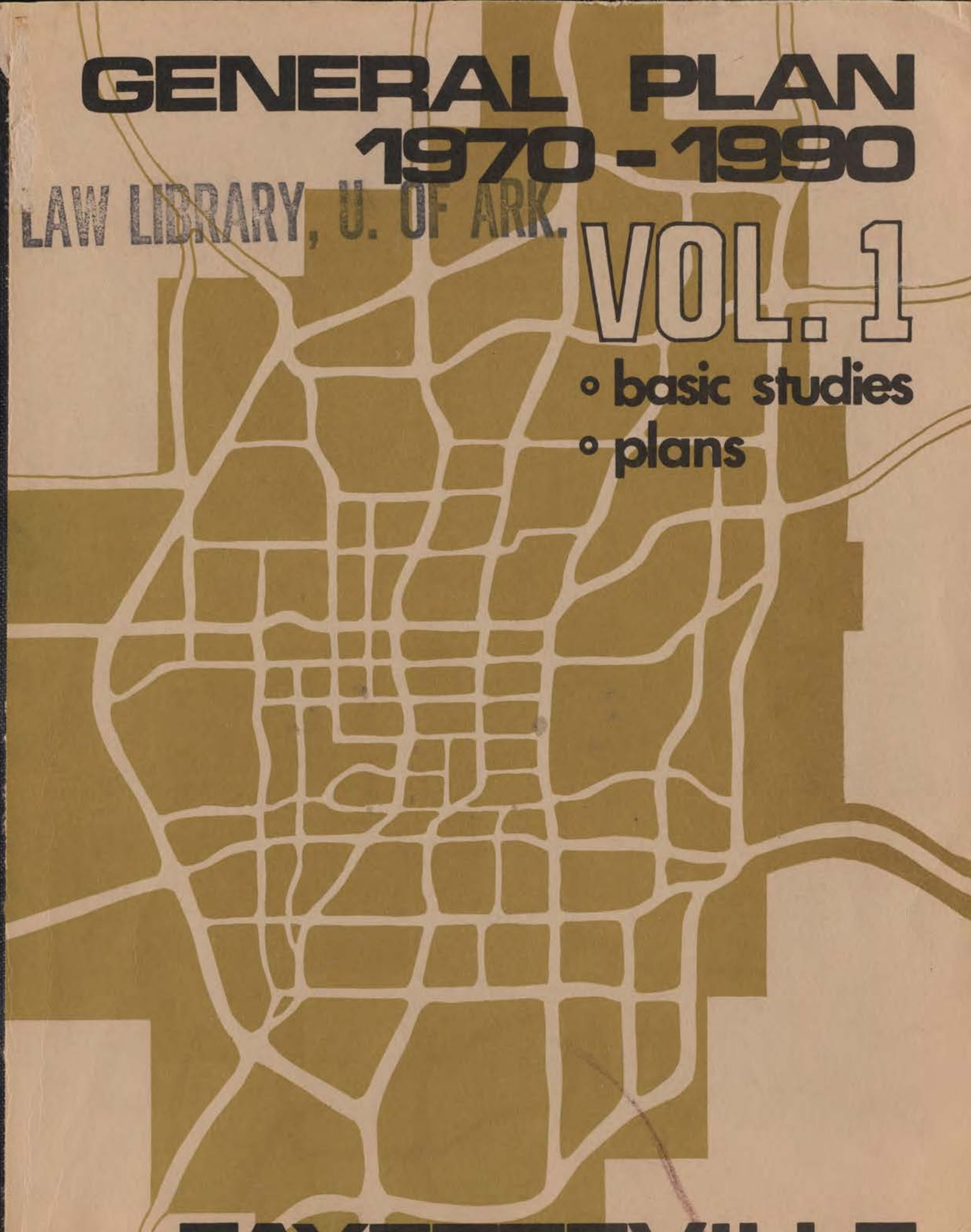
GENERAL PLAN 1970 - 1990

VOL. 1

- basic studies
- plans



FAYETTEVILLE ARKANSAS

a general plan for fayetteville, arkansas

volume I part 1 basic studies
part 2 plans

volume II part 3 finance and regulations

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October 1969

Prepared for the FAYETTEVILLE PLANNING COMMISSION

By JAMES A. VIZZIER, CONSULTING PLANNER

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ABSTRACT

TITLE: A GENERAL PLAN FOR FAYETTEVILLE, ARKANSAS

AUTHOR: James A. Vizzier, Consulting Planner

SUBJECT: A comprehensive plan including basic planning studies, the resulting plans and devices to implement the plans

