volume of savings in a local area is nearly impossible to measure. However, certain inferences can be made concerning the availability of savings. Since aerospace employees are considered among the higher paid workers in the community, the access to savings should be greater than average. For short-term unemployment periods, the savings plus the availability of transfer payments would tend to maintain purchasing power.

Secondary and Temporary Employment

During the period of the study, the total number of unemployed increased commensurately with lay-offs in the aerospace industry. However, there were months in which the number of unemployed actually decreased. These periods occurred throughout the peak to trough decline. The relationships between the absolute change in employment in aircraft and parts and the absolute change in the number of unemployed is shown in TABLE 5. If the first column has a negative sign, the second column should exhibit a positive sign. The existence of declines in unemployment, given the small changes in the labor force, would indicate sectors in the economy with sufficient strength to absorb unemployed persons.

The sectors that were able to increase their employment are illustrated in TABLE 6. Sectors that are particularly interesting are Fabricated Metal Products, Retail Trade, and Government.

Fabricated Metal Products is contained under the manufacturing category. The indication is that lines of manufacturing not related to aerospace were able to retain strength in the economy during the recession. The employment pattern in Retail Trade is consistent with the results of the analysis concerning the volume of trade. Likewise, the continued employment in such pursuits accounts for the ability of spouses, particularly females, to obtain work and for others to obtain temporary employment. The Government sector reflects the institution of job slots under various types of programs - particularly the Emergency Employment Act. These job slots were considered temporary but in some cases led to permanent positions. In either case, the programs contributed to income maintenance in the community.

TABLE 5
ABSOLUTE CHANGE IN EMPLOYMENT IN AIRCRAFT AND PARTS

AND ABSOLUTE CHANGE IN NUMBER OF UNEMPLOYED

WICHITA S.M.S.A., JUNE 1969-1972

(non-seasonally adjusted)

	<u>Absolute Change in Aircraft and Parts</u>	<u>Absolute Change in Number of Unemployed</u>
<u>1969</u>		
June		
July	-250	-600
August	-5,050 ^a	350
September	5,250 ^a	-800
October	-900	-1,300
November	-150	800
December	-550	100
<u>1970</u>		
January	-1,150	350
February	-2,450	2,750
March	-1,550	1,000
April	-1,300	1,100
May	-1,350	2,450
June	-800	3,550
July	-700	-1,650
August	-400	350
September	-900	-1,550
October	-650	-100
November	-400	1,550
December	-700	-1,650
<u>1971</u>		
January	-700	1,550
February	-650	350
March	-500	250
April	-750	-1,050
May	100	300
June	250	3,300
July	250	-2,600
August	500	-2,100
September	300	-1,950
October	150	-1,550
November	550	450
December	700	-1,600
<u>1972</u>		
January	650	-200
February	400	-450
March	250	-900
April	400	-750
May	350	650
June	400	2,850

^aRecorded data does not follow trend.

Source: Wichita Office of the Kansas Employment Security Division.

TABLE 6

CHANGES IN EMPLOYMENT BY CATEGORY AND INDUSTRY
 IN RELATION TO CHANGES IN EMPLOYMENT IN AIRCRAFT AND PARTS
 FOR SELECTED MONTHS

July 1969

Absolute Changes in:

Aircraft and Parts	-250
Number of Unemployed	-600
Civilian Labor Force	-1,250
Number of Employed	-650

Category and Industry Changes in Employment:

Agricultural	350
Mining	50
Contract Construction	200
Transportation and Public Utilities	50
Total Increase	650

October 1969

Absolute Changes in:

Aircraft and Parts	-900
Number of Unemployed	-1,300
Civilian Labor Force	-2,300
Number of Employed	-1,000

Category and Industry Changes in Employment:

Printing, Publishing and Allied Industries	50
Mining	50
Retail Trade	300
Government	550
Total Increase	1,050

July 1970

Absolute Changes in:

Aircraft and Parts	-700
Number of Unemployed	-1,650
Civilian Labor Force	-5,100
Number of Employed	-3,450

Category and Industry Changes in Employment:

Fabricated Metal Products	50
All Other Nondurable Goods	50
Total Increase	100

September 1970

Absolute Changes in:

Aircraft and Parts	-900
Number of Unemployed	-1,550
Civilian Labor Force	-2,450
Number of Employed	-900

Category and Industry Changes in Employment:

Fabricated Metals	50
Transportation, Communication, Electrical, Gas and Sanitation Service	50
Retail Trade	50
Government	1,700
Total Increase	1,850

October 1970

Absolute Changes in:

Aircraft and Parts	-650
Number of Unemployed	-100
Civilian Labor Force	-600
Number of Employed	-500

Category and Industry Changes in Employment:

Agricultural	300
Fabricated Metal Products	100
Meat Products	50
Printing, Publishing and Allied Industries	50
All Other Nondurable Goods	50
Services	50
Government	650
Total Increase	1,250

December 1970

Absolute Changes in:

Aircraft and Parts	-700
Number of Unemployed	-1,650
Civilian Labor Force	-3,150
Number of Employed	-1,500

Category and Industry Changes in Employment:

All Other Durable Goods	50
Printing, Publishing and Allied Industries	50
Retail Trade	650
Government	150
Total Increase	900

April 1971

Absolute Changes in:

Aircraft and Parts	-750
Number of Unemployed	-1,050
Civilian Labor Force	-550
Number of Employed	500

Category and Industry Changes in Employment:

Agricultural	50
Fabricated Metals	100
Machinery (including electrical)	50
All Other Durable Goods	300
Food and Kindred Products	50
Chemical and Allied Products	50
Mining	100
Contract Construction	400
Transportation, Communication, Electrical, Gas and Sanitation Service	100
Retail Trade	250
Finance, Insurance and Real Estate	100
Services	300
Total Increase	1,850

May 1971

Absolute Changes in:

Aircraft and Parts	100
Number of Unemployed	300
Civilian Labor Force	2,300
Number of Employed	2,000

Category and Industry Changes in Employment:

No Decrease Recorded

June 1971

Absolute Changes in:

Aircraft and Parts	250
Number of Unemployed	3,300
Civilian Labor Force	5,350
Number of Employed	1,100

Category and Industry Changes in Employment:

Fabricated Metals	-1,300
Printing, Publishing and Allied Industries	-50
Retail Trade	-100
Government	-300
Total Decrease	-1,750

November 1971

Absolute Changes in:

Aircraft and Parts	550
Number of Unemployed	450
Civilian Labor Force	850
Number of Employed	400

Category and Industry Changes in Employment:

Agricultural	-250
Fabricated Metal Products	-50
All Other Durable Goods	-50
Printing, Publishing and Allied Industries	-100
Contract Construction	-300
Finance, Insurance and Real Estate	-100
Services	-100
Government	-200
Total Decrease	1,150

May 1972

Absolute Changes in:

Aircraft and Parts	350
Number of Unemployed	650
Civilian Labor Force	3,150
Number of Employed	2,500

Category and Industry Changes in Employment:

Machinery (including electrical)	-100
Grain Mill Products	-50
Transportation, Communication, Electrical, Gas and Sanitation Services	-50
Total Decrease	-200

June 1972

Absolute Changes in:

Aircraft and Parts	400
Number of Unemployed	2,850
Civilian Labor Force	5,500
Number of Employed	2,650

Category and Industry Changes in Employment:

Chemical and Allied Products	-50
Mining	-50
Total Decrease	-100

DEFINITIONS

Civilian Labor Force^d- The civilian labor force comprises the total of all civilians classified as employed and unemployed.

Employment^d- Employed persons comprise (1) all those who, during the survey week, did any work at all as paid employees, or in their own business, profession or farm, or who worked at least 15 hours as unpaid workers in a family operated enterprise and (2) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, labor-management dispute, or various personal reasons. Each employed person is counted only once. Those who held more than one job are counted in the job at which they worked the greatest number of hours during the survey week. Excluded from the employed group are persons whose only activity consisted of work around their own home, such as housework, painting, repairing, etc., or volunteer work for religious, charitable and similar organizations.

Unemployment^d- Unemployed persons include those who did not work at all during the survey week, were looking for work and were available for work in the reference period. Those who had made efforts to find work within the preceding 4-week period, such as by registering at a public or private employment agency, writing letters of application, canvassing for work, etc., and who, during the survey week, were awaiting the results of these efforts, are considered to be looking for work. Also included as unemployed are those who did not work at all during the survey week and (a) were waiting to report to a new wage or salary job scheduled to start within the following 30 days and were not in school during the survey week or (b) would have been looking for work except that they were temporarily ill.

Unemployment Rate^a- The number of unemployed persons expressed as a percentage of the total civilian labor force.

Production Workers^c- This group, in general, covers those employees, up through the level of working foreman, who are engaged directly in the manufacture of the product of the establishment.

Aircraft and Parts^c- This industry includes establishments primarily engaged in manufacturing aircraft, aircraft engines and engine parts, auxiliary equipment or assemblage of complete aircraft. This sector also includes establishments primarily engaged in research and development of aircraft and aircraft engines or in factory type aircraft modification on a contract or fee basis.

Accessions^d- Accessions are all permanent and temporary additions to the employment roll, whether of new or rehired employees. Transfers from another establishment of the same company are counted as accessions. The Accession Rate and its two major component parts, New Hires and Other Accessions, are expressed as a rate per 100 employees.

New Hires- New hires are permanent and temporary additions to the employment roll of persons who have never before been employed by the establishment and former employees rehired although not specifically recalled by the employer. This category excludes transfers from

Definitions, continued

other establishments of the same company and employees returning from military service or unpaid leaves of absence.

Other Accessions- This subgroup includes all additions to the employment roll other than new hires.

Separations^d- Separations are terminations of employment of persons who have quit or have been taken off the rolls for reasons such as layoffs, discharge, retirement, death, military service expected to last more than 30 consecutive calendar days, physical disability, etc. Since January 1959, transfer of employees to other establishments of the same company also have been classified as separations. The Separation Rate and its three major component parts, Quits, Layoffs and Other Separations, are expressed as a rate per 100 employees.

Quits- Quits are terminations of employment initiated by employees for any reason except retirement, transfer to another establishment of the same firm, or service in the armed forces. Included as quits are persons who failed to report after being hired, if previously counted as accessions, and unauthorized absences which, on the last of the month, have lasted more than 7 consecutive calendar days.

Layoffs- Layoffs are suspensions from pay status, lasting or expected to last more than 7 consecutive calendar days, initiated by the employer without prejudice to the worker, for reasons such as lack of orders, model change over, termination of seasonal or temporary employment, inventory-taking, introduction of labor saving devices, plant breakdown, or shortage of materials.

Other Separations- This subgroup includes terminations of employment for military duty lasting or expected to last more than 30 days, discharge, retirement, death, permanent disability, failure to meet the physical standards required and transfers of employees to another establishment of the company.

Retail Sales^b- This includes all sales made within the state of tangible personal property or electrical energy, gas, water, services or entertainment for use or consumption and not for resale.

Retailers' Sales Tax Rate^b- A tax at the rate of 3% upon the gross receipts received from the sale of tangible personal property at retail within this state.

Exemptions from Retailers' Sales Tax Rate^b-

- (a) All sales of motor-vehicle fuel.
- (b) Sales of tangible personal property to educational institutions.
- (c) Sales of aircraft including remanufactured and modified aircraft and aircraft repair modification.
- (d) All rentals of nonsectarian textbooks by schools.
- (e) The lease or rental of all films, records and tapes.
- (f) Any motor vehicle or aircraft sold and delivered in this state to a bona fide resident of another state.
- (g) Meals served without charge to employees of any restaurant.
- (h) All sales of animals, fowl and fish used primarily in agriculture.
- (i) Trade fixtures and equipment which are already installed and second hand when sold.
- (j) Sales of items used in construction of facilities for non-profit institutions and governmental agencies.

Definitions, continued

Real Dollar Value^a- A series of dollar values from which the effect of changes in the purchasing power of the dollar has been removed. The resulting series is in real terms and thus indirectly physical volume. The process of converting current values is generally called deflating. Different deflators may be used to adjust different sets of data to constant dollars.

Consumer Price Index^d- The consumer price index is a statistical measure of change in prices of goods and services purchased by urban wage earners and clerical workers, including families and single persons.

Sources:

Book

^aDouglas Greenwald, Jack McCroskey, Dictionary of Modern Economics, McGraw Hill, 1965.

Government Publications

^bKansas Statutes Annotated, 1972.

^cExecutive Office of the President, Management and Budget, Statistical Policy Division, Standard Industrial Classification Manual, 1972.

^dUnited States Department of Labor, Bureau of Labor Statistics, Handbook of Methods, Bulletin 1711.

WICHITA-SEDGWICK COUNTY

DATE

February 27, 1974

METROPOLITAN AREA PLANNING DEPARTMENT

TO Willard L. Stockwell, Chief Planner, Advance Plans Division
FROM Richard L. Mathews, Junior Planner, Advance Plans Division
SUBJECT Printing of two additional 74 Enumeration Tabulations
Printing of the Economic Forecasting Study and the
Input-Output Study.

The IRC Tab Committee met on February 12th to choose those cross tabulations various City and County agencies need from the 74 Enumeration. As you know, this year's Enumeration contract, because of increasing costs, calls for eight tabulations to be produced as opposed to last year's ten tabulations. Thus, the Committee had to eliminate two of the tabs which were paid for under the 1973 Enumeration contract. It was decided to drop the Number of HOH by Race, Sex, and Age tab and the Bedrooms by Family Size and Race tab from the list of tabs to be produced under the 74 Enumeration contract. This was a result of the tab's relative importance to all City-County agencies.

Since MAPD will be working on another phase of the housing plan in FY75, I believe MAPD should provide for the purchase of these two tabulations. It would be most economical to have Langston and Kitch produce these tabs with their existing programs rather than doing it ourselves. The two tabs will cost approximately \$250 of which Model Cities is willing to pay half. I have talked with Jon and Larry and find that we have enough money (\$2,872 as of January 30th) in our Information System Development-Data Processing fund to cover the remaining FY74 DIME File data processing requirements as well as the total \$125 for our portion of the two enumeration tabs.

The second item needing funding is the printing of the recently completed Dominant Industries Study (FY73-Economic Forecasting Contract) and the Input-Output Study (FY72-Economic Base Contract). The following is a cost of duplication break-out based on the attached mailing list and utilization of the City's duplicating services.

	<u>Copies</u>	<u>Pages</u>	<u>Rate/Page</u>	<u>Total Cost</u>
Dominant Industries Study (DIS)	200	129	2.55	328.95
Input-Output Study (I-O)	150	48	2.55	<u>122.40</u>
TOTAL				451.35

Page 2

The I-0 Study will be of interest only to those potential users of the matrix, while the D-I Study will have a much wider range of interest. Although we could print only the first seven sections (20 pages) of the D-I Study, I believe that the time series data presented in appendixes A,B,C,D, & F are particularly interesting and should be printed. Appendix E, Computer Information programs, should be included to aid other researchers involved in this type of study as well as aiding any update of the study.

The cost of printing the 200 and 150 copies of the D-I and I-0 Studies is \$451.35. The D-I Study contract underspent its allotted \$10,000 by \$1,900 leaving adequate monies to print both of the studies.

I have discussed these two funding schemes with Jon and Larry and everything appears above board. Since we must receive a duplicating bill for the two studies before March 8th, I am now making necessary preparations.

RLM:df

cc: Jon Coleman, Principal Planner, Advance Plans Division
Larry Dobson, Administrative Assistant

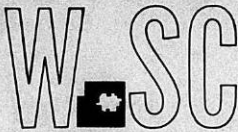
DISTRIBUTION LIST FOR THE INPUT-OUTPUT and
DOMINANT INDUSTRIES STUDIES

	<u>Input-Output Study</u>	<u>Dominant Industries Study</u>
Local Newspapers		5
Center for Urban Studies	2	2
Center for Business & Economic Research	5	5
IRC Members	20	20
SKEDD	1	1
City Commissioners & Manager		6
Industrial Development	5	5
Chamber of Commerce	5	5
Greater Downtown Wichita	1	1
Community Development	2	2
County Commissioners & Clerk		4
Planning Commissioners	12 ¹⁰	12 ¹⁰
Louie Earle		1
WSU Library - <i>Bus. & Tech. Div.</i>	1	1
Wichita Library	1	1
WREAC	3	3
Manpower Center	1	1
Mayors of Small Towns in County (Possible)		<u>18</u>
	<u>59</u>	<u>93</u>
Additional Distribution	<u>91</u>	<u>107</u>
	150	200

watch overlaps

*6 copies to population
town planning comm.*

WICHITA—SEDCWICK COUNTY



METROPOLITAN AREA PLANNING
DEPARTMENT

PHONE 262-0611 — AREA CODE 316
CITY BUILDING ANNEX
104 S. MAIN ST.
WICHITA, KANSAS 67202

October 8, 1973

Dr. Norman Weed, Director
Center for Business and Economic Research
Wichita State University
Wichita, Kansas 67208

Dear Dr. Weed,

We have reviewed your abstract of the Economic Forecasting Study between the Center for Business and Economic Research and the Wichita-Sedgwick County Metropolitan Area Planning Commission. Having compared the accompanying primary and secondary data and multiple regression work with the contract requirements we are confident you can complete the contract requirements to our complete satisfaction.

Since you will begin writing the final report for the contract this week, I believe it is appropriate to specify the contract requirements we wish to be clearly identified and discussed in the final report. These are the following:

OBJECTIVE: Provide auxiliary planning models that will be of particular use in the forecasting of;

- A. Measure of Impact on Population
Base of Changes in Aerospace
Activity.
 - 1. Estimates of population out-
migration.
 - 2. Model of population change re-
lated to the aerospace industry.
- B. Provide Employment & Income Impact
Measurements.
 - 1. Impact measurements of aerospace
activity changes on;

Page 2 - Dr. Norman Weed
October 8, 1973

a. Employment levels

1. direct impact
2. secondary impact

b. Income base

2. Skill loss caused by unemployed out migrants,
3. Job shifting patterns of non-migrant former aerospace workers,
4. Estimated income changes for direct and secondary impact.

C. Provide Estimates of the Impact of Income Loss on the Trade and Service Industries.

1. Resultant changes in trade and service industries from income losses will be related to shifts in employment of the aerospace industry.

D. Study Methodology and Conclusions.

These comments are not intended to exclude other requirements specified in the Contract, rather they represent those items we think should specifically be discussed in the report.

Since this study is technical in nature, I would like you to meet with my staff upon completion of the study to discuss your methodology, problems and shortcuts encountered in the study, your conclusions, and suggested future use of both the Economic Forecasting Study and the Input-Output Study.

Sincerely,

Willard L. Stockwell
Chief Planner
Advance Plans Division

WLS:RLM:jl

WICHITA-SEDGWICK COUNTY

DATE
May 24, 1973

METROPOLITAN AREA PLANNING DEPARTMENT

TO Files
FROM Dick Mathews, Junior Planner, Advance Plans Division
SUBJECT Progress of Economic Forecasting Contracting No. CPA-KS-07-16-1004
as of May 16, 1973.

On May 16th Dr. Weed stated that he planned on completing the above mentioned contract by June 30, 1973. He did not expect to encounter any problems which may require an extension of the contract completion date. The following is a rendition of our meeting on the problems encountered during contract work and the degree of contract completion.

PROBLEMS:

- 1) The quality of graduate students assigned to Dr. Weed this year has required his supervision of work very closely. This has involved the double checking of many figures and sources.
- 2) Several unexplainable variances in KSES employment estimates have been encountered. The KSES estimate of labor force size should not be as erratic as it is. Due to lack of comparable data these inconsistencies cannot be corrected. Dr. Weed mentioned that "mailing down" the KSES procedure of estimating employment statistics would be a possible outcome of any future work on an employment recording system.
- 3) The third problem, also associated with the KSES data, is the discrepancy found between the time when separations are recorded and the time when these separations show up in unemployment counts. These lags seem longer than Dr. Weed expected.

COMPLETION RATE FOR SCHEDULE OF SERVICES:

PHASE 1 - Collection of Secondary Data and Personal Interviews:

All secondary data time series on employment, migration, retail activity and other economic indicators has been gathered. If, when regressions are run on out-migration and local economic indicators, certain secondary data are determined to be unrelated, then Dr. Weed may go back and pick up another time series factor.

PHASE 2 - Survey:

The survey forms of both the first and second phase surveys are in. The Group I surveys (those going to out-migration with

Page 2 - Files
May 24, 1973

work affiliation unknown) resulted in a 15% survey return or approximately 300 forms. The Group II survey (residents of Sedgwick County with previously undetermined work affiliation) resulted in an 18% return or 180 forms. Dr. Weed did not believe this return rate to be small considering the size of the survey form. Dr. Weed is currently in the process of allocating out-migration from yearly to monthly rates. This is being done with the aid of time series on utility reportings such as gas, telephone and electricity hook ups and cut offs.

PHASE 3 - Analysis:

Remaining in this phase is analysis based on the relationships of out-migration and other economic factors. Primary and secondary data cards have been coded and 50% of these have been punched. The relationships between these variables will be determined by a two pronged approach. One, approach is to regress all of the collected variables to determine what correlates with out-migration. The second approach will be building a system of variables of either direct measures or proxies.

DM:jl

WICHITA-SEDGWICK COUNTY

DATE
March 16, 1973

METROPOLITAN AREA PLANNING DEPARTMENT

TO Willard L. Stockwell, Chief Planner, Advance Plans Division
FROM Richard L. Mathews, Junior Planner, Advance Plans Division
SUBJECT Status Report on Completion of Comprehensive Planning Grant
No. CPA-KS-07-16-1004.

There are three phases of Schedule of Services in the economic forecasting contract identified above. According to Dr. Weed the degree of completion of these phases are as follows:

- Phase I - Collection of secondary data and initial interviews with firms in the pertinent industries. This phase is 70% complete and is now being written.
- Phase 2 - Survey of individuals drawn from data obtained in Phase I. The survey will be conducted by mail and will involve approximately 5,000 questionnaires in four sample sets. This phase is 66% complete.
- Phase 3 - Analysis to include the refinement, classification, and analysis of the data to provide the desired end results. This phase is 25% complete.

For the total contract approximately 46% of the contract work remains to be performed, most of which is analysis. It seems reasonable that the contract can be completed by May 30, 1973 since analysis composes the larger percentage of work to be completed. Since the contract was signed in September 29, 1972, the MAPD has received monthly status reports from November through February according to contract specifications.

A quarterly requisition for payment was sent to the Purchasing Department on March 13th. The delay (3 months) was partially explained by Mr. Sauderman's two week absence from the Office. No billing is done by the Center for Business and Economic Research.

RLM:jl

COPY



WICHITA STATE UNIVERSITY

WICHITA, KANSAS 67208
PHONE 316/689-3220

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION
Center for Business and Economic Research

March 12, 1973

Mr. Robert A. Lakin
Director of Planning
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

Subject: Progress Report

Dear Mr. Lakin:

Enclosed is a progress report on the project conducted under Comprehensive Planning Grant Contract No. CPA-KS-07-16-1004. I have provided additional copies of the report for members of your staff who are directly involved in the study. These copies will be sent directly to the respective staff personnel.

Sincerely,

Norman L. Weed
Norman L. Weed
Project Director

NLW:mb

Enc.

cc Willard L. Stockwell
Bob Hawbaker
Fred Sudermann



PROGRESS REPORT

TO: Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM: The Center for Business and Economic Research, Wichita State
University
SUBJECT: Progress report on project conducted under Comprehensive
Planning Grant Contract No. CPA-KS-07-16-1004

GROUP III - SAMPLE

The Group III survey material has been processed and mailed. The Group III sample set involved residents of Sedgwick County (non-migrants) with unknown job or work affiliation. Approximately 1,000 individuals and/or family units were included in the survey. A copy of the questionnaire is attached to this report.

One of the objectives of this survey was to obtain some indication of the impact of declines in business activity on non-aerospace related persons. Thus, of particular interest in this phase of the survey will be the number of persons laid off from non-aerospace jobs, the number of persons required to take reductions in income to maintain a job (either aerospace or non-aerospace), and the income changes that resulted from such actions.

The questionnaire has been coded and data are being recorded as returns are available.

GROUP I - SAMPLE

The Group I survey, out-migrants, is now nearly complete. Few, if any, returns are expected beyond this point in time. Returns are being coded and tabulated for key-punching operations.



PROGRESS REPORT

(continued)

ANALYSIS

The beginning phases of analysis of secondary data are now underway. The procedures being applied at present are designed to explore and illustrate the extent of changes in economic activity in Sedgwick County during the study period. Key variables are being isolated so that trends in their movement may be traced during the period. Since these variables are in a raw state, they must also be adjusted for price changes and seasonal patterns as much as possible.

Group III: General

ECONOMIC EFFECT DUE TO A DECLINE IN THE AVIATION INDUSTRY

Please circle the appropriate response where multiple choices are indicated.

I. Marital Status

1. married
2. single
3. widowed
4. divorced
5. separated

II. Number of dependents (a dependent is a person that resides in your household and for whom you furnish at least half the financial support - please include your spouse as a dependent): _____

III. Were you employed in the aviation industry, located in Sedgwick County, Kansas, during the period of June 1st, 1969, through June 30th, 1971?

1. yes
2. no

IV. If not in the aviation industry, with what firm were you employed?

V. Were you laid off during the period of June, 1969, through June, 1971?

1. yes
2. no

Note: If your response to question V is yes, please answer questions VI and VII. If your response to question V is no, please go to question VIII and answer questions VIII through X.

VI. If you were laid off during the period in question, what was your means of support during your layoff period?

1. unemployment compensation
2. spouse working
3. part-time job
4. borrowed money
5. other (please specify) _____

VII. This question seeks income information which will be used to determine the effect of the decline in activity in the aviation industry on the Sedgwick County economy. All responses will be kept strictly confidential. Individual data will not appear in the report.

All income will be referred to as gross income. Gross income is that total, yearly income on which Federal Income taxes are paid. The following table covers three different periods: before June 1, 1969, between June 1, 1969,

and June 30, 1971, and after June 30, 1971. Each period has two subdivisions: gross, individual income and gross, family income. Gross, individual income is the income you alone earned and gross, family income is the total income of your immediate family. Please make a check in the appropriate box in each column.

Income	Before June 1, 1969		Between June 1, 1969 & June 30, 1971		After June 30, 1971	
	Gross	Gross	Gross	Gross	Gross	Gross
	Indi- vidual	Family	Indi- vidual	Family	Indi- vidual	Family
\$1,000-\$2,999						
\$3,000-\$4,999						
\$5,000-\$6,999						
\$7,000-\$8,999						
\$9,000-\$10,999						
\$11,000-\$12,999						
\$13,000-\$14,999						
\$15,000-\$16,999						
\$17,000-\$18,999						
\$19,000-up						

VIII. If you were not laid off, did you take a cut in pay in order to keep your job?

1. yes
2. no

IX. If you accepted a decrease in pay, approximately how much did it decrease your gross income per year?

1. \$0 to \$500
2. \$501 to \$1,000
3. \$1,000 to \$1,500
4. \$1,501 to \$2,000
5. \$2,001 to \$2,500
6. \$2,501 to \$3,000
7. \$3,001-up

X. If you were not laid off and you accepted a cut in pay, did you take a second job to maintain your normal level of living?

1. yes
2. no

INVOICE

WICHITA STATE UNIVERSITY
Office of Research and Sponsored Programs
WICHITA, KANSAS 67208

DEPARTMENT 0453-4131-50
INVOICE NO. 2739 AR
DATE March 9, 1973
CUSTOMER'S P. O. _____
WORK ORDER NO. _____

In Account With
Metropolitan Area Planning Department
104 South Main Street
Wichita, Kansas 67202
ATTN: Robert A. Lakin, Director of Planning

Expenses incurred for the period September 1, 1972 through February 28, 1973, in connection with the "Study of The Economic Impact of a Reduction in Aerospace Employment in Sedgwick County, Kansas." Dr. Norman L. Weed, Project Director.

Graduate Assistants		
Richard Reiss-Sept. \$30; Oct-Feb. @ \$300	\$1,530.00	
Lyle Tracy-Sept. \$120; Oct-Feb. \$300	<u>1,620.00</u>	\$3,150.00

Clerical		
E. Beck (Jan. 25)	9.60	
S. Becker (Jan. 25)	3.20	
S. Buss (Jan. 25)	9.60	
C. Chalker (Jan. 25)	11.20	
F. Sansing (Jan. 25)	4.80	
T. Tomlinson (Jan. 25)	12.93	
Susan Shone (Feb.)	<u>41.42</u>	92.75
Total Personnel		<u>\$3,242.75</u>

Telephone (Long Distance)	5.45
Duplicating	63.33
Computer Services	34.08
Office Supplies	22.84
Research Supplies	<u>91.45</u>

Total Direct Costs	\$3,459.90
Indirect Costs @ 10%	<u>345.99</u>
	<u>\$3,805.89</u>

with holding 10% as per contract
Pay 345.99
3459.90

Frederick Sudermann
Frederick Sudermann, Director

OK - Bob Hawbaker
3-19-73
(orig to purchasing)

Center for Business & Economic Research

February 12, 1973

Mr. Robert A. Lakin
Director of Planning
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

Subject: Progress Report

Dear Mr. Lakin:

Enclosed is a progress report on the project conducted under Comprehensive Planning Grant Contract No. CPA-KS-07-16-1004. I have provided additional copies of the report for members of your staff who are directly involved in the study. These copies will be sent directly to the respective staff personnel.

Sincerely,

Norman L. Weed
Project Director

NLW:mb

Enc.

cc Willard L. Stockwell
Bob Hamaker
Fred Sudermann



PROGRESS REPORT

TO: Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM: The Center for Business and Economic Research, Wichita State
University
SUBJECT: Progress report on project conducted under Comprehensive
Planning Grant Contract No. CPA-KS-07-16-1004

GROUP I - SAMPLE

Group I sample returns are now being received and processed. The results obtained thus far indicate no unanticipated problems on the part of respondents in handling the questionnaire. As expected, some respondents have refused to divulge complete income information. Other respondents, however, have provided more detail in reference to income levels during the lay-off period than originally requested.

GROUP II - QUESTIONNAIRE AND SAMPLING PROCEDURE

Group II individuals are those persons who are residents of Sedgwick County with previously undetermined work affiliation. Questionnaires for this group will request data similar to that requested from Group I with the exception of migration information. The questionnaires are being reproduced at this time.

The sampling procedure for Group II is based on stratified random sampling techniques. The base unit for stratification of the county is the postal zip code area. Proportionate samples will be randomly drawn from each zip code area. The proportion of the total sample to be drawn from any zip code stratum is determined in relation to the proportion of total working age population in that stratum and the number of family units. The questionnaires will be coded on the bases of these strata.



WICHITA STATE UNIVERSITY

WICHITA, KANSAS 67208
PHONE 316/685-9161

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION
Center for Business & Economic Research

January 10, 1972

Mr. Robert A. Lakin
Director of Planning
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

Subject: Progress Report

Dear Mr. Lakin:

Enclosed is a progress report on the project conducted under Comprehensive Planning Grant Contract No. CPA-KS-07-16-1004. I have provided additional copies of the report for members of your staff who are directly involved in the study. These copies will be sent directly to the respective staff personnel.

Sincerely,

Norman L. Weed
Norman L. Weed
Project Director

NLW:mb

Encs. 3

cc Willard L. Stockwell
Bob Hawbaker
Fred Sudermann



PROGRESS REPORT

TO: Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM: The Center for Business and Economic Research, Wichita State
University
SUBJECT: Progress report on project conducted under Comprehensive
Planning Grant Contract No. CPA-KS-07-16-1004

QUESTIONNAIRE AND SAMPLING PROCEDURE

A draft copy of the Group I questionnaire is enclosed with this report in response to your request. Group I individuals are those persons identified as out-migrants from Sedgwick County but work affiliation has not been identified.

A sample of 2,000 persons has been drawn from total Group I individuals of approximately 6,500. The procedure utilized was one of systematic sampling. The listings were first screened to eliminate unusable or unsuitable items such as business firms, incomplete data items, and duplications. The sample set was then arrayed in alphabetical order. The starting point for pulling the sample was randomized and every third name from the starting point was included in the sample.

DATA

Also enclosed is a copy of the trend equation and plot used in smoothing the sales tax data to be used for estimation of changes in retail sales. The raw data are monthly sales tax reportings with a one month backward adjustment to coordinate collections with the appropriate monthly sales period.

Estimates of net migration by year for the study period are

PROGRESS REPORT

(continued)

attached. These estimates were derived by expanding the population base for natural increase, births over deaths, and then netting out the remaining population change for the year. Estimates of in-migration are being developed so that all components of annual population - births, deaths, in-migration, and out-migration - may be isolated.

Group I: Out-migrants

ECONOMIC EFFECT DUE TO A DECLINE IN THE AVIATION INDUSTRY

Please circle the appropriate response where multiple choices are indicated.

I. Marital Status

1. married
2. single
3. widowed
4. divorced
5. separated

II. Number of dependents (a dependent is a person that resides in your household and for whom you furnish at least half the financial support - please include your spouse as a dependent): _____

III. Was your job in Sedgwick County affiliated with the aviation industry?

1. yes
2. no

IV. If not in the aviation industry, with what firm were you employed?

V. (a) Were you laid off from your employment in Sedgwick County?

1. yes
2. no

(b) If you were laid off, was it due to a decline in activity in the aviation industry?

1. yes
2. no

Note: If you were not laid off, please go to question eleven (XI).

VI. When were you laid off? Month _____ Year _____

VII. After you were laid off, when did you leave Sedgwick County? Month _____ Year _____

VIII. This question seeks income information which will be used to determine the effect of the decline in activity in the aviation industry on the Sedgwick County economy. All responses will be kept strictly confidential and only used to compute a total figure. This total figure is the only one that will be included in our report.

All income will be referred to as gross income. Gross income is that total, yearly income on which Federal Income taxes are paid. The following table covers three different periods: before lay off, during lay off, and after return to a permanent job. Each of these periods has two subdivisions: gross, individual income and gross, family income. Gross, individual income is the

income you alone earned and gross, family income is the total income of your immediate family. Please make a check in the appropriate box in each column.

Income	Before Layoff		During Layoff		After Return to Permanent Job	
	Gross Indi-vidual	Gross Family	Gross Indi-vidual	Gross Family	Gross Indi-vidual	Gross Family
\$1,000-\$2,999						
\$3,000-\$4,999						
\$5,000-\$6,999						
\$7,000-\$8,999						
\$9,000-\$10,999						
\$11,000-\$12,999						
\$13,000-\$14,999						
\$15,000-\$16,999						
\$17,000-\$18,999						
\$19,000-up						

IX. What was your means of support during your layoff period?

1. unemployment compensation
2. spouse working
3. part-time job
4. savings
5. borrowed money
6. other (please specify) _____

X. Is your present job connected with the aviation industry?

1. yes
2. no

XI. What was your reason for moving out of Sedgwick County?

1. could not find a job at comparable income
2. could not find a job using the same or similar work skills
3. transferred by company
4. accepted a job with a different company
5. other (please specify) _____

XII. Before your move, which of the following applied to you?

1. owned your own home
2. rented a house, apartment, or mobile home
3. other (please specify) _____

POLYREGR - POLYNOMIAL REGRESSION

HEALTH SCIENCES COMPUTING FACILITY, UCLA - VERSION OF NOVEMBER 24, 1969

MODIFIED FOR TEXAS TECH COMPUTER SERVICES . JANUARY 27, 1969

MODIFIED FOR WICHITA STATE UNIVERSITY AUGUST 23, 1971

PROBLEM NO.
 SAMPLE SIZE 25
 NO. OF CDS. 1
 THE VARIABLE FORMAT IS (F3.0,4X,F4.0)

REGRESSION - ONE INDEPENDENT VARIABLE

XMEAN..... 13.00000
 YMEAN..... 1927.40000

INTERCEPT (A VALUE)... 1665.88
 REG. COEFFICIENT..... 20.1169
 STD. ERROR OF REG. COEF. 9.88288

CORRELATION COEF..... 0.39070

ANALYSIS OF VARIANCE FOR SIMPLE LINEAR REGRESSION

SOURCE OF VARIATION	DEGREE OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F VALUE
DUE TO REGRESSION.....	1	526106.81250	526106.81250	4.14338
DEVIATION ABOUT REGRESSION....	23	2920431.00000	126975.25000	
TOTAL.....	24	3446537.00000		

POLYNOMIAL REGRESSION OF DEGREE 2

INTERCEPT (A VALUE)... 1863.12

REGRESSION COEFFICIENTS
 -23.7140 1.68580

STD. ERROR OF REG. COEF.
 40.9487 1.52833

ANALYSIS OF VARIANCE FOR 2 DEGREE POLYNOMIAL

SOURCE OF VARIATION	DEGREE OF FREEDOM	SUM OF SQUARES	MEAN SQUARE	F VALUE
DUE TO REGRESSION.....	2	679050.81250	339525.37500	2.69904

DEVIATION ABOUT REGRESSION....	22	2767487.00000	125794.81250
TOTAL.....	24	3446537.00000	

FINAL ANALYSIS OF VARIANCE FOR 2 DEGREE POLYNOMIAL

SOURCE OF VARIATION	DEGREE OF FREEDOM	SUM OF SQUARES	MEAN SQUARE
LINEAR TERM.....	1	526106.81250	526106.81250
QUADRATIC TERM.....	1	152944.00000	152944.00000
DEVIATION ABOUT REGRESSION....	22	2767487.00000	125794.81250
TOTAL.....	24	3446537.00000	

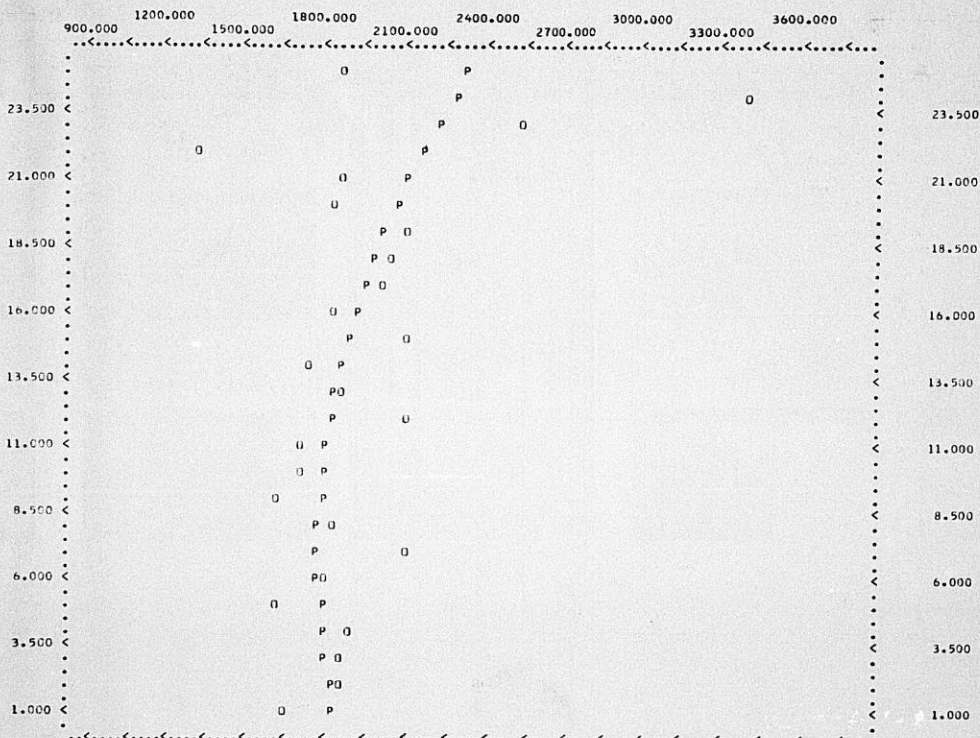
TABLE OF RESIDUALS

NO.	X VALUE	Y VALUE	Y PREDICTED	RESIDUAL
1	1.0000	1655.0000	1841.0906	-186.0906
2	2.0000	1865.0000	1822.4341	42.5659
3	3.0000	1863.0000	1807.1492	55.8508
4	4.0000	1895.0000	1795.2356	99.7644
5	5.0000	1614.0000	1786.6938	-172.6938
6	6.0000	1802.0000	1781.5237	20.4763
7	7.0000	2097.0000	1779.7753	317.2247
8	8.0000	1826.0000	1781.2983	44.7017
9	9.0000	1613.0000	1786.2429	-173.2429
10	10.0000	1711.0000	1794.5593	-83.5593
11	11.0000	1706.0000	1806.2473	-100.2473
12	12.0000	2099.0000	1821.3066	277.6934
13	13.0000	1865.0000	1839.7390	25.2670
14	14.0000	1726.0000	1861.5405	-135.5405
15	15.0000	2088.0000	1886.7151	201.2849
16	16.0000	1831.0000	1915.2610	-84.2610
17	17.0000	1999.0000	1947.1785	51.8215
18	18.0000	2066.0000	1997.4575	68.5425
19	19.0000	2109.0000	2021.1284	87.8716
20	20.0000	1840.0000	2063.1606	-223.1606
21	21.0000	1872.0000	2108.3649	-236.3649
22	22.0000	1311.0000	2157.3403	-846.3403
23	23.0000	2513.0000	2209.4875	303.5125
24	24.0000	3382.0000	2265.0063	1116.9937
25	25.0000	1857.0000	2323.8970	-466.8970

GRAPH CODES

O=OBSERVED Y
P=PREDICTED Y
#OBSERVED-PREDICTED

PLOT OF OBSERVED AND PREDICTED VALUES.