DATE: October 1969

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FAYETTEVILLE, ARKANSAS

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CITY ADMINISTRATION BUILDING
FAYETTEVILLE, ARKANSAS

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ABSTRACT:

There are about 30 growing communities in Northwest Arkansas. Fayetteville is the largest of a dozen communities along Highway 71 in Washington and Benton Counties that form an urban area with a population of about 70,000. Fayetteville's population is nearly one-half the population of this urban area and one-fourth that of the two-county region.

Most of the communities in this urban area have grown together and they share common problems and growth patterns. The region is connected by Highway 71 with Interstate 40 on the south and Interstate 44 on the north. Recent growth has been based on industrial development but there is potential for tourism and regional commercial activities.

The University of Arkansas student body makes up one-third of the population of Fayetteville and one-tenth of the population of the two counties. The City is strongly affected by activities of the University and adjoining communities.

As the county seat and the site of the University of Arkansas, Fayetteville is the regional trade center. During the next 20 years regional population is expected to double. If Fayetteville continues to expand services to the University and the region, it will double in population and activities.

PREFACE

Fayetteville has had a partial plan for nearly ten years but its plan was developed for an independent community scarcely one-half the present size. During this period the City has developed a strong industrial base, the University enrollment has tripled and the small communities in the region have grown together into a metropolitan complex. Fayetteville is now part of a rapidly growing urban area of 75,000 people. The change in size and rate of growth has made the old plan obsolete. It is no longer a dependable guide for making decisions.

This report is a thorough restudy of conditions in Fayetteville and the surrounding area. Data has been updated and expanded. Plans have been revised, detailed and enlarged. Regulations and financial programs have been refined. These elements of the General Plan have been put into a form that can be updated and revised easily as new data becomes available.

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SHOWING FAYETTEVILLE PLANNING AREA

The Existing Land Use Pattern

Fayetteville is situated on a crescent-shaped plateau that curves from Prairie Grove east and north and west to Bentonville. Fayetteville is on the southeastern edge of the plateau with hills behind it on the south and east. The plateau is about 1100 to 1200 feet above sea level and the nearby hills rise 500 to 600 feet higher.

The terrain has had a decided and sometimes unfortunate effect on the pattern of land use, streets and utilities. Through streets and roads follow the stream valleys while those that cross steep grades tend to be short and discontinuous. Early settlers tended to build their houses on the hills while farming the creek bottoms. This pattern still prevails with residential areas on the hills and businesses along the highways.

The City is located on the divide between the White River watershed on the east and the beginnings of the Illinois River watershed on the west. The City's water supply and waste treatment plants have always been on the White River side because that is the larger watershed with larger supplies of water and less danger of pollution. Water and sewer service are simpler on the east side of the City.

The location of the University of Arkansas Campus on the west side of the City has encouraged growth to the west in spite of the difficulty with utility service.

The present limits of Fayetteville contain 35 square miles. Before the latest annexation it contained 17 square miles. About 11 square miles are developed intensively with the rest undeveloped or sparely developed. Within the planning area there are about 112 square miles.

The planning area is the developing area for which the City may prepare plans, ordinances and regulations. It is limited to five miles from the city limits or half the distance to a nearby community whichever is less. In the case of Fayetteville, it is limited on the north, west and south by Springdale, Johnson, Tontitown, Farmington, Greenland and Elkins, but it is practically unrestricted to the east.