GRAPH SCALE EXTENDS FROM 840.0000 TO 3840.0000

1969 - Births (Jan.-Dec.)	6,966
1969 - Deaths (Jan.-Dec.)	<u>2,621</u>
Natural Increase	4,375

1969 - Population	354,223
1969 - Natural Increase	<u>4,375</u>
1969 - Total Population	358,598
1970 - Net Population	<u>350,694</u>
Net Decrease in Population	7,904

1970 - Births (Jan.-Dec.)	6,672
1970 - Deaths (Jan.-Dec.)	<u>2,501</u>
Natural Increase	4,171

1970 - Population	350,694
1970 - Natural Increase	<u>4,171</u>
1970 - Total Population	354,865
1971 - Population	<u>331,128</u>
Net Decrease in Population	23,737

1971 - Births (Jan.-Dec.)	5,834
1971 - Deaths (Jan.-Dec.)	<u>2,601</u>
Natural Increase	3,233

1971 - Population	331,128
1971 - Natural Increase	<u>3,233</u>
1971 - Total Population	334,361
1972 - Net Population	<u>333,771</u>
Net Decrease in Population	590

1972 - Births (Jan.-Oct. - Nov. and Dec. not known by Sedgwick County Community Health Department)	4,683
1972 - Deaths (Jan.-Oct.)	<u>2,150</u>
Natural Increase	2,533



WICHITA STATE UNIVERSITY

WICHITA, KANSAS 67208
PHONE 316/685-9161

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION

Center for Business & Economic Research (689-3236)

December 10, 1972



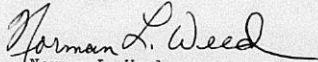
Mr. Robert A. Lakin
Director of Planning
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

Subject: Progress Report

Dear Mr. Lakin:

Enclosed is a progress report on the project conducted under Comprehensive Planning Grant Contract No. CPA-KS-07-16-1004. I have provided additional copies of the report for members of your staff who are directly involved in the study. These copies will be sent directly to the respective staff personnel.

Sincerely,


Norman L. Weed
Project Director

NLW:mb

Enc.

cc Willard L. Stockwell
Bob Hawbaker
Fred Sudermann

PROGRESS REPORT

TO: Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM: The Center for Business and Economic Research, Wichita State
University
SUBJECT: Progress report on project conducted under Comprehensive
Planning Grant Contract No. CPA-KS-07-16-1004

PHASE I

Project activities have continued in three areas of Phase I: data collection, questionnaire construction, and isolation of out-migrants.

Secondary data series are nearly complete but must be edited and adjusted to provide comparability. Non-comparable series result from differences in definitions as applied by various data collection agencies.

The first of the series of questionnaires has been structured. This questionnaire will be for the sample of out-migrants from the county.

The sample base for the out-migration survey has been determined. Approximately 6,500 migrants have been isolated and new location addresses identified.



WICHITA STATE UNIVERSITY

WICHITA, KANSAS 67208
PHONE 316/685-9161

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION
Center for Business & Economic Research (689-3236)

November 16, 1972

Mr. Robert A. Lakin
Director of Planning
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

Subject: Progress report.

Dear Mr. Lakin:

Enclosed is a progress report on the project conducted under Comprehensive Planning Grant Contract No. CPA-KS-07-16-1004. I have provided additional copies of the report for members of your staff who are directly involved in the study. These copies will be sent directly to the respective staff personnel.

Sincerely,

Norman L. Weed
Norman L. Weed
Project Director

NLW:mb

Enc.

cc Willard L. Stockwell
Bob Hawbaker
Fred Sudermann



PROGRESS REPORT

TO: Wichita-Sedgwick County Metropolitan Area Planning Commission
FROM: Center for Business and Economic Research, Wichita State University
SUBJECT: Progress Report on project conducted under Comprehensive Planning
Grant Contract No. CPA-KS-07-16-1004

1. Personnel

Upon final approval of the grant contract, personnel were selected to fill the budgeted positions of research associates. The recruitment period was necessarily brief but all applicants were given consideration under the terms of the contract. Personnel now actively engaged on the project are as follows:

Norman L. Weed, Director
Lyle A. Tracy, Research Associate
Richard Reiss, Research Associate
Ron Watson, Programmer

The operational office for the project is Room 337, Clinton Hall, Wichita State University. The telephone number for contact purposes is 689-3236.

2. Phase I, Data Collection

Phase I activities in the project were designed to provide data for two purposes. The first is to collect the necessary secondary data relevant to the project and covering the time period under investigation. The second purpose was to provide the necessary bases for the survey which constitutes Phase II of the project.

Immediate activities of the project personnel were concerned with the first purpose stated above. Secondary data are needed both as an input into

the estimates to be derived and as a potential check against the accuracy of certain estimates. Examples of data series under collection are as follows:

Employment Data

Monthly employment by industrial classification
Monthly unemployment
Accession rates by industrial classification
Separation rates by industrial classification

Migration Data

Out-migration estimates for the period

Retail Activities

Estimated Retail Sales by month
Estimated Selected Services Sales for the period

3. Phase I, Survey Preparation

The first steps in preparation for the survey have also been undertaken. The material for the questionnaire is in the process of being determined and questions formulated. The questionnaire must, of course, be highly edited and pretested before the survey.

The basic material for two of the sample sets in the survey has been acquired, although it was not in a directly usable form. This material is being sorted and the desired subset of names and addresses for the survey is being structured.

WICHITA—SEDGWICK COUNTY



METROPOLITAN AREA PLANNING
COMMISSION

262.0611 — AREA CODE 316
CITY BUILDING ANNEX
104 S. MAIN ST.
WICHITA, KANSAS 67202

September 29, 1972

Dr. Norman Weed
Center for Business and Economic Research
Wichita State University
Wichita, Kansas 67208

Dear Dr. Weed,

I am pleased to inform you that the contract between the Metropolitan Area Planning Department and Wichita State University for economic forecasting has been approved and signed. You are authorized to begin work as specified on Monday, October 2, 1972. The contract specifies that all services required are to be completed within nine months after execution of the contract. The final report, therefore, is due in our office no later than Monday, July 2, 1973. Monthly reports of work completed, as specified in Paragraph 6 of the Contract, will be due on the tenth day of each month, beginning in November, 1972.

The Planning Department is looking forward to continued cooperation with the University in this research project. Please feel free to call on us if we can aid you in any way.

Sincerely,

Willard L. Stockwell
Chief Planner
Advance Plans Division

WLS:CRE:jl

Attachments

cc: Fred Sudermann, Wichita State University
Lyle Botkin, Auditing,
James Richmond, Purchasing Manager

WICHITA-SEDGWICK COUNTY
METROPOLITAN AREA PLANNING COMMISSION

CONTRACT FOR PERSONAL SERVICES
COMPREHENSIVE PLANNING ASSISTANCE PROJECT

THIS AGREEMENT, entered into as of this 28th day
of September, 1972, by and between WICHITA STATE UNIVERSITY
CENTER FOR BUSINESS AND ECONOMIC RESEARCH (herein called the "Con-
tractor") and WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING
COMMISSION (herein called the "Planning Agency"),

WITNESSETH THAT:

WHEREAS, the Planning Agency desires to engage the Con-
tractor to render certain technical or professional services
hereafter described in connection with an undertaking which is
expected to be partially financed under Section 701 of the Hous-
ing Act of 1954, as amended:

NOW, THEREFORE, the parties hereto do mutually agree as
follows:

1. Employment of Contractor

The Planning Agency hereby agrees to engage the Contractor
and the Contractor hereby agrees to perform personally
the services hereinafter set forth in connection with the
Project of the Planning Agency under Comprehensive Planning
Grant Contract No. CPA-KS-07-16-1004.

2. Area Covered

The Contractor shall perform all the necessary services provided under this Contract in connection with and respecting Sedgwick County, herein called the "planning area".

3. Scope of Services

The basic objective of this project is to provide auxiliary planning models that will be of particular use in the formulation of short-range projections pertaining to the social and economic characteristics of Sedgwick County. The particular questions to be approached in the project involve changes that will occur in the County during reductions of employment in aerospace activities. Changes in population, employment, income, skills, and other economic activities will occur in such a way as to leave the community in an economically and socially different position after the reduction. For purposes of forecasting, it is important to know the size, type, and relationship of the impact on each of the above variables. The contractor will provide data relevant to these questions and in a form suitable for use in a forecasting context. In the construction and provisions of such models, the contractor will perform the following services:

A. Provide Population Impact Measurements

The contractor will provide a measure of the impact on the City's population base of changes in employment in the dominant industry. The measurement will

include estimates of population out-migration brought about by decreases in aerospace production. The end product of this section of the scope of services will be a model of population change related to changes in the aerospace industry that can be integrated into or used with short-range population forecasts in the Wichita area.

B. Provide Employment and Income Impact Measurements

The contractor will provide estimates of the impact of changes in aerospace activity on employment levels and the income base of the Wichita area. Changes in employment will be measured in terms of the direct impact (aerospace employment) and the secondary impact (supplying industries employment). The concurrent loss of skills in the labor force brought about by out-migration of unemployed persons and the job shifting patterns of former aerospace workers who do not migrate from the area will also be investigated in providing an estimate of the impact on employment.

Losses in income flows resulting from the indicated changes in employment patterns will be investigated. Estimated income changes in current dollars will be provided to illustrate the direct and secondary impact, in monetary terms, on the economic base of the Wichita area.

C. Provide Estimates of the Impact of Income Loss on the Trade and Services Industries

To complete the analysis, the changes brought about in trade and service industries as a result of the indicated income losses will be estimated for the Wichita area. Such changes will be related to the shifts in employment of the aerospace industry to provide a mechanism which will facilitate future economic forecasting efforts.

The time period covered in the project will be all or part of the years 1969, 1970, and 1971. This period is concurrent with the major portion of the downward phase of the cycle of activity in the aerospace industry. All monetary data will be calculated in terms of "current" dollars.

D. Schedule of Services

PHASE 1 - Collection of Secondary Data and Personal interviews

Phase 1 will include the collection of secondary data and the initial interviews with firms in the pertinent industries.

PHASE 2 - Survey

Phase 2 will include the survey of individuals drawn from data obtained in Phase 1. The survey will be conducted by mail and will involve approximately 5,000 questionnaires in four sample sets.

PHASE 3 - Analysis

Phase 3 will include the refinement, classification, and analysis of the data to provide the desired end results.

E. Budget

<u>Item</u>	<u>Amount</u>	
	<u>Grant</u>	<u>W.S.U.</u>
Research Associates (2), 9 months @ \$300	\$ 5,400	
Research - Faculty, 1/4 time		\$3,500
Secretarial assistance, 1 month equivalent @ \$400	400	200
Clerical Assistance, 2 months equivalent @ \$100	200	
Computer time, card punching, and programming	2,000	500
Supplies, telephone, miscellaneous	500	
Reproduction - questionnaire and report	300	
Postage	300	
Indirect costs (Grant share @ 10% of grant costs excluding indirect)	<u>900</u>	<u>4,500</u>
Total Budget	<u>\$10,000</u>	<u>\$8,700</u>
Grant	\$10,000	
W.S.U.	<u>8,700</u>	
Total	<u>\$18,700</u>	

4. Personnel

- A. The contractor represents that he has, or will secure at his own expense, all personnel required in performing the services under this Contract. Such personnel shall not be employees of or have any contractual relationship with the Planning Agency. The Contractor shall utilize the services of Dr. Norman Weed to direct and supervise the work contained in the scope of services.

B. None of the work or services covered by this contract shall be subcontracted without the prior written approval of the Planning Agency.

5. Time of Performance

- A. The services of the Contractor are to commence on September 1, 1972 and shall be undertaken and completed in such sequence as to insure their expeditious completion in the light of the purposes of this Contract.
- B. All of the services required under this contract shall be completed within nine (9) months after the execution of the Contract.

6. Method of Payment

The Planning Agency will pay to the Contractor \$10,000.00 which shall constitute full and complete compensation for the Contractor's services hereunder. Such sum will be paid in the following manner, in every case, subject to the receipt of a requisition for payment from the Contractor: Payment each quarter based on the percentage of work completed as stated in the last monthly report less ten (10%) percent of each payment withheld for a final payment by the end of the contract period upon receipt of the final report.

It is expressly understood and agreed that in no event will the total compensation and reimbursement, if any, to be paid hereunder exceed the maximum sum of \$10,000 for all of the services required.

7. Termination of Contract for Cause

If, through any cause, the Contractor shall fail to fulfill in timely and proper manner his obligations under this contract, or if the Contractor shall violate any of the covenants, agreements, or stipulations of this Contract, the Planning Agency shall thereupon have the right to terminate this Contract by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least 5 days before the effective date of such termination. In that event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, and reports or other material prepared by the Contractor under this Contract shall, at the option of the Planning Agency, become its property, and the Contractor shall be entitled to receive just and equitable compensation for any satisfactory work completed on such documents and other materials.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Planning Agency for damages sustained by the Planning Agency by virtue of any breach of the Contract by the Contractor, and the Planning Agency may withhold any payments to the Contractor for the purpose of setoff until such time as the exact amount of damages due the Planning Agency from the Contractor is determined.

8. Termination for Convenience of Planning Agency

The Planning Agency may terminate this Contract at any time by giving written notice to the Contractor of such termination and specifying the effective date thereof, at least 15 days before the effective date of such termination. In that event, all finished or unfinished documents and other materials as described in Paragraph 7 above shall, at the option of the Planning Agency, become its property. If the Contract is terminated by the Planning Agency as provided herein, the Contractor will be paid an amount which bears the same ratio to the total compensation as the services actually performed bear to the total services of the Contractor covered by this Contract, less payments of compensation previously made: Provided, however, that if less than 60 percent of the services covered by this Contract have been performed upon the effective date of such termination, the Contractor shall be reimbursed (in addition to the above payment) for that portion of the actual out-of-pocket expenses (not otherwise reimbursed under this Contract) incurred by the Contractor during the Contract period which are directly attributable to the uncompleted portion of the services covered by this Contract. If this Contract is terminated due to the fault of the Contractor, Paragraph 7 hereof relative to termination shall apply.

9. Changes

The Planning Agency may, from time to time, require changes in the scope of the services of the Contractor to be performed hereunder. Such changes, including any increase or decrease in the amount of the Contractor's compensation, which are mutually agreed upon by and between the Planning Agency and the Contractor, shall be incorporated in written amendments to this Contract.

10. Equal Employment Opportunity

A. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex or national origin. The Contractor shall take affirmative action to ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, sex or national origin. Such actions shall include, but not be limited to the following: employment, upgrading, demotions, or transfers, recruitment or recruitment advertising; layoffs or terminations; rates of pay or other forms of compensation; selection for training including apprenticeship; and participation in recreational and educational activities. The Contractor agrees to post in conspicuous places available to employees and applicants for employment notices to be provided setting forth the provisions of this non-discrimination clause. The Contractor will in all solicitations or

advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin. The Contractor will cause the foregoing provisions to be inserted in all subcontracts for any work covered by this contract so that such provisions will be binding upon each subcontractor provided that the foregoing provisions shall not apply to contracts or subcontracts for standard commercial supplies or raw materials.

- B. The Contractor shall keep such records and submit reports concerning the racial and ethnic origin of applicants for employment and employees as the Secretary of the Department of Housing and Urban Development may require.
- C. The Contractor agrees to comply with such rules, regulations or guidelines as the Secretary may issue to implement these requirements.

11. Interest of Members of Planning Agency and Others

No officer, member, or employee of the Planning Agency and no members of its governing body, and no other public official of the governing body of the locality or localities in which the project is situated or being carried out who exercises any functions or responsibilities in the review or approval of the undertaking or carrying out of this pro-

ject, shall participate in any decision relating to this contract which affects his personal interest or the interest of any corporation, partnership, or association in which he is, directly or indirectly interested or have any personal or pecuniary interest, direct or indirect, in this Contract or the proceeds thereof.

12. Assignability

The Contractor shall not assign any interest in this Contract, and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of the Planning Agency thereto: Provided, however, that claims for money due or to become due to the contractor from the Planning Agency under this Contract may be assigned to a bank, trust company or other financial institution without such approval. Notice of any such assignment or transfer shall be furnished promptly to the Planning Agency.

13. Interest of contractor

The Contractor covenants that he presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of services required to be performed under this contract. The Contractor further covenants that in the performance of this Contract no person having any such interest shall be employed.

14. Findings Confidential

Any reports, information, data, etc., given to or prepared or assembled by the Contractor under this Contract which the Planning Agency requests to be kept as confidential shall not be made available to any individual or organization by the Contractor without the prior written approval of the Planning Agency.

15. Officials Not to Benefit

No members of or delegate to the Congress of the United States of America, and no Resident Commissioner, shall be admitted to any share or part hereof or to any benefit to arise herefrom.

16. Identification of Documents

All reports, maps, and other documents completed as a part of this Contract, other than documents exclusively for internal use within the Planning Agency, shall carry the following notation on the front cover or a title page, (or in the case of maps, in the same block) containing the name of the Planning Agency:

The preparation of this report, map, document, etc., was financed in part through a Comprehensive Planning Grant from the Department of Housing and Urban Development, under the provisions of Section 701 of the Housing Act of 1954, as amended, together with the date (month and year) the document was prepared and the name of the municipality, metropolitan area, or other planning area concerned.

17. All data, field data collection and interview forms, a copy of all computer output, computer source programs, full documentation for computer programs, and machine readable source data shall become the property of the Planning Agency at the completion or termination of the Contract.

18. Publication, reproduction and Use of Materials

No material produced in whole or in part under this Contract shall be subject to copyright in the United States or in any other country. The Planning Agency and HUD shall have unrestricted authority to publish, disclose, distribute and otherwise use, in whole or in part, any reports, data, or other materials prepared under this Contract.

19. Audits and Inspections

At any time during normal business hours and as often as the Planning Agency, HUD and/or the Comptroller General of the United States may deem necessary, there shall be made available to the Planning Agency, HUD and/or representatives of the Comptroller General for examination all of its records with respect to all matters covered by this contract and will permit the Planning Agency, HUD and/or representatives of the Comptroller General to audit, examine and make all contracts, invoices, materials, payrolls, records of personnel, conditions of employment

and other data relating to all matters covered by this Contract.

IN WITNESS WHEREOF the Planning Agency and the Contractor have executed this agreement as of the date first above written.

WICHITA-SEDGWICK COUNTY METRO-POLITAN AREA PLANNING COMMISSION

By *Alvin J. Hennessy*
Alvin J. Hennessy
Chairman

ATTEST:

Robert A. Lakin
Robert A. Lakin, Secretary
(SEAL)

WICHITA STATE UNIVERSITY
CENTER FOR BUSINESS AND
ECONOMIC RESEARCH

By *Frederick Sudermann*
Frederick Sudermann

Approved as to form:

John Dekker
John Dekker, Director of Law *et al*

R E S O L U T I O N

A RESOLUTION OF THE BOARD OF COUNTY COMMISSIONERS
OF SEDGWICK COUNTY, KANSAS, AUTHORIZING THE EX-
PENDITURE OF URBAN PLANNING FUNDS

WHEREAS, the Wichita-Sedgwick County Metropolitan
Area Planning Commission is a legal entity and possesses the
powers and authority to expend Federal and other funds;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY
COMMISSIONERS OF SEDGWICK COUNTY, KANSAS:

SECTION I. That the Board of Commissioners of Sedg-
wick County, Kansas concur with the action of the Wichita-
Sedgwick County Metropolitan Area Planning Commission and is
hereby authorized to execute and enter into a contractual agree-
ment with Wichita State University, Center for Business and
Economic Research, Wichita, Kansas, for the purpose of conduct-
ing economic forecasting for Wichita and Sedgwick County, Kansas,
for economic analysis and planning purposes; and that agreement
shall not exceed a total of Ten Thousand (\$10,000) Dollars in
amount.

SECTION II. Said funds for contractual agreement are
available under the Urban Planning Assistance Program, Project
Number CPA-KS-07-16-1004.

ADOPTED BY THE BOARD OF COUNTY COMMISSIONERS OF SEDG-
WICK COUNTY, KANSAS, this 27th day of September, 1972, and
after due consideration of all members being present and voting
as follows:

Earl Rush

Elmer Peters

Tom Scott

Earl Rush
Elmer Peters
Tom Scott

DATED AT WICHITA, KANSAS, this 27th day of September,

1972.

BOARD OF COUNTY COMMISSIONERS
OF SEDGWICK COUNTY, KANSAS

Carl E. Rush, Chairman
Earl Rush

Elmer Peters, Commissioner
Elmer Peters

Tom Scott, Commissioner
Tom Scott

ATTEST:

Marie Warden, Sharon Blasing
Marie Warden, County Clerk



R E S O L U T I O N

A RESOLUTION AUTHORIZING THE EXPENDITURE OF
URBAN PLANNING FUNDS

WHEREAS, the Wichita-Sedgwick County Metropolitan Area Planning Commission is a legal entity and possesses the powers and authority to expend Federal and other funds;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF CITY COMMISSIONERS OF THE CITY OF WICHITA, KANSAS:

SECTION I. That the Board of Commissioners of the City of Wichita concur in the action of the Wichita-Sedgwick County Metropolitan Area Planning Commission in entering into a contractual arrangement with Wichita State University, Center for Business and Economic Research, Wichita, Kansas, for the purpose of conducting economic forecasting for Wichita and Sedgwick County, Kansas, for economic analysis and planning purposes; and that agreement shall not exceed Ten Thousand (\$10,000) Dollars in amount.

SECTION II. That said funds are available under the Urban Planning Assistance Program Number CPA-KS-07-16-1004.

SECTION III. This Resolution shall be in full force and effect from and after its adoption.

PASSED AND APPROVED this 19th day of September, 1972.


Glenn J. Shanahan, Mayor

ATTEST


Ralph C. Eberly, City Clerk

(SEAL)

APPROVED AS TO FORM THIS SEP 19 1972


Director of Law

COMMISSIONERS PROCEEDINGS

14773

September 19, 1972

<p>RESOLUTION: Re. Urban Planning Funds for Economic Analysis</p>	<p>A resolution concurring in the expenditure of Urban Planning Funds for Economic Analysis, presented.</p> <p>The 1972-1973 Urban Planning Assistance Grant contains a component for conducting economic forecasting for Wichita and Sedgwick County.</p> <p>The contract, which has been negotiated with the Wichita State University Center for Business and Economic Research, calls for developing short-range forecasts of the impact of employment in the dominant aerospace industry on Sedgwick County's population base employment level and induced effects on trade and service industries.</p> <p>This study will be based upon the revised Sedgwick County Input-Output Tables, expanded under last year's 701 Economic Analysis Component.</p> <p>The contract is in the amount of \$10,000, as specified in the HUD grant. As local matching funds, the Planning Department will provide staff assistance and monitoring.</p> <p>The Planning Commission approved the contract with Wichita State University at the meeting of September 8, 1972, and has requested the concurrence of the City Commission in this action. City Manager recommended adoption of a resolution concurring in the MAPC action.</p> <p>Greene moved that the resolution be adopted. Motion carried unanimously.</p> <p style="text-align: center;">RESOLUTION</p>
<p>Resolution adopted</p> <p>INDUSTRIAL REVENUE BONDS: Request for Ltr. of intent Art Roll Mfg. Inc. Pawnee and Meridian</p>	<p>A resolution authorizing the expenditure of Urban Planning Funds, road. Greene moved that the resolution be adopted. Motion carried unanimously. Yeas: Greene, Porter, Stevens, Donnell.</p> <p>Request for Letter of Intent for Industrial Revenue Bonds for Art Roll Manufacturing, Inc., presented.</p> <p>Art Roll Manufacturing, Inc., has requested the issuance of industrial revenue bonds of the City of Wichita in the amount of \$350,000 for the purpose of constructing a complete new boat trailer manufacturing facility to be located near the southwest corner of Pawnee and Meridian.</p> <p>This facility, to be located on approximately ten acres, will include a one-story, 33,000 square foot, multi-purpose building with air conditioned finished offices and large fabrication and assembly areas. Capital equipment with an asset life span equal to the term of the lease will include a 12-foot shear, a 12-foot brake, a paint booth and oven, and overhead handling equipment. This new facility will create approximately 30 new jobs within the next three years.</p>

SECTION III

7. A RESOLUTION CONCURREN IN THE EXPENDITURE OF URBAN PLANNING FUNDS FOR ECONOMIC ANALYSIS.

The 1972-1973 Urban Planning Assistance Grant contains a component for conducting economic forecasting for Wichita and Sedgwick County.

The contract, which has been negotiated with the Wichita State University Center for Business and Economic Research, calls for developing short-range forecasts of the impact of employment in the dominant aerospace industry on Sedgwick County's population base employment level and induced effects on trade and service industries.

This study will be based upon the revised Sedgwick County Input-Output Tables, expanded under last year's 701 Economic Analysis Component.

The contract is in the amount of \$10,000, as specified in the HUD grant. As local matching funds, the Planning Department will provide staff assistance and monitoring.

The Planning Commission approved the contract with Wichita State University at the meeting of September 8, 1972 and has requested the concurrence of the City Commission in this action. City Manager recommends adoption of a resolution concurring in the MAPC action.

ACTION: Adopt the resolution.

8. REQUEST FOR LETTER OF INTENT FOR INDUSTRIAL REVENUE BONDS FOR ART ROLL MANUFACTURING, INC.

Art Roll Manufacturing, Inc., has requested the issuance of industrial revenue bonds of the City of Wichita in the amount of \$350,000 for the purpose of constructing a complete new boat trailer manufacturing facility to be located near the southwest corner of Pawnee and Meridian.

This facility, to be located on approximately ten acres, will include a one-story, 33,000 square foot, multi-purpose building with air-conditioned finished offices and large fabrication and assembly areas. Capital equipment with an asset life span equal to the term of the lease will include a 12-foot shear, a 12-foot brake, a paint booth and oven, and overhead handling equipment. This new facility will create approximately 30 new jobs within the next three years.

Mid-Continent Municipal Investments, Inc., has indicated in this proposal that it would purchase the bonds which would be issued as a result of this project.

Director of Administration recommends and the City Manager concurs that the Board of City Commissioners issue a letter of intent which would include the following conditions:

WICHITA-SEDGWICK COUNTY

DATE

August 31, 1972

METROPOLITAN AREA PLANNING DEPARTMENT

TO Board of City Commissioners
FROM Robert A. Lakin, Director of Planning
SUBJECT Wichita-Sedgwick County Economic Study Funded by HUD

The 1972-1973 Urban Planning Assistance Grant contains a component for conducting economic forecasting for Wichita and Sedgwick County. The contract, which has been negotiated with Wichita State University's Center for Business and Economic Research, calls for developing short-range forecasts of the impact of employment in the dominant aerospace industry on Sedgwick County's population base, employment level, and induced effects on trade and service industries.

This study will be based upon the revised Sedgwick County Input-Output Tables, expanded under last year's 701 Economic Analysis component.

The contract is in the amount of \$10,000, as specified in the HUD grant. As local matching funds, MAPD will provide staff assistance and monitoring.

The Metropolitan Area Planning Commission considered the contract with Wichita State University at their regular meeting on Thursday, September 8, 1972. Their recommendation will be provided at the City Commission Meeting.

Attached for your consideration is a Resolution concurring in the decision of the Planning Commission.

RAL:CRH:jl

Attachments

COPY

WICHITA-SEDGWICK COUNTY

DATE
August 31, 1972

METROPOLITAN AREA PLANNING DEPARTMENT

TO Board of County Commissioners
FROM Robert A. Lakin, Director of Planning *RL*
SUBJECT Wichita-Sedgwick County Economic Study Funded by HUD

The 1972-1973 Urban Planning Assistance Grant contains a component for conducting economic forecasting for Wichita and Sedgwick County. The contract, which has been negotiated with Wichita State University's Center for Business and Economic Research, calls for developing short-range forecasts of the impact of employment in the dominant aerospace industry on Sedgwick County's population base, employment level, and induced effects on trade and service industries.

This study will be based upon the revised Sedgwick County Input-Output Tables, expanded under last year's 701 Economic Analysis component.

The contract is in the amount of \$10,000, as specified in the HUD grant. As local matching funds, MAPD will provide staff assistance and monitoring.

The Metropolitan Area Planning Commission considered the contract with Wichita State University at their regular meeting on Thursday, September 8, 1972. Their recommendation is attached.

Attached for your consideration is a Resolution concurring in the decision of the Planning Commission.

RAL:CRH:jl

Attachments

cc: Marie Warden, County Clerk

BOARD OF SEDGWICK COUNTY COMMISSIONERS
PROCEEDINGS

Regular Meeting
September 27, 1972

Mr. Peters stated that he felt it important that the county have a capital improvement program. He stated that he did not think it possible or feasible due to the tax lid to complete all the projects outlined. He stated he felt this was a step forward and a needed guide. He also stated he felt we needed a similiar plan from the state transportation department.

Mr. Lakin stated he agreed with Mr. Peters that we needed a plan from the state. He stated he realized the program was sizable but the tax lid had been taken into consideration regarding the financing of the projects.

Mr. Scott stated that several years earlier they had tried to set up a capital improvement program but had failed. He further stated that the county needed such a program.

Mr. Peters moved to adopt the concept of the capital improvement program.

Mr. Scott seconded the motion. He asked if it was on a year to year basis.

Mr. Lakin stated that it was.

Mr. Scott asked if additions could be made.

Mr. Lakin stated that they could.

The motion carried unanimously.

ECONOMIC
STUDY

Mr. Lakin asked for a resolution concurring with the action of MAPC approving a contract with Wichita State's Department of Economics in the amount of \$10,000 for further analysis on economic forecasting.

Mr. Peters moved for approval.

Mr. Scott seconded the motion.

The motion carried unanimously.

PPTS. TO
HEALTH BD.

Mr. Rush stated that it was necessary for the Commissioners to make their appointments to the Health Board.

Mr. Scott stated that he wished to appoint Dr. Thomas Morrow.

Mr. Peters stated that he wished to appoint Mrs. Lois Funderberg.

Mr. Rush stated that he wished to appoint Schuyler Crawford.

Elmer
Fox
&
Company

Certified Public Accountants
900 Vickers-KSB&T Building/Wichita, Kansas 67202/(316) 265-3231

September 1, 1972

Board of County Commissioners
Sedgwick County Courthouse
Wichita, Kansas 67203

Re: Proposal for Research and
Analysis of Economic Activity
in Sedgwick County Submitted
by Center for Business and
Economic Research of Wichita
State University

Gentlemen:

During 1971 the Center for Business and Economic Research of Wichita State University contracted with the Metropolitan Area Planning Department to update, expand and refine the Sedgwick County input-output tables. The purpose of these input-output tables is to provide a vehicle for economic analysis and forecasting utilizing mathematical concepts and computers.

The Metropolitan Area Planning Department now wishes to enter into another contract with the Center for Business and Economic Research. The basic objective of the new contract is to use the input-output model to provide auxiliary planning models to be used in the formulation of short range projections pertaining to the social and economic characteristics of Sedgwick County, particularly with reference to the effect of reductions in aerospace activities.

The total cost for this project is \$18,700. However, the contractual amount to be committed for by MAPD is \$10,000, since Wichita State University will provide \$8,700 toward the cost of the project.

The study will be funded as a component of MAPD's 1972-1973 Comprehensive Planning Grant from the U.S. Department of Housing and Urban Development (HUD). Consequently, no additional cost will be incurred by Sedgwick County or MAPD.

Board of County Commissioners

- 2 -

September 1, 1972

I have reviewed the request for proposal and the proposed contract in depth. I concur in the need for the project utilizing the input-output model for which monies have previously been spent and I believe that the Wichita State University Center for Business and Economic Research should be granted the contract since they have the knowledge and talent to execute the contract in a satisfactory manner.

I recommend to the Board of County Commissioners that this contract for \$10,000 be approved.

Yours very truly,

Walter Kenney
Of Elmer Fox & Company

WKenney:kw

cc: Earl Rush
Elmer Peters
Tom Scott
Paul Pickler
Willard L. Stockwell

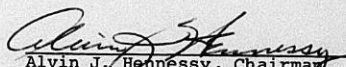
R E S O L U T I O N

A RESOLUTION RELATING TO THE AUTHORIZATION OF THE WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING DEPARTMENT TO EXECUTE AND ENTER INTO A CONTRACT WITH WICHITA STATE UNIVERSITY, CENTER FOR BUSINESS AND ECONOMIC RESEARCH.


BE IT RESOLVED BY THE WICHITA-SEDGWICK COUNTY METROPOLITAN AREA PLANNING COMMISSION:

SECTION I. The Chairman of the Wichita-Sedgwick County Metropolitan Area Planning Commission is hereby authorized to execute and enter into a contractual agreement with Wichita State University, Center for Business and Economic Research, for the purpose of conducting economic forecasting; and that agreement shall not exceed a total of Ten Thousand (\$10,000) Dollars in amount. The Vice Chairman is hereby empowered to sign all contracts and agreements necessary to execute the aforementioned contract.

ADOPTED this 14th day of September, 1972.


Alvin J. Hennessy, Chairman
Wichita-Sedgwick County Metropolitan Area Planning Commission

ATTEST:


Robert A. Lakin, Secretary
Wichita-Sedgwick County Metropolitan Area Planning Commission

(SEAL)

WICHITA-SEDGWICK COUNTY
METROPOLITAN AREA PLANNING COMMISSION

AGENDA

SEPTEMBER 14, 1972

The regular meeting of the Wichita-Sedgwick County Metropolitan Area Planning Commission will be held on Thursday, September 14, 1972, at 1:30 p.m. in Room 401 City Building Annex, 104 South Main, Wichita, Kansas. The following items will be considered:

1. Invocation by Rev. Benny J. Smith, Trinity Church of the Nazarene, 769 North Colorado 67212

2. Approval of Minutes of July 27, 1972 and August 10, 1972.

3. Case No. A-95-67 - Review requested by State Highway Commission for highway improvements for U.S.54 from Washington to Lulu and from Estelle to Clifton. (Memo enclosed to Planning Commissioners.)

4. Case No. A-95-72 - Review requested by the Office of Industrial Development re 701 application to conduct a cultural, recreational and tourism study. (Memo enclosed to Planning Commissioners.)

5. Case No. A-95-73 - Wichita Area Community Action Program, Inc. requests review of Youth Development Program. (Memo enclosed to Planning Commissioners.)

6. Contract with Wichita State University for expenditure of \$701 funds for Economic Forecasting. A contract with Wichita State University has been negotiated to perform economic forecasting for Sedgwick County. The contract is in the amount of \$10,000 and will be funded from Federal 701 funds. A resolution authorizing the Chairman of the Planning Commission to sign the contract is submitted for approval. (Memo enclosed to Planning Commissioners.)

7. Submission of a Capital Improvement Program for Sedgwick County. (Memo and preliminary draft enclosed to Planning Commissioners.)

RE: AGENDA ITEM NO. 6

WICHITA-SEDGWICK COUNTY

DATE

METROPOLITAN AREA PLANNING DEPARTMENT

August 31, 1972

TO Wichita-Sedgwick County Metropolitan
Area Planning Commission

FROM Willard L. Stockwell, ^{WLS} Chief Planner, Advance Plans Division

SUBJECT Resolution Authorizing Execution
of a Contract with Wichita State
University for Economic Forecasting

At the regular meeting on August 10, 1972, the Metropolitan Area Planning Commission authorized the Director of the Metropolitan Area Planning Department to negotiate a contract with Wichita State University for the Economic Analysis component of the 1971-1972 #701 Urban Planning Grant. This contract has been negotiated and reviewed by the MAPD staff. A copy of the contract is attached for your review.

The purpose of the study is to provide information that will be useful in the formulation of short-range projections pertaining to the social and economic characteristics of Sedgwick County. The Scope of Services outlines three objectives:

1. To provide a measure of the impact of changes in employment levels in the dominant aerospace industry on the population base;
2. To provide estimates of the impact of changes in employment levels of the dominant industry on employment levels in other sectors of the economy and on the income base of the Wichita area;
3. To provide estimates of the impact of income loss as the result of changes in employment level of the dominant industry on trade and service industries.

The study is designed to be carried out in three phases. Phase 1 will include the collection of data to supplement that collected during the generation of the Input-Output matrix under the 1971-1972 Economic Analysis component. Phase 2 will include a mail survey of approximately 5,000 questionnaires. Phase 3 will be comprised of the refinement, classification, and analysis of the data to provide the desired projections.

The total cost of the study to the Metropolitan Area Planning Department is \$10,000. Payments will be made quarterly based upon the percentage of work completed. Ten (10%) percent of each payment will be withheld for a final payment by the end of the contract period upon receipt of the final report.

Page 2 - Metropolitan Area Planning Commission
August 31, 1972

It is recommended that the Chairman of the Wichita-Sedgwick County Metropolitan Area Planning Commission be authorized to enter into and execute a contract with Wichita State University. The contract will be submitted to the Board of City Commissioners and to the Board of County Commissioners for concurrence.

WLS:CRH:ber

Attachment



WICHITA STATE UNIVERSITY

ATTACHMENT 2

WICHITA, KANSAS 67208
PHONE 316/685-9161

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION

July 21, 1972

Mr. Willard L. Stockwell
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

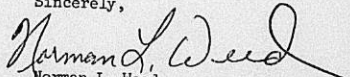
Dear Mr. Stockwell:

In response to your letter of July 3, 1972, I am enclosing a proposal for a research project concerning the analysis of economic activity in Sedgwick County in behalf of the Center for Business and Economic Research, Wichita State University.

Any questions you may have about the proposal may be directed to me at W.S.U., 685-9161, Ext. 547.

We wish to thank you for considering us in your request for proposals.

Sincerely,


Norman L. Weed
Associate Director

NLW:mb

Enc.



PROPOSAL SUBMITTED TO THE WICHITA-SEDGWICK COUNTY METRO-
POLITAN AREA PLANNING DEPARTMENT FOR A GRANT IN SUPPORT OF
RESEARCH AND ANALYSIS OF ECONOMIC ACTIVITY IN SEDGWICK COUNTY
UNDER THE PROVISIONS OF A REQUEST FOR PROPOSAL DATED JULY 3,
1972.

SUBJECT: A Proposal to Measure the Impact of Changes in Demand for the
Output of a Dominant Industry in a Small Region

PROJECT TITLE: A Study of the Economic Impact of a Reduction in Aerospace
Employment in Sedgwick County, Kansas

SUBMITTED BY: Center for Business and Economic Research
Wichita State University
Wichita, Kansas 67208

Telephone: 685-9161, Ext. 547

I. Background

A region that contains an industry that tends to dominate the local labor market possesses a mixed blessing. If demand for the output of such a dominant industry is strong and increasing, then an obvious "good" direct impact appears in the form of increasing job opportunities and rising income streams. An indirect impact will also occur in the region as other local industries which act as suppliers to the dominant industry increase their output in response to the initial rising demand. A third type of impact will take place, the induced effects, as workers began to spend new or increased incomes and thereby increase the demand for consumer goods and services in the region.

If the demand for the output of a dominant industry is falling, however, the economic forces will be of an adverse nature. The region will experience declines in employment, subcontracting and supply orders, income streams, and demand for goods and services. If the decline appears to be of a fairly long duration, the region may well experience out migration of population with a concurrent loss of desirable skills from the local labor pool.

The impact of major fluctuations in the output of a dominant industry will be reflected in most phases of economic activity in a community. The degree of intensity, and hence the overall loss, that will be experienced depends upon the extent of industrial interrelationship that prevails in the local economy, the labor intensive nature of the industry, the skills required in the industry's process, and the level of wages paid. A labor intensive industry with high wage levels and drawing heavily from local suppliers would obviously have a greater impact than an industry lacking any one of these criteria.