There are two reasons for the low proportion of developed land in the City of Fayetteville. The City recently doubled its area by annexation and much of the terrain is unsuitable for development. This is punctuated by flat-topped hills separated by sloping valleys. The hill tops and valleys are suitable for development. The steep slopes and the stream beds in the valleys are not suitable for intensive development.

Generally, the highways through the City and the Frisco Railroad conform to this terrain. The City streets, the buildings, and

the land use patterns have not respected the terrain and the result has been an inefficient pattern of development with bypassed land, discontinuous streets and poorly sited buildings.

Using the 1965 city limits containing 17 square miles, 2000 acres are in steep grades, and 700 acres are assigned to water courses of streams. This leaves about 8000 acres available for buildings and nearly 7000 acres are developed. Much of the rest is the result of inefficient platting.

	Acres	%
Developed	6,721	60%
Normal Vacancy	1,650	13%
Unsuitable Terrain for Intensive Development	2,150	9%
Bypassed Land - Poor Platting	1,075	18%
	11,585	100%

Within the planning area, but outside of the city limits, about 18,000 acres or 25% of the land is rendered unsuitable for intensive development by steep grades or drainage problems.

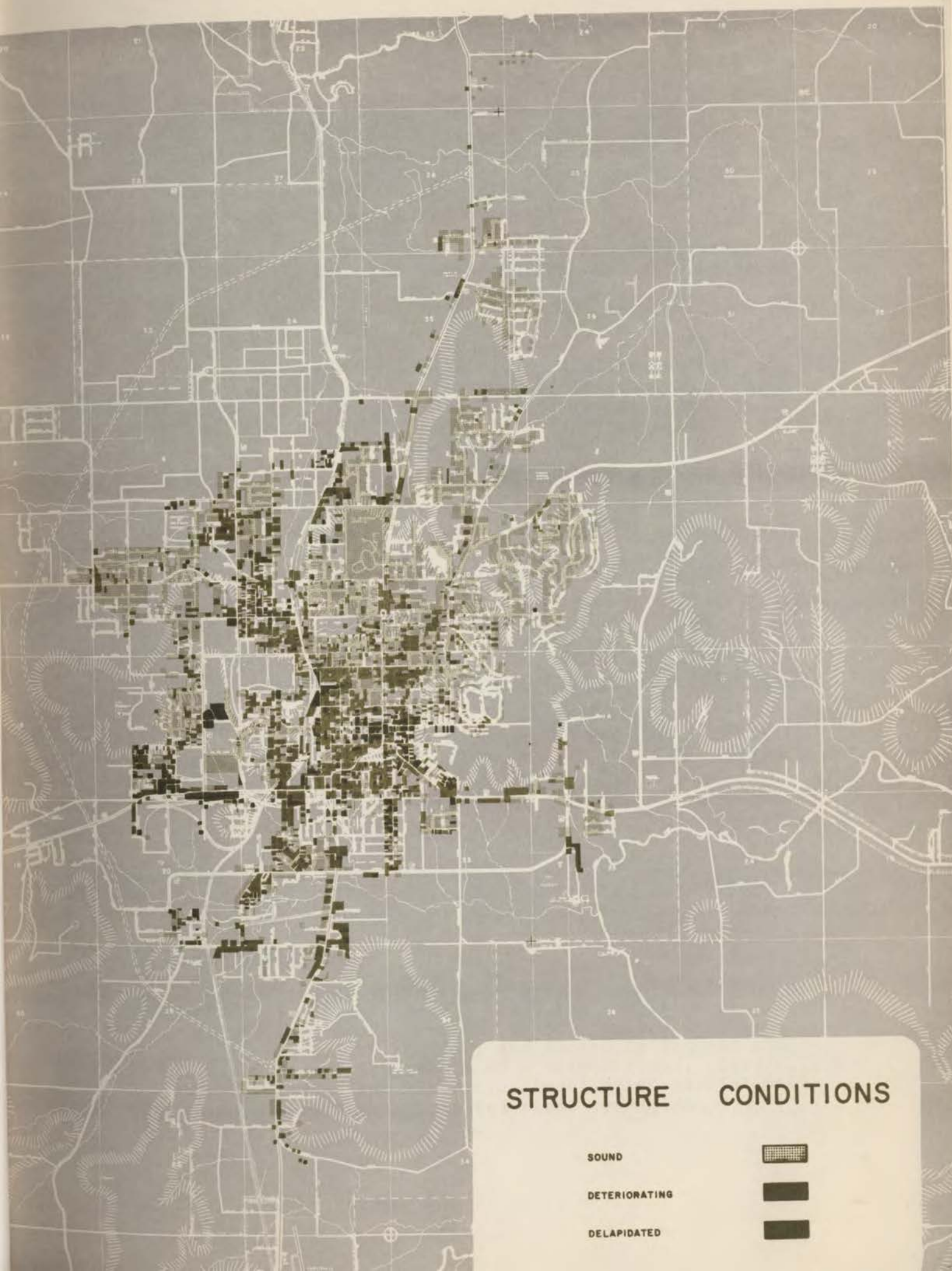
Patterns of Change

Land use patterns reflect, in a delayed way, the kinds of activities that are present in a city or region. Over the past fifteen years the activities in Fayetteville and Northwest Arkansas have changed rather dramatically. And they have changed at an ever increasing rate.

Since the older areas of the City have become more congested, residences, businesses, and industries have tended to spread in a haphazard fashion along existing highways and utility lines. There has been little planning of new areas for a particular type of development. There have been few attempts to change older areas from one type of use to another. As a result, the central business district and the University of Arkansas campus are surrounded by obsolete and congested residential neighborhoods. There is very little room for horizontal expansion to accommodate new buildings or parking.