The aerospace industry has long been recognized as a dominant industry in Wichita and Sedgwick County. Employment in this industry accounts for approximately one half of total manufacturing employment in the Wichita S.M.S.A. and 12 percent to 15 percent of total employment. The industry is also recognized for its high wage structure. Since the industry serves two broad market categories, civilian and governmental, the demand for its output is affected by both cyclical and fiscal forces - either of which may cause large variations in the level of employment. The impact of such swings in aerospace activity have been felt in Wichita over the past three decades and will most likely be experienced again in the future.

The broad, overall impact of a decline in aerospace activity appears to be evident to the general population in the region. It is difficult to ignore a rate of unemployment in excess of 10 percent of the workforce. But the differential impacts on the various segments of the community are not known and it is the differential impacts that are the prime ingredients for short-run forecasting and planning.

II. The Proposal

It is proposed that the impact of changes in employment levels of the aerospace industry be investigated in Sedgwick County. The project would encompass estimates of the effects of such shifts on three levels of activity: (1) the direct impact relating to the aerospace industry, (2) the indirect impact involving secondary or supplying industries, and (3) the induced impact on trade and service activities. The variables to be investigated would be as follows:

1. Income
2. Employment - primary and secondary
3. Population shifts in the form of out-migration

4. Skill loss in the labor force
5. Job shifting of non-migrants
6. Induced affects in trade and service industries

The basic questions to be approached in the study involve changes that will occur in the County during the process of reducing employment in aerospace activities. Changes in the above variables will leave the community in a somewhat different condition economically and socially at the end of the process than it was at the beginning. For purposes of forecasting, it is important to know the size, type, and relationship of the impact in each case. What is the loss in income and where does loss take place other than with the worker who is terminated at the aircraft plant? What are the changes in the labor force - how many persons leave and with what skills - how many persons stay and take job opportunities that require less skill? Finally, what is the impact in terms of the business groupings that normally serve the individual as a consumer of goods and services?

The results of the study should yield estimates as to the amount of income loss incurred by the reduction in employment both by aerospace and non-aerospace workers. Shifts in employment, starting with the initial unemployment in the dominant industry and progressing to unemployment created in secondary or supply industries, job shifting by workers involving potential underemployment, and skill loss through out-migration, may also be illustrated. The impact on the county population base may be estimated through the process of measuring aerospace related out-migration. By combining other available tools and research with the information to be obtained in the study, some estimates of induced effects may be generated.

III. Methodology

The basic design of the proposed research project is to use both mail and personal surveys. The results of the surveys will be combined with available secondary data pertinent to the selected variables.

Personal surveys will be conducted with firms only and will consist of two types. Interviews will be conducted with the major firms involved in aircraft manufacturing to obtain data relevant to the direct impact of the reduced employment and to assist in identifying secondary industries. The second group of interviews will then be conducted with a sample drawn from firms classified as direct suppliers to aircraft manufacturers for data concerning secondary impacts.

Approximately 5,000 questionnaires will be mailed to individuals in four sets of samples consisting of the following types:

1. Aerospace out-migrants
2. Aerospace non-migrants
3. Non-aerospace worker migrants
4. General

The survey results will be combined with secondary data available on local income and employment to expand the sample data.

The time period covered by the study will involve the years 1969, 1970, and 1971. This period should be sufficient to include the major portion of the downward phase of the cycle.

The estimated time necessary to conduct the study is nine months beginning September 1, 1972 and ending May 31, 1973.

IV. Relationship to Prior Projects

The proposed study will be structured so as to be consistent with the framework provided by the existing Sedgwick County Input-Output matrix. The results of the study will provide input into the matrix for further analysis of the process of change in the region. The data may also serve

to provide the basis for further refinement of selected sectors within the matrix.

Other related research is also available or in progress that will complement the results of this study. A project involving the investigation of multijobholding in the region is currently being conducted at Wichita State University under the direction of Dr. Glenn Miller. Multijobholding, if extensive, would have an impact on the extent of unemployment registered and income maintenance. Prior research has also been conducted at Wichita State University into the determinants of migration of a segment of unemployed aerospace workers. This research, while covering only a portion of the population contemplated in the proposed study, will provide information related to the questions under investigation.

V. Proposed Budget

<u>Item</u>	<u>Amount</u>	
	<u>Grant</u>	<u>W.S.U.</u>
Research Associates (2), 9 months @ \$300	\$5,400	
Research - Faculty, 1/4 time		\$3,500
Secretarial assistance, 1 month equivalent @ \$400	400	200
Clerical assistance, 2 months equivalent @ \$100	200	
Computer time, card punching, and programming	2,000	500
Supplies, telephone, miscellaneous	500	
Reproduction - questionnaires and report	300	
Postage	300	
Indirect costs (Grant share @ 10% of Grant costs excluding indirect)	<u>900</u>	<u>4,500</u>
Total Budget	<u>\$10,000</u>	<u>\$8,700</u>
Grant	\$10,000	
W.S.U.	<u>8,700</u>	
Total	\$18,700	

ATTACHMENT 3

PRELIMINARY DRAFT

REVISION OF THE SEDGWICK
COUNTY INPUT-OUTPUT MATRIX:
Procedures and Results

A Report Submitted to the
Wichita-Sedgwick County Metropolitan
Area Planning Department under
Contract No. CPA-KS-07-16-1001
by the Center for Business and Economic
Research, Wichita State University

The Preparation of this Report was Financed
in Part through a Comprehensive Planning
Grant from the Department of Housing
and Urban Development, under the
Provisions of Section 701 of the Housing
Act of 1954, as Amended.

August, 1972

INTRODUCTION

This project was undertaken with the intent^{ed} to provide an additional procedure to facilitate planning and decision-making in Sedgwick County. The appropriate economic tool, as set forth in the original proposal, was considered to be a revised and updated version of the existing Sedgwick County input-output matrix designed to improve economic analysis and forecasting for the region.

Performance of the project was accomplished under Comprehensive Planning Grant Contract Number CPA-KS-07-16-1001 between the Wichita-Sedgwick County Metropolitan Area Planning Commission and the Center for Business and Economic Research, Wichita State University. Funds for the project were partially provided by a grant under Section 701 of the Housing Act of 1954, as amended, and partially provided by the Center for Business and Economic Research.

The project was originally scheduled to be started in September, 1971, and completed by June 1, 1972. However, due to various delays in approval of the contract, the contract was actually effective in November, 1971. Subsequently, a 90 day extension of the terminal date was also granted providing for completion on September 1, 1972.

The basic services to be performed under the contract were in four categories. First, to update the existing Sedgwick County input-output matrix by including more recent economic data. Second, to refine sector coefficients in the matrix. Third, to expand or disaggregate the sectors in the matrix. Fourth, to provide, insofar as possible, procedures for future updating of the matrix.

One of the basic procedures to be utilized in updating the matrix

was to work from the base data originally used in its construction. The acquisition and use of this data was a necessary element in the methodology proposed for revision of the matrix. The required data was composed of the original listings of firms, the sample survey data, and secondary source information.

The data were never released to the project, however. The agency that had performed the original work ruled that such a transfer of data would constitute a violation of the non-disclosure or confidentiality agreement with the firms that provided data.

The lack of such data necessitated changes in the procedures that were to be followed in the project. As a result, whole sets of basic data had to be acquired just to provide the starting point for updating the matrix. The scheduling of project procedures were changed considerably and resource allocation priorities were likewise changed. The goal of the project, however, remained the same.

I. METHODOLOGY

The initial construction of an input-output study built on primary data is a complex, time consuming, and costly process. Much has been written in the literature concerning such systems about the large data requirements, the pit-falls involved in obtaining the data (both technical and procedural), and the number of studies undertaken that were never completed.

When completed, the matrices provide a useful analytical tool but their use becomes limited with the passage of time. Since the matrix is derived from cross sectional data, the representation of the region's economy is as of a particular point in time. To provide maximum usefulness, it is necessary to periodically update the matrix to adjust for changing modes of production with the concurrent changes in input requirements and for changes in the economic composition of the region.

Various procedures are available for updating input-output matrices without repeating the process required in the initial construction. The basic method of updating involves the use of secondary data without a concurrent sample survey of the industrial complex. New output totals are obtained from available secondary sources or estimated with appropriate statistical techniques. Individual series are adjusted for relative price changes by the application of price indexes usually derived from national data sources. Through this procedure, a new transaction matrix is generated that will represent current interrelationships in the region. Adjustments for changes in technology are rarely made but some revision of coefficients may be performed on the basis of changes in national level coefficients.

Other procedures for updating matrices are variations of this basic method but generally involve some degree of additional sampling of firms

in the region. New firms in the region; i.e., firms that were established subsequent to the construction of the matrix, may be sampled as a measure of change. Alternatively, sample may involve a small survey of all firms and the results incorporated into the matrix to adjust the coefficients. In either case, the basic reliance is on the original pool of data and the new samplings are used for marginal adjustments.

The present study involved not only an updating of the existing matrix but also a substantial revision. Hence, the procedure was necessarily more complex than if the desired result would have been to provide a more current version of the older study. The lack of detailed data on the existing matrix further complicated the undertaking. As a result, the procedure used has elements of both an original study and an updating routine.

The study was conducted in five basic phases, each of which are elaborated as sections of this report. These phases are simply the logical sequence in which the work had to be conducted as each phase provided some basis for the next level of activity. The phases are given below:

1. The first phase was the process of defining sectors that would constitute the basis of the revised matrix.
2. The second phase was the collection of the necessary secondary data, both for the economic content of the matrix and for the number and types of firms in the region.
3. The third phase involved the classification of firms into appropriate Standard Industrial Classification Code groupings and subsequently into the proper sectors within the delineated framework.
4. The fourth phase was designed to provide the necessary primary data through sample survey techniques

based on the groupings formed in phase three.

5. The fifth phase was the technical process of revising and updating the matrix.

The procedures applied produced results that were marginally acceptable in some cases, but such situations are to be expected. In some cases the results were unacceptable and these procedures will have to be corrected. These corrections will be made as part of an ongoing program involving the matrix in the Center for Business and Economic Research.

II. SECTOR CLASSIFICATION

Part of the rationale for undertaking this project was to disaggregate the existing Sedgwick County input-output matrix in order to extend its use as an analytical tool. A vital step in the study, then, involved the determination of existing sectors to be divided into smaller parts and what the composition of these new sectors would be.

Of all the judgments made in structuring the matrix, those involving sector structuring were perhaps the most flexible. Opinions on the matter ranged from retaining the existing structure to providing detail on nearly an individual firm basis. There are both technical and practical considerations involved in striving for greater detail in the matrix. The greater the number of sectors included in the matrix, the more homogeneous will be the firms classified in those sectors. Firms will tend to have common production processes and the coefficients developed will have greater precision. A detailed matrix thus will allow greater in-depth analysis in later use.

While detail in terms of the structure of the matrix may be desirable, there are many constraints that limit the extent to which a small region study may be carried. For example, frequently there exists an insufficient number of firms in a given line of production to be classified separately. The problems of data disclosure; i.e., disclosing data from an individual firm, would require aggregation of the firms into a larger category. In some cases the lack of analytical interest in certain activities will preclude the necessary expenditure of resources to provide the necessary data for separate classification. Always, the resources available for conducting the project place an overall constraint on both procedure and the amount of detail data included in the study.

In the final analysis, four broad criteria were developed by which to judge the inclusion of sectors in the matrix. These criteria were:

1. The expenditure of resources necessary to gather the additional data.
2. Data constraints in the form of possible disclosure problems.
3. Comparability of the sectors with prior input-output studies that included Sedgwick County as a region or part of a region.
4. The estimated usefulness of a proposed sector for planning and economic development purposes.

The process of sector classification was essentially one of first expanding the number of sectors to include those that would be considered under optimum conditions and then eliminating sectors that would not qualify under the established criteria. In the initial phase, the existing matrices were reviewed and new sectors were defined in conformance with S.I.C. code groupings in the sectors delineated in those matrices. The newly defined sectors were then checked to determine if the number of firms within the classifications were sufficient to provide the required data and to avoid disclosure problems. The final determination was made on a rough cost-benefit basis; that is, did the estimated usefulness of a given sector warrant the estimated expenditure of funds necessary to provide the data. The sector classification derived from this process was then submitted for review and comment to the staff of the Metropolitan Area Planning Commission.

The processing section of the existing Sedgwick County matrix was expanded from 33 sectors to 47 sectors. The final demand and final payments sections were not changed in form. The composition of the dis-

aggregated sectors, an explanation of their coverage, and the degree of comparability with existing matrices are illustrated in the following tables.

AGRICULTURE

1. Grain Crops

Includes establishments primarily engaged in the production of grains such as barley, corn, oats, soybeans, and wheat.

2. Dairy and Poultry Products

Includes establishments primarily engaged in the production of cow's milk and other dairy products and establishments engaged in the production of broiler chickens. Also includes establishments engaged in the production of poultry and poultry products except broiler chickens.

3. Livestock

Includes establishments primarily engaged in the production of beef cattle, hogs, and other livestock and livestock products not elsewhere classified.

4. Other Agriculture Products and Services

Includes establishments engaged in the production of various miscellaneous farm products not elsewhere classified and establishments performing agricultural, animal husbandry, and horticultural services on a fee or contract basis.

MINING

5. Crude Petroleum and Natural Gas & Oil and Gas Field Services

Includes establishments primarily engaged in operating oil and gas field properties and those establishments engaged in drilling wells for oil or gas for others on a contract, fee, or other basis.

6. Nonmetallic Mineral Mining Excluding Fuels

Includes mining of stone, sand, gravel, and clays.

7. Other Mining

Includes mining of coal and minerals not previously classified.

CONSTRUCTION

8. Maintenance and Repair

Includes expenditures by firms for maintenance and repairs services on capital assets. These include painting, rewiring, etc.

CONSTRUCTION (continued)

9. Building Construction - General Contractors

General contractors primarily engaged in construction of residential, farm, industrial, public, and other buildings.

10. Heavy Construction Other Than Building Construction

Includes general contractors engaged in the construction of highways and streets, bridges, sewers, railroads, etc.

11. Special Trade Contractors

Includes contractors who undertake specialized activities such as plumbing, painting, plastering, carpentry, etc.

MANUFACTURING

12. Meat Products

Includes establishments such as processing, preparing, and packing meat products.

13. Dairy Products

This group includes establishments primarily engaged in processing milk and cream. Manufacturing creamery butter, natural cheese, ice cream and frozen desserts, etc.

14. Other Food and Kindred Products

Includes establishments producing or processing beverage products, bakery products, etc.

15. Grain Mill Products

Includes establishments primarily engaged in processing flour, cereal, feeds, etc.

16. Apparel and Related Products

This major group, known as the cutting-up and needle trades, includes establishments producing clothing and fabricating products by cutting and sewing purchased woven or knit textile fabrics and related materials.

17. Lumber and Wood Products Except Furniture

This group includes various types of millwork plants and establishments engaged in manufacturing finished articles made entirely or mainly of wood or wood substitutes.

MANUFACTURING (continued)

18. Furniture and Fixtures

Includes establishments engaged in manufacturing household, office, public building and restaurant furniture, and office and store fixtures.

19. Paper and Allied Products & Printing & Publishing

Includes establishments manufacturing pulp from wood and other cellulose fibers, the manufacture of paper and paper products such as bags, boxes, envelopes, etc. This group also includes establishments engaged in printing by one or more of the common processes and establishments which perform services for the printing trade such as type setting, etc., and establishments engaged in publishing newspapers, books, etc.

20. Industrial Inorganic and Organic Chemicals

Includes establishments primarily engaged in manufacturing inorganic pigments.

21. Other Chemicals & Chemical Products

Includes establishments engaged in manufacturing fertilizers, agricultural pesticides, and other agricultural chemicals; and also includes those establishments manufacturing unfinished plastics, drugs, cleaning preparations, perfumes, paints, explosives, glue, ink, etc.

22. Petroleum Refining and Related Industries

This group includes establishments primarily engaged in petroleum refining, manufacturing paving and roofing materials, and compounding lubricating oils and greases from purchased materials.

23. Rubber & Miscellaneous Plastic Products

Includes establishments primarily engaged in producing tires and tubes, rubber footwear, other fabricated rubber products, and miscellaneous finished plastic products.

24. Concrete, Gypsum and Plaster Products

Includes establishments primarily engaged in manufacturing concrete products, except block and brick, from a combination of cement and aggregate.

MANUFACTURING (continued)

25. Other Stone Clay and Glass Products

Includes establishments primarily engaged in producing glass and glass products, brick, pottery, asbestos products, etc.

26. Primary Metal Industries

Includes establishments primarily engaged in the smelting of ferrous and nonferrous metals and establishments engaged in the manufacture of casting, forgings, and other basic metal products.

27. Fabricated Metal Products

Includes establishments primarily producing metal sash and doors, boiler plate fabrication, sheet metal work, and other fabricated structural metal products.

28. Other Fabricated Metal Products

Includes establishments primarily engaged in producing metal cans, cutlery, hand tools, general hardware, non-electrical heating equipment, bolts, screws, rivets, washers, metal stampings, wire products, springs, valves, pipe and other light fabricated metal products.

29. Metal Working Machinery

Includes establishments primarily engaged in manufacturing power driven machines, not supported in the hands of an operator when in use, that shape metal by cutting or use of electrical techniques; the rebuilding of such machine tools and the manufacture of replacement parts for them.

30. Miscellaneous Machinery Except Electrical

Includes establishments primarily engaged in manufacturing machinery and parts, except electrical, not elsewhere classified.

31. Other Machinery Except Electrical

Includes establishments primarily engaged in manufacturing oil field machinery and equipment, farm machinery and equipment, food products machinery, printing equipment, etc.

32. Electrical Machinery, Equipment & Supplies

Includes establishments engaged in manufacturing machinery apparatus and supplies for the generation, storage, transmission, transformation, and utilization of electrical energy.

MANUFACTURING (continued)

33. Motor Vehicles & Equipment, and Other Transportation Equipment

Includes establishments primarily engaged in manufacturing or assembling motor vehicles, passenger cars, truck and bus bodies, truck trailers, and parts for motor vehicles.

34. Aerospace

Includes establishments manufacturing or assembling complete aircraft, missiles, or space vehicles, and parts for such vehicles.

35. Professional, Scientific, and Controlling Instruments: Photographic & Optical Goods: Watches and Clocks

Includes establishments engaged in manufacturing mechanical measuring, engineering, laboratory, and scientific research instruments; optical instruments and lenses; surgical, medical and dental instruments, equipment, and supplies; ophthalmic goods; photographic equipment and supplies; and watches and clocks.

36. Miscellaneous - Manufacturing Industries - Radio and TV Stations

Includes establishments manufacturing goods not elsewhere classified such as textile mill products, lumber and wood products, furniture and fixtures, leather and leather products, office supplies, and radio and TV stations.

TRANSPORTATION

37. Transportation

Includes enterprises engaged in passenger and freight transportation by railway, highway, or air; or furnishing services related to transportation; petroleum pipeline transportation; and warehousing.

UTILITIES

38. Utilities

Includes enterprises engaged in furnishing telephone and telegraph communication services and the supplying of electricity, gas, steam, water, or sanitary services.

WHOLESALE TRADE

39. Wholesale Trade

Includes establishments or places of business primarily engaged in selling merchandise to retailers; to industrial, commercial, institutional, or professional users; or to other wholesalers; or acting as agents in buying merchandise for or selling merchandise to such persons or companies.

RETAIL TRADE

40. Automotive Dealers and Service Stations

Includes retail dealers selling new and used automobiles and new parts and accessories; aircraft and marine dealers; and gasoline service stations.

41. Eating and Drinking Places

Includes establishments selling prepared foods and drinks for consumption on the premises and, also, lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption.

42. Other Retail Trade

Includes retailers of building materials, general merchandise such as department stores, food, clothing, furniture, drugs, and other retail trade.

FINANCE, INSURANCE, AND REAL ESTATE

43. Finance, Insurance, and Real Estate

Includes establishments operating primarily in the fields of finance, insurance, and real estate. Finance includes banks and trust companies, credit agencies other than banks, other investment companies, brokers and dealers in securities and commodity contracts, and security and commodity exchanges. Insurance covers carriers of all types of insurance and insurance agents and brokers. Real estate includes owners, lessors, leasees, buyers, sellers, agents and developers of real estate.

SERVICES

44. Lodging Services

Includes commercial and institutional establishments engaged in furnishing lodging and meals, camping space, and camping facilities on a fee basis.

SERVICES (continued)

45. Medical and Other Health Services

Includes establishments primarily engaged in furnishing medical, surgical, and other health services to the public.

46. Business Services, Personal Services, and Other Services

Includes establishments rendering services not elsewhere classified to business enterprises on a fee or contract basis and establishments primarily engaged in providing services generally involving the care of the person or his apparel such as laundries, cleaning and dyeing plants, photographic studios, barber and beauty shops, etc.; and other services not elsewhere classified.

47. Education

Includes both public and privately provided educational services such as elementary and secondary schools, colleges and universities, commercial and trade schools, and other educational services.

AGRICULTURE

S.I.C. CODE

1. Grain Crops
2. Dairy and Poultry Products
3. Livestock
4. Other Agriculture Products and Services

MINING

	S.I.C. CODE
5. <u>Crude Petroleum and Natural Gas and Oil and Gas Field Services</u>	1311, 138
6. <u>Nonmetallic Mineral Mining Excluding Fuels</u>	14
144 - Sand and Gravel	
7. <u>Other Mining</u>	10-13
10 - Metal Mining	
11 - Anthracite Mining	
12 - Bituminous Coal and Lignite Mining	

CONSTRUCTION

S.I.C. CODE

- | | | |
|-----|--|----|
| 8. | <u>Maintenance and Repair (a dummy industry)</u> | |
| 9. | <u>Building Construction--General Contractors</u> | 15 |
| 10. | <u>Heavy Construction Other Than Building Construction</u> | 16 |
| 11. | <u>Special Trade Contractors</u> | 17 |

MANUFACTURING

	S.I.C. CODE
12. <u>Meat Products</u>	201
2011 - Meat Packing Plants	
2013 - Sausage and Other Prepared Meats	
2015 - Poultry and Small Game Wholesale	
13. <u>Dairy Products</u>	202
2021 - Creamery Butter	
2024 - Ice Cream and Frozen Desserts	
2026 - Fluid Milk	
14. <u>Other Food and Kindred Products</u>	203, 205, 207, 208, 209
2033 - Canned Fruits, Vegetables, Preserves, Jams, and Jellies	
2035 - Pickled Fruits and Vegetables; Vegetable Sauces and Seasonings; Salad Dressing	
2037 - Frozen Fruits, Fruit Juices, Vegetables, and Specialties	
2051 - Bread and Other Bakery Products, Except Cookies and Crackers	
2071 - Candy and Other Confectionary Products	
2086 - Bottled and Canned Soft Drinks and Carbonated Waters	
2087 - Flavoring Extracts and Syrups (NEC)	
2092 - Soybean Oil Mills	
2094 - Animal and Marine Fats and Oils	
2097 - Manufactured Ice	
2099 - Food Preparations (NEC)	
2099.1 - Hatcheries	
15. <u>Grain Mill Products</u>	204
2041 - Flour; Other Grain Mill Products	
2042 - Prepared Feed for Animals and Fowls	
2043 - Cereal Preparations	
2046 - Wet Corn Milling	
16. <u>Apparel and Related Products</u>	231, 232, 239
2311 - Men's, Youths', and Boys' Suits, Coats, and Overcoats	
2321 - Men's, Youths', and Boys' Shirts (Except Workshirts), Collars, and Nightwear	
2328 - Men's, Youths' and Boys' Work Clothing	
2391 - Curtains and Draperies	
2392 - Bags, Garment Storage: Made of Fabric, Plastic, or Other Materials Except Paper	
2393 - Textile Bags	
2394 - Canvas and Related Products	
2399 - Fabricated Textile Products (NEC)	

17. Lumber and Wood Products Except Furniture 243, 244, 249
- 2431 - Millwork Plants
 - 2433 - Prefabricated Wood Building and Structural Members
 - 2441 - Nailed and Lock Corner Wooden Boxes and Shook
 - 2442 - Wirebound Boxes and Crates
 - 2499 - Wood Products (NEC)
18. Furniture and Fixtures 251, 253, 254, 259
- 2511 - Wood Household Furniture, Except Upholstered
 - 2512 - Wood Household Furniture, Upholstered
 - 2515 - Mattress and Bedspings
 - 2531 - Public Building and Related Furniture
 - 2541 - Wood Partitions, Shelving, Lockers, Office and Store Fixtures
 - 2542 - Metal Partitions, Shelving, Lockers, Office and Store Fixtures
 - 2591 - Venetian Blinds and Shades
 - 2599 - Furniture and Fixtures (NEC)
19. Paper and Allied Products and Printing and Publishing 264, 265, 271-276, 278, 279
- 2643 - Bags, Except Textile Bags
 - 2649 - Converted Paper and Paperboard Products (NEC)
 - 2653 - Corrugated and Solid Fiber Boxes
 - 2711 - Newspaper: Publishing and Printing
 - 2721 - Periodicals Publishing and Printing
 - 2731 - Book Publishing and Printing
 - 2732 - Book Printing
 - 2741 - Miscellaneous Publishing
 - 2751 - Commercial Printing, Except Lithographic
 - 2752 - Commercial Printing, Lithographic
 - 2753 - Engraving and Plate Printing
 - 2761 - Manifold Business Forms
 - 2789 - Bookbinding and Related Work
 - 2791 - Typesetting
 - 2793 - Photo Engraving
 - 2794 - Electrotyping and Stereotyping
20. Industrial Inorganic and Organic Chemicals 281
- 2812 - Alkalies and Chlorine
 - 2813 - Industrial Gases
 - 2815 - Cyclic Intermediates, Dyes, Organic Pigments (Lakes and Toners), and Cyclic (Coal Tar) Crudes
 - 2818 - Industrial Organic Chemicals (NEC)
 - 2819 - Industrial Inorganic Chemicals (NEC)

21. Other Chemicals and Chemical Products 282-285, 287, 289
- 2821 - Plastic Materials, Synthetic Resins, and Nonvulcanizable Elastomers
 - 2831 - Biological Products
 - 2833 - Medicinal Chemicals and Botanical Products
 - 2834 - Pharmaceutical Preparations
 - 2841 - Soap and Other Detergents, Except Specialty Cleaners
 - 2842 - Specialty Cleaning, Polishing, and Sanitary Preparations, Except Soap and Detergents
 - 2851 - Paints, Varnishes, Lacquers, and Enamels
 - 2872 - Fertilizers--Mixing Only
 - 2879 - Agricultural Pesticides and Other Agricultural Chemicals (NEC)
 - 2899 - Chemical and Chemical Preparations (NEC)
22. Petroleum Refining and Related Industries 291, 295, 299
- 2911 - Petroleum Refining
 - 2951 - Paving Mixtures and Blocks
 - 2952 - Asphalt Felts and Coatings
 - 2992 - Lubricating Oils and Greases
23. Rubber and Miscellaneous Plastic Products 301, 306, 307
- 3011 - Tires and Inner Tubes
 - 3069 - Fabricated Rubber Products
 - 3079 - Miscellaneous Plastic Products
24. Concrete, Gypsum, and Plaster Products 327
- 3271 - Concrete Block and Brick
 - 3272 - Concrete Products, Except Block and Brick
 - 3273 - Ready Mix--Concrete
 - 3275 - Gypsum Products
 - 3281 - Cut Stone and Stone Products
25. Other Stone Clay and Glass Products 323, 324, 329
- 3231 - Glass Products--Made of Purchased Glass
 - 3241 - Cement, Hydraulic
 - 3293 - Gaskets, Packing and Asbestos Insulation
 - 3295 - Minerals and Earths, Ground or Otherwise Treated
 - 3296 - Mineral Wool
 - 3299 - Ceramics
26. Primary Metal Industries 331, 332, 336, 339
- 3317 - Steel Pipe and Tubes
 - 3321 - Gray Iron Foundries
 - 3322 - Malleable Iron Foundries
 - 3361 - Aluminum Castings
 - 3362 - Brass, Bronze, Copper Base Alloy Castings
 - 3369 - Nonferrous Castings (NEC)
 - 3399 - Primary Metal Industries (NEC)

27. Fabricated Metal Products 344
- 3441 - Fabricated Structural Steel
 - 3442 - Metal Doors, Sash, Frames, Molding, Trim
 - 3443 - Fabricated Plate Work--Boilershops
 - 3444 - Sheet Metal Work
 - 3449 - Miscellaneous Metalwork
28. Other Fabricated Metal Products 342, 343, 345-349
- 3423 - Hand and Edge Tools, Except Machine Tools and Hand Saws
 - 3429 - Hardware (NEC)
 - 3432 - Plumbing Fixtures, Fitting and Trim (Brassgoods)
 - 3433 - Heating Equipment, Except Electric
 - 3451 - Screw-Machine Products
 - 3461 - Metal Stampings
 - 3471 - Electroplating, Plating, Polishing, Anodizing and Coloring
 - 3479 - Coating, Engraving and Allied Services (NEC)
 - 3481 - Miscellaneous Fabricated Wire Products
 - 3491 - Metal Shipping Barrels, Drums, Kegs, and Pails
 - 3498 - Fabricated Pipe and Fittings
 - 3499 - Fabricated Metal Products (NEC)
29. Metal Working Machinery 354
- 3542 - Machine Tools, Metal Forming Types
 - 3544 - Special Dies and Tools, Die Sets, Jigs and Fixtures
 - 3545 - Machine Tool Accessories and Measuring Devices
 - 3548 - Metal Working Machinery, Except Machine Tools and Power-Driven Hand Tools
30. Miscellaneous Machinery Except Electrical 359
- 3599 - Miscellaneous Machinery, Except Electrical
31. Other Machinery Except Electrical 351-353, 355, 356, 358
- 3522 - Farm Machinery and Equipment
 - 3531 - Construction Machinery and Equipment
 - 3533 - Oil Field Machinery and Equipment
 - 3537 - Industrial Trucks, Trailers, Tractors and Stackers
 - 3551 - Food Products Machinery
 - 3555 - Printing Trades Machinery and Equipment
 - 3559 - Special Industry Machinery (NEC)
 - 3561 - Pumps, Air and Gas Compressors and Pumping Equipment
 - 3564 - Blowers, Exhaust and Ventilating Fans
 - 3565 - Industrial Patterns
 - 3566 - Mechanical Power Transmission Equipment, Except Ball and Roller Bearings
 - 3569 - General Industrial Machinery and Equipment (NEC)
 - 3581 - Automatic Merchandising Machines
 - 3582 - Commercial Laundry, Dry-Cleaning and Pressing Machines
 - 3585 - Refrigerating and Air-Conditioning Equipment

32. Electrical Machinery, Equipment and Supplies .361-367, 369
- 3611 - Electrical Measuring Instruments and Test Equipment
 - 3613 - Switch Gear and Switchboard Apparatus
 - 3621 - Motors and Generators
 - 3622 - Industrial Controls
 - 3623 - Welding Apparatus
 - 3631 - Household Cooking Equipment
 - 3639 - Household Appliances (NEC)
 - 3642 - Lighting Fixtures
 - 3643 - Current-Carrying Wiring Devices
 - 3652 - Phonograph Records
 - 3662 - Radio-TV Transmitting, Signaling-Detection Equipment-Apparatus
 - 3672 - Cathode Ray Picture Tubes
 - 3679 - Electronic Components and Accessories (NEC)
 - 3694 - Electrical Equipment for Internal Combustion Engines
33. Motor Vehicles and Equipment, and Other Transportation Equipment 371, 373, 379
- 3713 - Truck and Bus Bodies
 - 3714 - Motor Vehicle Parts and Accessories
 - 3715 - Truck Trailers (Full)
 - 3732 - Boat Building, Repairing and Accessories
 - 3799 - Transportation Equipment (NEC)
34. Aerospace 372
- 3721 - Aircraft
 - 3722 - Aircraft Engines and Engine Parts
 - 3729 - Aircraft Parts and Auxiliary Equipment
35. Professional, Scientific, and Controlling Instruments: Photographic and Optical Goods: Watches and Clocks 381, 382, 384, 385, 386
- 3811 - Engineering Laboratory, Scientific and Research Instruments and Associated Equipment
 - 3821 - Mechanical Measuring and Controlling Instruments, Except Automatic Temperature Controls
 - 3842 - Orthopedic, Prosthetic and Surgical Appliances and Supplies
 - 3843 - Dental Equipment and Supplies
 - 3851 - Ophthalmic Goods
 - 3861 - Photographic Equipment and Supplies
36. Miscellaneous--Manufacturing Industries Radio and TV Stations 391, 394, 395, 396, 399
- 39a01 - Electric Power Generating Plants
 - 39b01 - Natural Gas
 - 39c01 - Water Utility
 - 3912 - Jewelers' Findings and Materials
 - 3949 - Sporting and Athletic Goods (NEC)

36. Miscellaneous--Manufacturing Industries
Radio and TV Stations (continued)

391, 394, 395, 396, 399

- 3952 - Lead Pencils, Crayons and Artists' Materials
- 3953 - Marking Devices
- 3962 - Feathers, Plumes and Artificial Flowers
- 3991 - Brooms and Brushes
- 3993 - Signs and Advertising Displays
- 3994 - Morticians Goods
- 3999 - Manufacturing Industries (NEC)

Radio Stations
Television Stations

TRANSPORTATION

S.I.C. CODE

37. Transportation

40-42, 45-47

- 40 - Railroad Transportation
- 41 - Local and Suburban Transit and Interurban Highway
Passenger Transportation
- 42 - Motor Freight Transportation and Warehousing
- 45 - Transportation by Air
- 46 - Pipeline Transportation
- 47 - Transportation Services

UTILITIES

S.I.C. CODE

38. Utilities

48, 49

48 - Communication

49 - Electric Gas and Sanitary Services

WHOLESALE TRADE

S.I.C. CODE

39. Wholesale Trade

501, 502, 504-509

- 501 - Motor Vehicles and Automotive Equipment
- 502 - Drugs, Chemicals and Allied Products
- 504 - Groceries and Related Products
- 505 - Farm Products--Raw Materials
- 506 - Electrical Goods
- 507 - Hardware Plumbing and Heating Equipment
- 508 - Machinery, Equipment, and Supplies
- 509 - Miscellaneous Wholesalers

RETAIL TRADE

S.I.C. CODE

40. Automotive Dealers and Service Stations 55
- 551 - New and Used Car Dealers
 - 552 - Motor Vehicle Dealers (Used Cars Only)
 - 553 - Tire, Battery, and Accessory Dealers
 - 554 - Gasoline Service Stations
 - 559 - Miscellaneous Aircraft, Marine, and Automotive Dealers
41. Eating and Drinking Places 58
42. Other Retail Trade 52-54, 56, 57, 59
- 52 - Building Materials, Hardware, and Farm Equipment Dealers
 - 53 - Retail Trade--General Merchandise
 - 54 - Food Stores
 - 56 - Apparel and Accessory Stores
 - 57 - Furniture, Home Furnishings and Equipment Stores
 - 59 - Miscellaneous Retail Stores

FINANCE, INSURANCE AND REAL ESTATE

S.I.C. CODE

43. Finance, Insurance and Real Estate

60-67

- 60 - Banking
- 61 - Credit Agencies Other Than Bank
- 62 - Security and Commodity Brokers, Dealers, Exchanges,
and Services
- 63 - Insurance Carriers
- 64 - Insurance Agents, Brokers, and Service
- 65 - Real Estate
- 66 - Combinations of Real Estate, Insurance, Loans, Law Offices
- 67 - Holding and Other Investment Companies

SERVICES

	S.I.C. CODE
44. <u>Lodging Services</u>	701-703
701 - Hotels, Tourist Courts and Motels	
702 - Rooming and Boarding Houses	
703 - Trailer Parks and Camps (Excludes 7031 - Trailer Parks)	
45. <u>Medical and Other Health Services</u>	80
46. <u>Business Services, Personal Services, and Other Services</u>	72, 73, 7301, 75, 76, 78, 79, 81, 84 86, 88, 89 (excludes 8921)
72 - Personal Services	
73 - Miscellaneous Business Services	
7301 - Trailer Parks	
75 - Automobile Repair, Auto Services, and Garages	
76 - Miscellaneous Repair Services	
78 - Motion Pictures	
79 - Amusement and Recreation Services Except Motion Pictures	
81 - Legal Services	
84 - Museums, Art Galleries, Botanical, and Zoological Gardens	
86 - Nonprofit Membership Organizations	
88 - Private Households	
89 - Miscellaneous Services	
47. <u>Education</u>	82, 92, 93
82 - Educational Services	
9282 - State Educational Services	
9382 - Local Educational Services	

III. SECONDARY SOURCES AND DATA

Source Documents

Agriculture

Source Documents:

1. Kansas Farm Facts, 1970-1971
2. Farm Management Summary and Analysis Report #2
3. Farm Income USDA Report
4. 1964 Census of Agriculture

Mining

Source Documents:

1. "Minerals Yearbook", Volume III, 1969 Area Reports: Domestic
United State Department of the Interior, U. S. Bureau of Mines.
2. "The Interindustry Structure of the U. S. Mining Industries
1958." United States Department of the Interior, U. S. Bureau
of Mines. Information circular 8338.
3. "County Business Patterns," Kansas 1970. U. S. Department of
Commerce, Bureau of the Census, U. S. Government Printing Office,
Washington, D. C., 1971.

Construction

Source Documents:

1. "Construction Reports," 1967, Department of Commerce, Bureau
of the Census.
2. "Construction Review," 1967, Department of Commerce, Bureau of
the Census.
3. "Dodge Construction Contract Statistics Service, 1970," F. W.
Dodge Company, McGraw-Hill.

Manufacturing

Source Documents:

1. 1967 Survey of Manufactures, U. S. Department of Commerce, 1969.
2. 1965 Survey of Manufactures, U. S. Department of Commerce.
3. Wichita Area Chamber of Commerce, "Directory of Manufactures," 1970.
4. Area Wage Survey Wichita SMSA 1970, Bureau of Labor Statistics.

Transportation

Source Documents:

1. Kansas Corporation Commission, Thirtieth Report (Topeka, Kansas: State Printing Office, 1970).
2. Kansas State Corporation Commission, Statistics of Motor Common Carriers of Property and Passengers (Topeka, Kansas: Transportation Division Rate Section, 1971).
3. Department of Commerce, Bureau of the Census, 1967 Census of Transportation: Commodity Transportation Survey, (Washington: U. S. Government Printing Office: 1969).
4. Department of Transportation, Federal Aviation Administration, FAA Statistical Handbook of Aviation, (Washington: U. S. Government Printing Office: 1969).

Utilities

Source Documents:

1. Kansas Corporation Commission, Thirtieth Report, (Topeka, Kansas: State Printing Office, 1970).
2. Federal Communications Commission, TV Broadcast Financial Data and AM-FM Broadcast Financial Data, (Washington: U. S. Government Printing Office, 1970).