As businesses have located along existing traffic arteries, these arteries have become shopping streets and they have lost their value as traffic movers. Congestion in the residential areas around the business district, along commercial streets and around the University has speeded the deterioration of living conditions. At the same time, schools, playgrounds and churches have moved out to larger, cheaper sites near the newer residences and businesses.

These changes in activities have left congestion and decay in the core areas around the business district and the University.


STRUCTURE CONDITIONS
SOUND
DETERIORATING
DELAPIDATED

They have caused scattering and mixing of businesses, homes and industries on the fringe of the City. These two types of areas are connected by streets that are lined by a random mixture of residential, commercial and industrial uses. These streets are too congested to move traffic efficiently and the commercial uses along them are too scattered to form an efficient shopping area. In short, rapid growth has brought decay and sprawl.

Table 1 lists the types and amounts of land employed by various activities in the City and Planning Area. The accompanying maps show the distribution of these uses.

Structure Conditions

Age and changing patterns of activity are apparent in many of the older areas of the City. Decay and obsolescence have caused residents to move to other areas instead of remodelling.

Age of Housing Units

	Number	% of Total
Built 1960-1966	1,394	16.74
1955-1960	1,170	14.05
1950-1955	920	11.04
1940-1950	1,477	17.74
before 1939	3,365	40.42

Conditions by Use

	Residential	Commercial	Industrial	Public & Semi Public
Acres:				
Sound	1,297	170	121	695
Rehabilitation	593	165	7	787
Clearance	117	66	50	50
Total	2,008	402	177	1,532
Units:				
Sound	4,603	167	9	78
Rehabilitation	3,183	217	6	52
Clearance	540	204	34	84
Total	8,326	588	49	214

Neighborhood Conditions

Living conditions and property values in some neighborhoods depend on public facilities as well as on the condition of private property. Street conditions, parking space, surface drainage, utility service, sanitation service, and access to schools and playgrounds all affect the vitality of a neighborhood. Inefficient platting of steep grades and the encroachment of commercial uses into residential areas have aggravated these conditions.