Selected Secondary Data Totals

Agriculture - 1970 Figures

1. Grain Crops - Farm Value of Grain Crops Produced on Sedgwick County Farms	
<u>Components</u>	<u>Output</u>
Wheat	\$7,999,000
Sorghums	2,018,400
Corn	212,700
Oats	51,800
Barley	513,200
Rye	13,700
Soybeans	<u>653,700</u>
Total Sector Output	\$11,462,500
2. Dairy and Poultry Products - Farm Value of Dairy and Poultry Products Produced on Sedgwick County Farms.	
<u>Components</u>	<u>Output</u>
Milk	\$4,119,400
Eggs	1,010,480
Chickens and Broilers	66,800
Turkeys	<u>354,120</u>
Total Sector Output	\$5,550,800
3. Livestock - Farm Value of Livestock on Sedgwick County Farms	
<u>Components</u>	<u>Output</u>
Cattle	\$6,303,000
Hogs	2,403,200
Sheep	<u>612,200</u>
Total Sector Output	\$9,318,400

4. Other Agricultural Products - Farm Value of Other Agricultural Products
Produced on Sedgwick County Farms.

<u>Components</u>	<u>Output</u>
Wool	\$ 101,690
Alfalfa Hay	1,947,800
Wild Hay	169,000
Pasture Hay	144,000
Sorghums for Silage	379,800
Sorghums for Forage	8,900
Corn for Silage	325,900
Alfalfa and Sweet Clover Seed	670
Commercial Apples	91,620
Peaches	<u>201,890</u>
Total Sector Output	\$2,371,270

Mining

5. Crude Petroleum and Natural Gas and Oil and Gas Field Services

<u>SIC Components</u>	<u>Output</u>
1311 - Crude Petroleum and Natural Gas	
138 - Oil and Gas Field Services	
Total Industry Output	

6. Nonmetallic Mineral Mining Excluding Fuels - Including Mining of Sand and Gravel

<u>SIC Components</u>	<u>Output</u>
14 - Sand and Gravel	
Total Industry Output	

7. Other Mining - Includes Mining of Salt and Natural Gas Liquids

<u>SIC Components</u>	<u>Output</u>
Salt	
132 - Natural Gas Liquids	
Total Industry Output	\$10,247,000

Wholesale Trade (1967, State Figures)

<u>SIC Components</u>	<u>Output</u>
501 - Motor Vehicles and Automotive Equipment	\$152,162,000
502 - Drugs Chemicals and Allied Products	58,200,000
503 - Piece Goods, Actions and Apparel	1,873,000
504 - Groceries and Related Products	320,221,000
505 - Farm Products - Raw Materials	137,726,000
507 - Hardware Plumbing, Heating Equipment Supplies	23,339,000
508 - Machinery Equipment, and Supplies	224,010,000
509 - Miscellaneous Wholesalers	600,372,000
Total Industry Output	\$1,465,478,000

Retail Trade - 1967 Figures

40. Automotive Dealers and Service Stations

<u>SIC Components</u>	<u>Output</u>
551 - New and Used Car Dealers	
552 - Motor Vehicle (Used Cars Only)	\$143,558,000
553 - Tire Battery and Accessory Dealers	14,540,000
554 - Gasoline Service Stations	51,642,000
559 - Miscellaneous Aircraft, Marine and Automotive Dealers	16,269,000
Total Industry Output	\$226,009,000

41. Eating and Drinking Places

SIC Components

Output

58 - Eating and Drinking Places

\$44,419,000

Total Industry Output

\$44,419,000

42. Other Retail Trade

SIC Components

Output

52 - Building Materials, Hardware, and Farm Equipment Dealers

\$30,937,000

53 - Retail Trade - General Merchandise

93,391,000

54 - Food Stores

135,598,000

56 - Apparel and Accessory Stores

37,545,000

57 - Furniture, Home Furnishings, and Equipment Stores

26,422,000

59 - Miscellaneous Retail Stores

60,833,000

Total Industry Output

\$353,789,000

Retail Trade

Source Documents:

1. Department of Commerce, Bureau of the Census, U. S. Census of Business: 1967, Retail Trade - Kansas, (Washington: U. S. Government Printing Office, 1969).
2. Kansas Department of Revenue, Sales Tax Collections by Type of Business, (Topeka, Kansas: Mimeographed, 1970).
3. Robert Morris Associates, Annual Statement Studies, Philadelphia: Robert Morris Associates, 1970)

Wholesale Trade

Source Documents:

1. Department of Commerce, Bureau of Census, U. S. Census of Business, 1967, Kansas.
2. Kansas Department of Revenue, Sales Tax Collections by Type of Business.

Services

Source Documents:

1. Internal Revenue Service, Statistics of Income, 1969 Corporation Income Tax Returns.
2. Department of Health Education and Welfare, Social Security Bulletin, 1970.

IV. CLASSIFICATION OF FIRMS

The exclusion of a prior data base which would have served to delineate the industrial structure of the county and thereby provide the basis for both extrapolations and sampling procedures necessarily complicated the process of the study. The empirical precision of the input-output matrix depends to some degree on the appropriate assignment of firms into sectors of the matrix. The precision of the sampling procedure is likewise dependent upon the correct assignment of firms to sectors and information relative to the percent of firms sampled in any one sector.

In addition to appropriate sectoral assignment, it is desirable to know the relative distribution of firms by industrial classification within the sector. Sectors are designed to be as homogenous as possible, but there still may exist considerable variation among the production functions of the individual firms producing different products within the broader designation. Since the coefficients to be derived from the data are essentially average or representative inputs for the sector, the number of firms within the various standard industrial classification codes making up the sector must be determined to provide appropriate weighting techniques.

The appropriate classification of firms into S.I.C. code groupings is a long and tedious process if full coverage of an area is desired. Often, the procedure is shortened by project teams through the process of ignoring firms below a given size or by adjusting sample results to estimated universe size. Since this project involved the concept of an ongoing relationship with the study, the desired course appeared to be one of providing as much detail as possible in the listing of firms.

The additional information may also prove useful in other research efforts.

The procedure used for the classification of firms is summarized as follows:

1. A listing of firms in Sedgwick County was compiled using various source documents.
2. The primary product produced by the firms was determined.
3. The firms were assigned to appropriate S.I.C. code classifications and to sectors.
4. The firms were stratified within S.I.C. code classifications according to size as determined by employment levels.

No single source of data available contained a complete listing of all firms in the county. Firm names were drawn from four principle sources:

1. Kansas State Employment Service listings
2. The Wichita City Directory
3. The Wichita Area Telephone Directory
4. Various directories published by the Wichita Area Chamber of Commerce

Although the number of firms catalogued is voluminous, the listing is still not complete in sectors containing large numbers of small, principally owner operated firms.

The assignment of single S.I.C. codes to firms presented some judgmental problems. Since the construction of the matrix assumes that firms produce a homogeneous output with a single production function, the firms must be classified by a single product - their major product line. No two sources provide complete agreement on the best classification of

firms by major product lines and often deviations from the S.I.C. code are instituted to suit the individual needs of a publishing agency. These discrepancies plus the duplications brought about by multiple listing of firms under various classifications were eliminated by a screening process. The classifications were made to conform to definitions provided in the Standard Industrial Classification Code Manual. In very difficult cases, duplicate listing of firms was noted and allowed to remain until sufficient primary data could be collected to make proper classification.

Some assignment problems also occurred in intersectoral classifications. For example, many firms both produce products and sell products in a wholesale or retail capacity. Again, assignment had to be made on the basis of the dominant activity as well as the major product line. Such cases were particularly troublesome in manufacturing - wholesaling activities.

The processing section of the revised matrix was categorized into 47 sectors. The three sectors involving agricultural pursuits were not treated in the same manner as the other sectors and, consequently, no detailed list of firms was developed. The listing of firms by sector and S.I.C. code classification for the 43 sectors are attached as a part of this report.

SES Listing of firms by 2 digit codes

CODE	TITLE	No of Firms
13	Crude petroleum & natural gas	117
14	Mining & quarrying of nonmetallic minerals, except fuels	6
15	Building construction--general contractors	129
16	Construction other than building construction--general contractors	32
17	Construction--special trade contractors	261
19	Ordnance & accessories	
20	Food & kindred products	43
21	Tobacco manufactures	
22	Textile mill products	
23	Apparel & other finished products made from fabrics & similar materials	10
24	Lumber & wood products, except furniture	14
25	Furniture & fixtures	19
26	Paper & allied products	4
27	Printing, publishing, & allied industries	49
28	Chemicals & allied products	15
29	Petroleum refining & related industries	3
30	Rubber & miscellaneous plastics products	13
31	Leather & leather products	3
32	Stone, clay, glass, & concrete products	19
33	Primary metal industries	12
34	Fabricated metal products, except ordnance, machinery, & transportation equipment	38
35	Machinery, except electrical	77
36	Electrical machinery, equipment, & supplies	7
37	Transportation equipment	54
38	Professional, scientific, & controlling instruments; photographic & optical goods; watches & clocks	18
39	Miscellaneous manufacturing industries	17
40	Railroad transportation	6
41	Local & suburban transit & interurban passenger transportation	7
42	Motor freight transportation & warehousing	87
44	Water transportation	
45	Transportation by air	7
46	Pipe line transportation	1
47	Transportation services	4
48	Communication	13
49	Electric, gas, & sanitary services	13
50	Wholesale trade	428
52	Building materials, hardware, & farm equipment dealers	100
53	Retail trade--general merchandise	93
54	Food stores	147
55	Automotive dealers & gasoline service stations	279
56	Apparel & accessory stores	146
57	Furniture, home furnishings, & equipment stores	118
58	Eating & drinking places	263
59	Miscellaneous retail stores	226

Code	Title	No. of Firms
60	Banking	19
61	Credit agencies other than banks	75
62	Security & commodity brokers, dealers, exchanges, & services	14
63	Insurance carriers	107
64	Insurance agents, brokers, & service	64
65	Real estate	85
66	Combinations of real estate, insurance, loans, law offices	7
67	Holding & other investment companies	4
70	Hotels, rooming houses, camps, & other lodging places	61
72	Personal services	2 07
73	Miscellaneous business services	123
75	Automobile repair, automobile services, & garages	115
76	Miscellaneous repair services	95
78	Motion pictures	8
79	Amusement & recreation services, except motion pictures	27
80	Medical & other health services	235
81	Legal services	69
82	Educational services	21
84	Museums, art galleries, botanical & zoological gardens	4
86	Nonprofit membership organizations	76
88	Private households	
89	Miscellaneous services	68
91	Federal government	27
92	State government	15
93	Local government	9
94	International government	

CONSTRUCTION

	<u>*Total Firms</u>		<u>No. of Firms on our List</u>		
Construction	422	50	46	194	50
Building Construction General Contractors (S. I. C.) 15 (12 large firms)	129	15	39	50	13
Heavy Construction other than Building Construction - General Contractors (S. I. C. 16)	32	4	84	27	7
Special Trade Contractors (S. I. C. 17)	<u>261</u>	<u>31</u>	<u>45</u>	<u>117</u>	<u>30</u>
	844			388	

SOURCE DOCUMENT - City Directory 1970

* KSES List used as total population

CONTRACTORS - BUILDING GENERAL - S. I. C. 15

1. A & J Building Co.	5900 E. Central Ave. Rm. 201
2. *Abco Steel Erectors Inc.	1201 Pattie Ave.
3. Ace Construction Co.	316 N. Richmond
4. *Allied Building Contractors	355 N. Waco Ave.
5. Andeel & Co	5900 E. Central Rm. 201
6. Ark Valley Construction Co.	3602 W. Central Ave.
7. Blatzley Building Co.	511 1/2 N. Hillside
8. Harold Bauer Construction Co.	1112 N. Armour
9. *Biltmore Homes Inc.	1158 N. Waco
10. Bowers Luxury Homes	120 N. Handley Ave.
11. Don Bower Construction Co.	1819 N. Kessler
12. *Builders Inc.	5001 E. Harry St.
13. W. B. Carter Construction Co., Inc.	1304 Hiram Ave.
14. Chapin Contracting Co.	3800 S. Hydraulic Ave.
15. Clewal Construction Inc.	420 Acadia St.
16. Construction & Development Inc.	2022 Pattie Ave.
17. Commercial Builders of Kansas	259 S. West St.
18. *Coonrod & Waltz Construction Co., Inc.	840 N. Main
19. *Jack P. DeBoer Associates	
20. Decker Construction Co.	1655 S. West St.
21. *Dondlinger & Son Construction Co., Inc.	1206 E. Lincoln
22. Duling Construction Co.	734 N. Bebe Ave.
23. *Martin K. Eby Construction Co., Inc.	610 N. Main St.
24. Fine Homes Inc.	113 S. Hydraulic Ave.
25. France and Harrison Construction	2002 S. Pershing Ave.
26. Fredrick Construction	3233 Arkansas
27. Frontier Construction	4159 S. Seneca St.
28. *Goodvin Church Builder Service Inc.	2525 E. Central Ave.
29. Graham Construction Co.	1403 Harding Ave.
30. *Hallmark Construction Co., Inc.	2436 W. Douglas Ave.
31. Hentzen Contractors Co.	1623 S. Mead
32. Elmer Hunt Construction Co.	4118 W. 17th
33. Inland Construction Co., Inc.	732 S. Broadway
34. Frank Jantz Construction Co.	224 N. Ash St.
35. Kane & Bills Construction Inc.	759 N. Edwards
36. Roy Kilmer	212 N. Edwards
37. *The Law Co.	313 S. Market
38. Leach Construction Co.	1559 S. Water
39. M & B Investment Inc.	359 S. Hydraulic Ave.
40. McBride & Dehmer Construction Inc.	2855 Woodland Ave.
41. Mid-Continent Construction Inc.	5317 W. Harry St.
42. Mid-State Construction Co.	1130 Laura
43. Mid-Western Construction Co.	1157 N. Main St.
44. Nomain Building Co.	833 N. Main St.
45. Olander Construction Co.	314 Rutland Rd.
46. P & C Construction Co.	6405 Kellogg
47. Reynolds Construction Co.	800 E. Mt. Vernon
48. Stauffer Construction	3535 W. 13th
49. Sutherland Construction Co., Inc.	753 N. West St.
Total - 50. *Utility Contractors Inc.	610 N. Main St.

*(Suggested Larger Firms)

Heavy Construction Other Than Building Construction
(A) Contractors-Excavating and Grading-S. I. C. 16

- | | |
|---|-------------------------|
| 1. Jack D. Biser Excavating & Hauling Co. | 2033 S. Mead Ave. |
| 2. Wo Buyfield Excavating Co. | 2220 McLean Blvd. NW |
| 3. Caster Excavating & Ditching Service | 802 W. 31st St. North |
| 4. Eldon R. Clevenger | 228 N. Robin Rd. |
| 5. Glenn Davis Trenching | 4340 Bernita Dr. |
| 6. *Fields Construction Co. | 135 Nevada St. |
| 7. *L. A. Knebler Construction Co. | 405 E. 7th St., Augusta |
| 8. Lawrence Lies Excavating | 242 S. Young |
| 9. *Bud Redmond Excavating Co. | 3701 Elmwood Dr. |
| 10. *Jim Roper Excavating & Landscaping Co. | 317 N. Nevada St. |
| 11. De Brot Bros. Construction Co. | 1235 N. Gow Ave. |
| 12. Severs Ditching Service | 1602 Westridge Dr. |
| 13. *Sherwood Construction Co., Inc. | 4421 W. Harry St. |
| 14. *Thomas Excavating & Hauling | 154s S. Bebe Ave. |
| 15. *Wichita Trenching Service | 1208 S. Washington Ave. |

(B) Contractors-Drilling

- | | |
|-----------------------------------|---------------------------|
| 1. Bore & Tunnel Contractors Inc. | 416 Union Center Bldg. |
| 2. Sage Drilling Co., Inc. | 107 N. Market St. Rm. 500 |

(C) Contractors Concrete and Paving

- | | |
|---------------------------------------|----------------------|
| 1. J. H. Brown | 2118 E. 19th St. |
| 2. Burris Cement Contractors | 4320 E. Clark St. |
| 3. Dale J. Clark | 1601 Payne Ave. |
| 4. James E. Coffey | 4558 S. Handley |
| 5. Lloyd F. Gillette | 1702 S. Vine St. |
| 6. *Harris Concrete Construction | 761 N. St. Paul Ave. |
| 7. *Miles Kaiser Concrete Contractors | 2331 S. Osage Ave. |
| 8. *Mid-Kansas Construction Co., Inc. | 1245 S. Santa Fe. |
| 9. *Ritchie Construction Co., Inc. | 1820 N. Mosely |
| 10. *M & D Construction | 1307 Brady St. |

SPFCIAL Trade Contractors - S. I. C. 17

(A) Carpenter-Contractors

- | | |
|--------------------------|------------------------|
| 1. Arnold J. Ammann | 2048 S. Glenn Ave. |
| 2. Judson W. Athey | 1709 Dallas St. |
| 3. Earnest C. Barton | 1225 Lulu Ave. |
| 4. Arlo M. Bauer | 545 S. Edgemoor Dr. |
| 5. Willie Christian | 1215 N. Santa Fe. Ave. |
| 6. James G. Goentzel | 1220 N. West St. |
| 7. Frank J. Herbert | 801 N. Flora |
| 8. Wallace E. Hess | 1715 S. Grove |
| 9. Elmer L. Ross | 1443 S. Main |
| 10. William L. Starr Jr. | 3631 N. Topeka |
| 11. Louis H. Staub | 1621 S. Moseley |
| 12. Harold R. Veatch | 861 Lexington Rd. |
| 13. Kenneth P. Woolf | 802 Franklin Ave. |
| 14. Cleon S. Young | 651 S. Rutan Ave. |
| 15. Harry L. Zollinger | 1952 Hood Ave. |

(B) Contractors Dry Wall

- | | |
|---------------------------------|------------------------|
| 1. Alexander Bros. Dry Wall Co. | 3427 W. 11th St. |
| 2. Edgar V. Baumchen | 2108 E. Mt. Vernon Rd. |
| 3. John I. Burke | 841 N. Gow Ave. |
| 4. Louis M. McGill | 428 N. Flora |
| 5. Nichols Dry Wall | 1715 N. West St. |
| 6. Ronald H. Moore | 835 S. Millwood |
| 7. Parkhurst Dry Wall Co. | 2743 N. Waco |
| 8. Robert E. Tucker | 533 N. Bebe Ave. |
| 9. Ira Penn Dry Wall Contractor | 3200 Carlock St. |
| 10. Vandermeer Dry Wall | 1527 N. Oliver |

Contractors-Home Improvement

- | | |
|--|----------------------------|
| 1. Bennets Home Improvement Co. | 3312 S. Millwood Ave. |
| 2. Clyde L. Biggs | 1158 S. Minnesota Ave. |
| 3. Coffman Home Improvement Co. | 820 Figg Ave. |
| 4. Happy Improvement Co. | 2107 S. Estelle Ave. |
| 5. Home Remodeling Co. | 1112 N. Market St. |
| 6. South Central Kansas Improvement Co. | 1546 N. Emporia Ave. |
| 7. Joe Wycoff Home Improvement | 2926 S. Vine |
| 8. South Central Kansas Improvement Co. | 1546 N. Emporia |

Contractors Insulating

- | | |
|---------------------------------|------------------|
| 1.* Insul-Wool Insulation Corp. | 121 N. Dodge |
| 2.* Ludeman Insulations Inc. | 235 N. Waco Ave. |
| 3.* Todd Roberts Insulation Co. | 514 W. 29th St. |
| 4. Travis Insulation Co. | 3734 N. Emporia |
| 5. S. M. Wilkin Jr. | 557 Elpyco Ave. |

Contractors-Lathing

- | | |
|-------------------------------|------------------|
| 1. J. W. Prothero Lathing Co. | 2131 S. Main St. |
|-------------------------------|------------------|

Contractors-Mason

- | | |
|--|------------------------|
| 1. John D. Belt | 2858 N. Edwards Ave. |
| 2. Born Bros Inc. | 2002 W. 31st St. North |
| 3. Charles H. Christner | 2701 W. Elm St. |
| 4. Harold Coon & Son Masonary Contractor | 4303 Memory Lane |
| 5. Doffing's Masonry | 2514 S. Minnesota |
| 6. Ray L. Friesen | 1904 Burns Ave. |
| 7. Max O. Hawkind | 2631 N. Edwards Ave. |
| 8. Virgle Jones | 3639 Arkansas |
| 9. Carl H. Lundberg | 112 S. Parkwood Lane |
| 10. Williams Brothers Masonry | 2501 S. Osage |

Contractors Painting & Decorating

- | | |
|--|----------------------------|
| 1. B & B Decorating | 1835 Palisade |
| 2. Albert W. Ballard | 1027 N. Water |
| 3. James A. Bennett | 811 N. St. Paul |
| 4. Jack W. Clevenger | 4023 Memory Lane Apt. 3 |
| 5. Debbrecht Decorating Co. | 1203 S. Minneapolis Ave. |
| 6. Deforest Painting & Decorating | 1814 Geo. Washington Blvd. |
| 7. Robert R. Flores | 2402 Somerset St. |
| 8. Dale B. Hansen | 1257 Ellis Ave. |
| 9. Harvey W. Jones | 124 S. Poplar St. |
| 10. Mickey Kaiser Painting Contractors | 1100 1/2 E. Douglas Ave. |

Contractors-Roofing and Siding

1. *American Roofing & Sheet Metal 447 Windsor Rd.
2. *Best Roofing Co. 400 N. West St.
3. Buckley Construction Industries 1600 E. Murdock Ave.
4. *E. G. Cherry Roofing Co. 211 N. Estelle Ave.
5. Dobson Roofing Co. 1717 E. 2nd St.
6. *Federal Roofing & Contractors Inc. 3205 N. Broadway
7. E. H. Henery 127 N. Sycamore
8. *Holland Roofing Co. 7819 W. Kellogg
9. Kimple Roofing 2143 S. Hydraulic
10. *Ralls Inc. 135 N. Hillside

Contractors-Plumbing

1. B & D Plumbing Service 340 Piatt Ave.
2. *Coleman Plumbing and Heating 1937 Wellington Place
3. *Fredrick Plumbing and Heating Inc. 815 N. Main St.
4. *Kennedy Plumbing and Heating 1017 E. Pawnee
5. *Kendall Inc. 1647 Laura
6. Moon & Gills Plumbing Inc. 1523 Pattie
7. Nelson Plumbing & Heating 2200 S. Terrace Dr.
8. *Pray Brothers Inc. 120 Ida
9. *Riggs Plumbing Co., Inc. 2514 W. Douglas
10. Quality Plumbing & Heating 1725 E. 2nd St.