Table 1

SUMMARY OF LAND USE ACTIVITIES WITHIN THE CITY LIMITS AND PLANNING AREA OF FAYETTEVILLE: 1966

Land Use Classification	City Limits		Planning Area	
	Acreage	Percent of Developed Area	Acreage	Percent of Developed Area
Residential	2,063.56	30.70	800.00	2.06
Low Density [a]	1,946.84	28.96	788.50	2.03
Medium Density [b]	38.85	0.58	.....	.....
High Density [c]	29.83	0.44	.....	.....
Mobile Home Parks	31.40	0.47	11.50	0.03
Transient Lodgings	16.64	0.25	.....	.....
Manufacturing	176.75	2.63	14.33	0.04
Food and Kindred Products	17.83	0.27	14.00	0.04
Textile Mill Products	7.16	0.11	.....	.....
Apparel and Other Finished Products	4.15	0.06	.....	.....
Lumber and Wood Products	43.12	0.64	0.33	(d)
Printing, Publishing and Allied Industries	10.58	0.16	.....	.....
Primary Metal Industries	17.63	0.26	.....	.....
Fabricated Metal Products	5.57	0.08	.....	.....
Miscellaneous Mfg.	70.71	1.05	.....	.....
Transportation, Communication and Utilities	2,149.86	31.98	1,512.16	3.88
Railroad Transportation	117.42	1.74	25.25	0.06
Motor Vehicle Transportation	5.17	0.08	20.00	0.05
Aircraft Transportation	137.85	2.05	30.00	0.08
Highway and Street Right-of-Way	956.15	14.22	950.41	2.44
Automobile Parking (City Lots)	3.83	0.06	.....	.....
Communication	0.51	0.01	.....	.....
Utilities	928.88	13.82	486.50	1.25
Other	0.05	(d)	.....	.....
Trade	189.44	2.82	32.32	0.08
Wholesale Trade	36.72	0.55	15.00	0.04
Retail Trade	152.72	2.27	17.32	0.04
Bldg. Materials, Hdwe., and Farm Equipment	28.84	0.43	6.00	0.02
General Merchandise	21.52	0.32	.....	.....
Food	16.32	0.24	4.83	0.01
Automotive Dealers and Gasoline Service Sta.	44.21	0.66	4.33	0.01
Apparel and Accessories	5.08	0.08	.....	.....

Table 1, (cont.)

Land Use Classification	City Limits Acreage	City Limits Percent of Developed Area	Planning Area Acreage	Planning Area Percent of Developed Area
Retail Trade, Cont'd.				
Furniture, Home Furnishings, and Equipment	4.35	0.06	.....	.....
Eating and Drinking Places	18.09	0.27	0.33	(d)
Other Retail Trade	14.31	0.21	1.83	(d)
Services	630.37	9.38	85.50	0.21
Finance, Insurance, and Real Estate	10.05	0.15	1.34	(d)
Personal Services	27.82	0.41	63.00	0.16
Business Services	0.99	0.02	.....	.....
Repair Services	15.56	0.23	3.66	0.01
Professional Services	71.20	1.06	.....	.....
Contract Construction Services	17.15	0.26	.....	.....
Governmental Services	16.87	0.25	0.50	(d)
Educational Services	408.78	6.08	.....	.....
Miscellaneous Services [e]	61.95	0.92	16.50	0.04
Cultural, Entertainment, and Recreational Activities	110.79	1.65	435.00	1.12
Cultural Activities	0.64	0.01	.....	.....
Public Assembly	25.41	0.38	.....	.....
Amusements	36.17	0.54	100.00	0.26
Recreational Activities	3.04	0.04	335.00	0.86
Parks	45.53	0.68	.....	.....
Resource Production	1,400.89	20.84	35,999.95	92.61
Agriculture	1,392.87	20.72	35,978.11	92.56
Crop, Fruit, Tree Nut, or Vegetable Farms	.....	.....	731.00	1.88
Dairy Farms	.....	.....	840.00	2.16
Poultry Farms	.....	.....	322.00	0.83
Livestock and General Farms	.....	.....	33,758.61	86.85
Other Agriculture	1,392.87	20.72	326.50	0.84
Agricultural Related Activities	6.74	0.10	5.84	0.02
Forestry Activities and Related Services	0.73	0.01	.....	.....
Fishing Activities and Related Services	0.55	0.01	10.00	0.03
TOTAL DEVELOPED AREA	6,721.66	100.00	38,873.26	100.00
Undeveloped and Water Areas	4,874.03		21,406.50	
TOTAL AREA	11,585.59		60,279.76	

[a]
[b] Includes single, two, three and four-family residential structures.
[c] Includes residential structures with five or more units.
[d] Includes dormitories, fraternities and sororities.
[e] Less than 0.01 percent.
Includes religious activities, welfare and charitable services and other miscellaneous services.

About 38% of the City's streets need rebuilding and 34% require major repairs. Over half of the City's residential neighborhoods need convenient playgrounds or community centers. Nearly 60% of the City's businesses and practically all of its industries are scattered along traffic arteries or mixed with residential uses with little regard for traffic movement or residential living conditions. The rest are located within well defined commercial areas designed to fit in with the street system and surrounding neighborhoods.

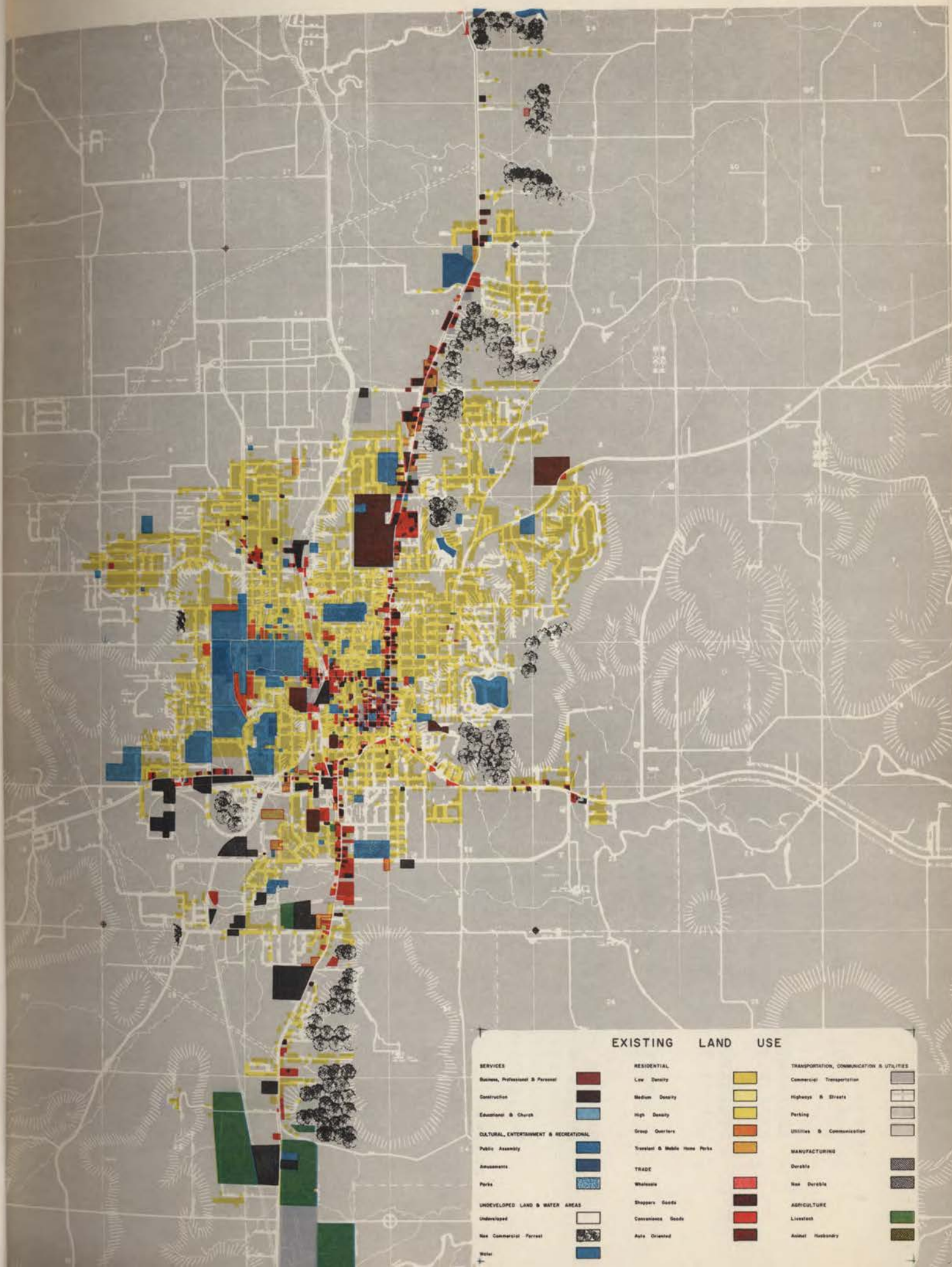
Technical Changes

The increasing use of automobiles has created an unexpected demand for parking space and drive-in service making the central business district outdated. A shift from railroad freight to truck freight has made the older industrial areas obsolete. Changes in housing types have led to different types of residential lots.

Existing Land Use and Future Requirements

Industrial, Retail, Wholesale and Selected Services. In the course of our field research, we measured the existing gross floor space and total land in industrial, wholesale, and retail and selected services uses as a basis for establishing existing 1965 relationships of employment to floor space and land to floor ratios. We have made two sets of employment projections for the industrial, retail, wholesale, and selected services establishments in the City by five-year intervals from 1970 to 1985. These employment projections were applied to an estimated future amount of gross floor space per employee to determine the total amount of floor space required. Our estimates of the future floor space requirements represent a more desirable amount of floor space per employee than existed in the City in 1965. These estimates reflect the tendency of an increasing amount of floor space per employee due to more efficient application of merchandise in the trade industries as well as changing technology in manufacturing establishments.