Contractors-Concrete

1. H. J. Brown 2118 E. 19th St.
2. Burris Cement Contractors 4320 E. Clark St.
3. Dale J. Clark 1601 Payne Ave.
4. Lloyd F. Gillette 1702 S. Vine Ave.
5. Harris Concrete Construction 761 N. St. Paul Ave.
6. Miles Kaiser Concrete Contractors 2331 S. Osage
7. M & D Construction 1307 Brady St.
8. Harry W. Perry 1319 S. Hydraulic Ave.
9. Jack Steele 539 N. Florence Ave.
10. John E. Whitney 3536 Fairview Ave.

Contractors-Fence Erecting

1. Hough Fence Co. 212 Wabash Ave.

Contractors-Floor Surfacing

1. *Johnnie Bell Floor Co. 801 W. Douglas Ave.
2. Freel C. Diggs 1809 Payne Ave.

Contractors Flooring

1. Ernest W. Cattrell 1805 Elpyco
2. Leslie A. Douglas 1832 Woodland Ave.

"THE REMAINDER OF THIS SECTION, BEING MORE
THAN 200 PAGES OF SIMILAR INFORMATION, HAS
BEEN OMITTED. IT IS AVAILABLE FOR INSPEC-
TION IN THE MAPD OFFICE."

V. FUTURE USES OF THE INPUT-OUTPUT TOOL

The input-output framework is essentially a description of an economy as it is functioning at a given point in time. Such a description, in and of itself, is of interest to analysts. However, the principle usefulness of the tool is not merely its descriptive ability but the role it can play in the analysis of problems in the region. In this respect, the input-output tool has probably been over-credited by its staunch supporters but underrated by its detractors. The system is a good and useful tool if applied properly and the results interpreted in light of the restrictions involved in the basic nature of the matrix.

The two most common uses of input-output techniques are short-range forecasting and impact analysis. Forecasting ability is not inherent in the input-output matrix. The model essentially depicts an equilibrium condition in the economy. However, once estimated changes in the level of final demand (consumption of goods and services produced in the community) are projected or experienced, the the I-O tool may be utilized to project or reveal the distribution of this change on the producing sectors of the local economy.

Such an analysis can provide benefits for both public and private decision makers. For example, the projection of the transactions matrix can be used as an input in planning manpower requirements for the community through the indications of expanding or contracting lines of activity as a result of an estimated change in demand. Estimated expansion or contraction of given lines of activity is useful information in the planning process in gauging the resultant physical changes that may occur in the community. The possibilities of such forecasts for both private and

public sectors are well illustrated by the recent use of the State I-O matrix in estimating the future structure of the Kansas economy.

Impact analysis is really a form of forecasting. The major emphasis, however, is placed on marginal changes in the economy as opposed to overall changes in the level of demand. The type of analysis performed under this procedure is essentially one of determining the end result of a change in some element in the economy such as the addition or deletion of a major firm, the expansion of some given line of activity within the community, or an increase in public or private capital construction. The results of such changes can be measured in terms of income, employment, or output. This particular technique has been used rather extensively by the Kansas State Department of Economic Development in its industrial inducement programs.

The use of the I-O analysis as a part of future research efforts must also be considered. While no specific projects are here suggested, the tool is available to those who desire to make use of it as a part of their analytical efforts.

Hawbaker

August 30, 1972

Mr. Walt Kenney
900 Vickers-KSB&T Building
Wichita, Kansas 67202

Dear Walt,

The Wichita-Sedgwick County Metropolitan Area Planning Commission is preparing to enter into a contractual agreement with Wichita State University's Center for Business and Economic Research. This contract represents Phase 2 in the economic analysis and forecasting component which began last year with the updating, expansion, and refinement of the Sedgwick County Input-Output tables. Phase 2 uses these tables as a basis for short-range economic forecasting.

Last year's contract hit a snag in the County Commission, causing a delay in signing and subsequent execution of the contract. The resulting delay has caused several problems in completing the study, including an extension to the contract period. I hope to avoid possible delays this year by asking you to review and evaluate the proposal and contract prior to taking it to the County Commission. Attached for your consideration, therefore, are documents related to the projects from the Request for Proposals to the negotiated contract.

It would probably be helpful to discuss the contract either by phone or in person, at your convenience. We would like to put the Resolution on the County Commission Agenda for September 20, 1972.

Sincerely,

Bob Hawbaker
Junior Planner
Advance Plans Division

CRH:jl

Attachments

WICHITA-SEDGWICK COUNTY

DATE August 24, 1972

METROPOLITAN AREA PLANNING DEPARTMENT

TO Willard L. Stockwell, Chief Planner, Advance Plans Division
FROM Bob Hawbaker, Junior Planner, Advance Plans Division
SUBJECT Economic Forecasting Component of 1972-73 #701 Grant

Today members of the Advance Plans staff met with the representative of Wichita State University to discuss the Scope of Services portion of the Contract for Personal Services. Present at this meeting were: Dr. Norman Weed, Assistant Director of the Center for Business of Economic Research at WSU, Bill Stockwell, Bob Hawbaker, and Dick Mathews, all of MAPD's Advance Plans Division.

The Scope of Services will be composed of three basic items in regard to economic forecasting:

1. Short-range estimate of population, based on current population measures, migration data, and employment characteristics.
2. Short range estimate of employment
 - A. Skill loss due to outmigration
 - B. Job shifting within the labor marketData for this estimate will be gathered via mail-out questionnaire.
3. Induced effects of changes in the population and labor force on secondary and service industries.

The contract will be put together at WSU and should be in our hands for review by August 28 or 29. The HUD boilerplate in the contract will remain basically the same as last year's except:

1. MAPD will again specify that Dr. Norman Weed will be the principal investigator, and
2. WSU will specify that the contract will be based on a September to June project period, and that delays in the beginning of the contract will automatically extend the contract period.

Willard L. Stockwell
Page 2

O.K.
I have therefore, tentatively planned to prepare the contract and resolution for consideration by the Planning Commission on their meeting of September 7, 1972. I will prepare the resolution and contract for review by the Law Department prior to placing it on the agenda.

O.K.
I feel we should attempt to get a resolution before the City Commission on September 19 and a similar resolution before the County Commission on September 20. I will prepare cover memos for both of these resolutions.

Yes
In view of the delay caused by the deferral of last year's contract by the County Commission, I suggest that Walt Kenney review the proposal and contract, and that his recommendation accompany the materials to the County Commissioners.

BH:rw

WICHITA-SEDGWICK COUNTY

DATE

METROPOLITAN AREA PLANNING DEPARTMENT

August 4, 1972

TO Wichita-Sedgwick County Metropolitan Area
Planning Commission

FROM Willard L. Stockwell, ^{WLS} Chief Planner, Advance Plans Division

SUBJECT Economic Forecasting component of the
1972-1973 Comprehensive Planning
Assistance Grant (701)

As a component of the 1971-1972 Comprehensive Planning Assistance Grant (701) Program, the Metropolitan Area Planning Department contracted Wichita State University's Center for Business and Economic Research to update and expand the existing Input-Output tables for Sedgwick County. Input-Output tables measure the inter industry dollar flow within and without the study area. The table is a tool for economic analysis and forecasting.

The next phase of economic analysis for Sedgwick County is to put the Input-Output tool to work. To this end, the Metropolitan Area Planning Department has issued Requests for Proposals (RFP's) to the three local colleges (see Attachment 1). The colleges were allowed twenty (20) days to formulate research proposals. (Extensions would have been granted if necessary.)

Of the three colleges notified, only one responded, the Center for Business and Economic Research at Wichita State University. The Center is currently completing work on the 1971-1972 Economic analysis component. The Wichita State proposal (Attachment 2) is included for your review.

It is the opinion of the MAPD staff that the Wichita State University proposal meets all of the requirements set forth in the RFP. Fundamentally, the proposed research will investigate the effects of changes in employment levels in Sedgwick County's dominant aerospace industry on various economic activities, such as unemployment, trade and service industries, and population base.

In our opinion, the Center for Business and Economic Research is well qualified to undertake the next phase of economic analysis. While the Input-Output study, the product of the 1971-1972 component, is not yet complete, preliminary documents are attached for your inspection. Attachment 3 discusses the methodology used in building the Sedgwick County Input-output Matrices. Attachment 4 describes the types of data and data sources drawn upon. Attachment 5 lists the sample base of firms interviewed in the data collection phase by name, address, and Standard Industrial Code classification. Attachment 6 discusses the continuing nature of economic analysis using Input-Output Matrices as a research tool.

Page 2 - Metropolitan Area Planning Commission
August 4, 1972

In view of the fact that only one proposal was received, and that that proposal meets all of the requirements of the RFP, it is recommended that the Director of the Metropolitan Area Planning Department be authorized to enter into contract negotiations for consulting services with Wichita State University for the purpose of conducting economic forecasting in Sedgwick County.

WIS:CRH:ber

Attachments



WICHITA STATE UNIVERSITY

Attachment 2

WICHITA, KANSAS 67208
PHONE 316/685-9161

DEPARTMENT OF ECONOMICS
COLLEGE OF BUSINESS ADMINISTRATION

July 21, 1972

Mr. Willard L. Stockwell
Metropolitan Area Planning Department
104 South Main Street
Wichita, KS 67202

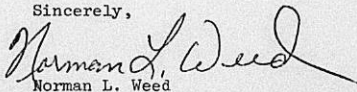
Dear Mr. Stockwell:

In response to your letter of July 3, 1972, I am enclosing a proposal for a research project concerning the analysis of economic activity in Sedgwick County in behalf of the Center for Business and Economic Research, Wichita State University.

Any questions you may have about the proposal may be directed to me at W.S.U., 685-9161, Ext. 547.

We wish to thank you for considering us in your request for proposals.

Sincerely,


Norman L. Weed
Associate Director

NLW:mb

Enc.



PROPOSAL SUBMITTED TO THE WICHITA-SEDGWICK COUNTY METRO-
POLITAN AREA PLANNING DEPARTMENT FOR A GRANT IN SUPPORT OF
RESEARCH AND ANALYSIS OF ECONOMIC ACTIVITY IN SEDGWICK COUNTY
UNDER THE PROVISIONS OF A REQUEST FOR PROPOSAL DATED JULY 3,
1972.

SUBJECT: A Proposal to Measure the Impact of Changes in Demand for the
Output of a Dominant Industry in a Small Region

PROJECT TITLE: A Study of the Economic Impact of a Reduction in Aerospace
Employment in Sedgwick County, Kansas

SUBMITTED BY: Center for Business and Economic Research
Wichita State University
Wichita, Kansas 67208

Telephone: 685-9161, Ext. 547

I. Background

A region that contains an industry that tends to dominate the local labor market possesses a mixed blessing. If demand for the output of such a dominant industry is strong and increasing, then an obvious "good" ^① direct impact appears in the form of increasing job opportunities and rising income streams. An indirect impact will also occur in the region ^② as other local industries which act as suppliers to the dominant industry increase their output in response to the initial rising demand. ^③ A third type of impact will take place, the induced effects, as workers began to spend new or increased incomes and thereby increase the demand for consumer goods and services in the region.

If the demand for the output of a dominant industry is falling, however, the economic forces will be of an adverse nature. The region will experience declines in employment, subcontracting and supply orders, income streams, and demand for goods and services. If the decline appears to be of a fairly long duration, the region may well experience out migration of population with a concurrent loss of desirable skills from the local labor pool.

The impact of major fluctuations in the output of a dominant industry will be reflected in most phases of economic activity in a community. The degree of intensity, and hence the overall loss, that will be experienced depends upon the extent of industrial interrelationship that prevails in the local economy, the labor intensive nature of the industry, the skills required in the industry's process, and the level of wages paid. A labor intensive industry with high wage levels and drawing heavily from local suppliers would obviously have a greater impact than an industry lacking any one of these criteria.

The aerospace industry has long been recognized as a dominant industry in Wichita and Sedgwick County. Employment in this industry accounts for approximately one half of total manufacturing employment in the Wichita S.M.S.A. and 12 percent to 15 percent of total employment. The industry is also recognized for its high wage structure. Since the industry serves two broad market categories, civilian and governmental, the demand for its output is affected by both cyclical and fiscal forces - either of which may cause large variations in the level of employment. The impact of such swings in aerospace activity have been felt in Wichita over the past three decades and will most likely be experienced again in the future.

The broad, overall impact of a decline in aerospace activity appears to be evident to the general population in the region. It is difficult to ignore a rate of unemployment in excess of 10 percent of the workforce. But the differential impacts on the various segments of the community are not known and it is the differential impacts that are the prime ingredients for short-run forecasting and planning.

Start here

II. The Proposal

It is proposed that the impact of changes in employment levels of the aerospace industry be investigated in Sedgwick County. The project would encompass estimates of the effects of such shifts on three levels of activity: (1) the direct impact relating to the aerospace industry, (2) the indirect impact involving secondary or supplying industries, and (3) the induced impact on trade and service activities. The variables to be investigated would be as follows:

1. Income
2. Employment - primary and secondary
3. Population shifts in the form of out-migration

4. Skill loss in the labor force
5. Job shifting of non-migrants
6. Induced affects in trade and service industries

The basic questions to be approached in the study involve changes that will occur in the County during the process of reducing employment in aerospace activities. Changes in the above variables will leave the community in a somewhat different condition economically and socially at the end of the process than it was at the beginning. For purposes of forecasting, it is important to know the size, type, and relationship of the impact in each case. What is the loss in income and where does loss take place other than with the worker who is terminated at the aircraft plant? What are the changes in the labor force - how many persons leave and with what skills - how many persons stay and take job opportunities that require less skill? Finally, what is the impact in terms of the business groupings that normally serve the individual as a consumer of goods and services?

Final Product

The results of the study should yield estimates as to the amount of income loss incurred by the reduction in employment both by aerospace and non-aerospace workers. Shifts in employment, starting with the initial unemployment in the dominant industry and progressing to unemployment created in secondary or supply industries, job shifting by workers involving potential underemployment, and skill loss through out-migration, may also be illustrated. The impact on the county population base may be estimated through the process of measuring aerospace related out-migration. By combining other available tools and research with the information to be obtained in the study, some estimates of induced effects may be generated.

III. Methodology

Personal & Industrial

The basic design of the proposed research project is to use both mail and personal surveys. The results of the surveys will be combined with available secondary data pertinent to the selected variables.

sample secondary industry

Personal surveys will be conducted with firms only and will consist of two types. Interviews will be conducted with the major firms involved in aircraft manufacturing to obtain data relevant to the direct impact of the reduced employment and to assist in identifying secondary industries. The second group of interviews will then be conducted with a sample drawn from firms classified as direct suppliers to aircraft manufacturers for data concerning secondary impacts.

5000 questionnaires mailed

Approximately 5,000 questionnaires will be mailed to individuals in four sets of samples consisting of the following types:

1. Aerospace out-migrants
2. Aerospace non-migrants
3. Non-aerospace worker migrants
4. General

The survey results will be combined with secondary data available on local income and employment to expand the sample data.

3 years Time Period started work to be completed by Mar 31, 1973

The time period covered by the study will involve the years 1969, 1970, and 1971. This period should be sufficient to include the major portion of the downward phase of the cycle.

The estimated time necessary to conduct the study is nine months beginning September 1, 1972 and ending May 31, 1973.

IV. Relationship to Prior Projects

The proposed study will be structured so as to be consistent with the framework provided by the existing Sedgwick County Input-Output matrix.

The results of the study will provide input into the matrix for further analysis of the process of change in the region. The data may also serve

to provide the basis for further refinement of selected sectors within the matrix.

Other related research is also available or in progress that will complement the results of this study. A project involving the investigation of multijobholding in the region is currently being conducted at Wichita State University under the direction of Dr. Glenn Miller. Multijobholding, if extensive, would have an impact on the extent of unemployment registered and income maintenance. Prior research has also been conducted at Wichita State University into the determinants of migration of a segment of unemployed aerospace workers. This research, while covering only a portion of the population contemplated in the proposed study, will provide information related to the questions under investigation.

V. Proposed Budget

<u>Item</u>	<u>Amount</u>	
	<u>Grant</u>	<u>W.S.U.</u>
Research Associates (2), 9 months @ \$300	\$5,400	
Research - Faculty, 1/4 time		\$3,500
Secretarial assistance, 1 month equivalent @ \$400	400	200
Clerical assistance, 2 months equivalent @ \$100	200	
Computer time, card punching, and programming	2,000	500
Supplies, telephone, miscellaneous	500	
Reproduction - questionnaires and report	300	
Postage	300	
Indirect costs (Grant share @ 10% of Grant costs excluding indirect)	<u>900</u>	<u>4,500</u>
Total Budget	<u>\$10,000</u>	<u>\$8,700</u>
Grant	\$10,000	
W.S.U.	<u>8,700</u>	
Total	\$18,700	

Attachment 1

July 3, 1972

The attached letter was sent to the following on July 3, 1972:

Dr. F. O. Woodard
Center for Business and Economic Research
Wichita State University
1845 Fairmount
Wichita, Kansas 67208

cc: Fred Sudermann
Dr. Richard Zody

Dr. Howard R. Tuttle
Department of Economics
Friends University
2100 University
Wichita, Kansas 67213

Dr. George R. Hill
Department of Economics
Sacred Heart College
3100 McCormick
Wichita, Kansas 67213

You are invited to submit a proposal for research and analysis of economic activity in Sedgwick County. Various aspects of employment will be examined as it relates to the following areas:

1. Effect of changes in employment levels in major industries of:
 - ✓A. Income structure
 - ✓B. Employment in secondary industries
 - C. County population
 - D. Service industries
 - E. Labor force characteristics
2. Short-range forecasting for the above elements based on:
 - A. Input-output tables for sedgwick County
 - B. Other data collected as necessary.

Background

This study will be funded as a component of the Planning Department's 1972-1973 Comprehensive Planning Grant from the U. S. Department of Housing and Urban Development (HUD). The Economic Analysis component this year is the second in a series of studies leading to a greater understanding of the economic structure and functions in Sedgwick County. The current study (under the 1971-1972 grant) is constructing an updated and expanded Input-Output Table for the County. The Metropolitan Area Planning Department (MAPD) now desires to use the Input-Output model in the development of a framework for analysis and testing of assumptions about economic growth and change. Further, MAPD desires to develop short-range forecasts for employment by sector and by labor force characteristics.

Consultant Responsibility

Under the terms of the contract, the consultant will be expected to perform all phases of the negotiated scope of services. The consultant will provide all office space, materials, computer time, and personnel. The consultant will be expected to submit monthly progress reports and a final report. All data, computer programs, documentation, and reports will become the property of MAPD.

Time of Study

The consultant will be expected to complete all work under the contract no later than June 1, 1973.

Proposals

Proposals are to be submitted to MAPD by July 23, 1972, and must include the following elements:

- A. Statement of familiarity and experience with Input-Output Models
- B. Statement of computer capabilities
- C. General discussion of study objectives and work program

A preliminary delineation of sectors in the Input-Output tables is attached.

A total of \$10,000 is available under the 1972-1973 grant for this project. Proposals should include a preliminary budget for expenditure of funds.

From the proposals submitted, a consultant will be selected by the Metropolitan Area Planning Commission (MAPC) and a contract negotiated.

This request for proposals should in no way be interpreted as a commitment to award contract, pay any cost in preparation in reply to this request, or to procure or contract for services or supplies. MAPC reserves the right to accept or reject any or all proposals or portions thereof received as a result of this request, to negotiate with any qualified source or to cancel this request for proposals in part or in its entirety. MAPC may require the consultant selected to submit during negotiation such prices, technical information, and other revisions of their proposals as may be required.

Please address all inquiries regarding this Request for Proposal
to Bob Hawbaker or Bill Stockwell - 262-0611, Extension 205.

Sincerely,

Willard L. Stockwell
Chief Planner
Advance Plans Division

WLS:CRH:ber

Attachment