The estimates of future land uses for industrial, retail, wholesale, and selected services were determined by multiplying the estimates of floor space for the respective years by a desired land to floor ratio. The land to floor ratios for the future are presented as standards or goals which the City should strive to meet if it is to remain competitive as a location for these types of land use.


EXISTING LAND USE
SERVICES
Business, Professional & Personal
Construction
Educational & Church
CULTURAL, ENTERTAINMENT & RECREATIONAL
Public Assembly
Amusements
Parks
UNDEVELOPED LAND & WATER AREAS
Undeveloped
Non Commercial Forrest
Water
RESIDENTIAL
Low Density
Medium Density
High Density
Group Quarters
Transient & Mobile Home Parks
TRADE
Wholesale
Shoppers Goods
Convenience Goods
Auto Oriented
TRANSPORTATION, COMMUNICATION & UTILITIES
Commercial Transportation
Highways & Streets
Parking
Utilities & Communication
MANUFACTURING
Durable
Non Durable
AGRICULTURE
Livestock
Animal Husbandry

LAND USE BY USE TYPE, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965	1970	1975	1980	1985
Series I: [a]					
Residential	2,008	2,284	2,633	3,012	3,354
Commercial	402	470	539	617	703
Industrial	177	192	211	232	255
Public and Semi-Public	1,532	1,655	1,774	1,902	2,029
Streets and Railroads	895	1,016	1,155	1,307	1,452
Total Developed Area	5,014	5,617	6,312	7,070	7,793
Series II: [b]					
Residential	2,008	2,487	2,924	3,422	3,922
Commercial	402	498	574	662	757
Industrial	177	212	250	294	349
Public and Semi-Public	1,532	1,708	1,847	2,004	2,173
Streets and Railroads	895	1,092	1,265	1,462	1,667
Total Developed Area	5,014	5,997	6,860	7,844	8,868

[a] Series I land use projections based primarily on Series A population projections and Series I employment projections.

[b] Series II land use projections based primarily on Series B population projections and Series II employment projections.

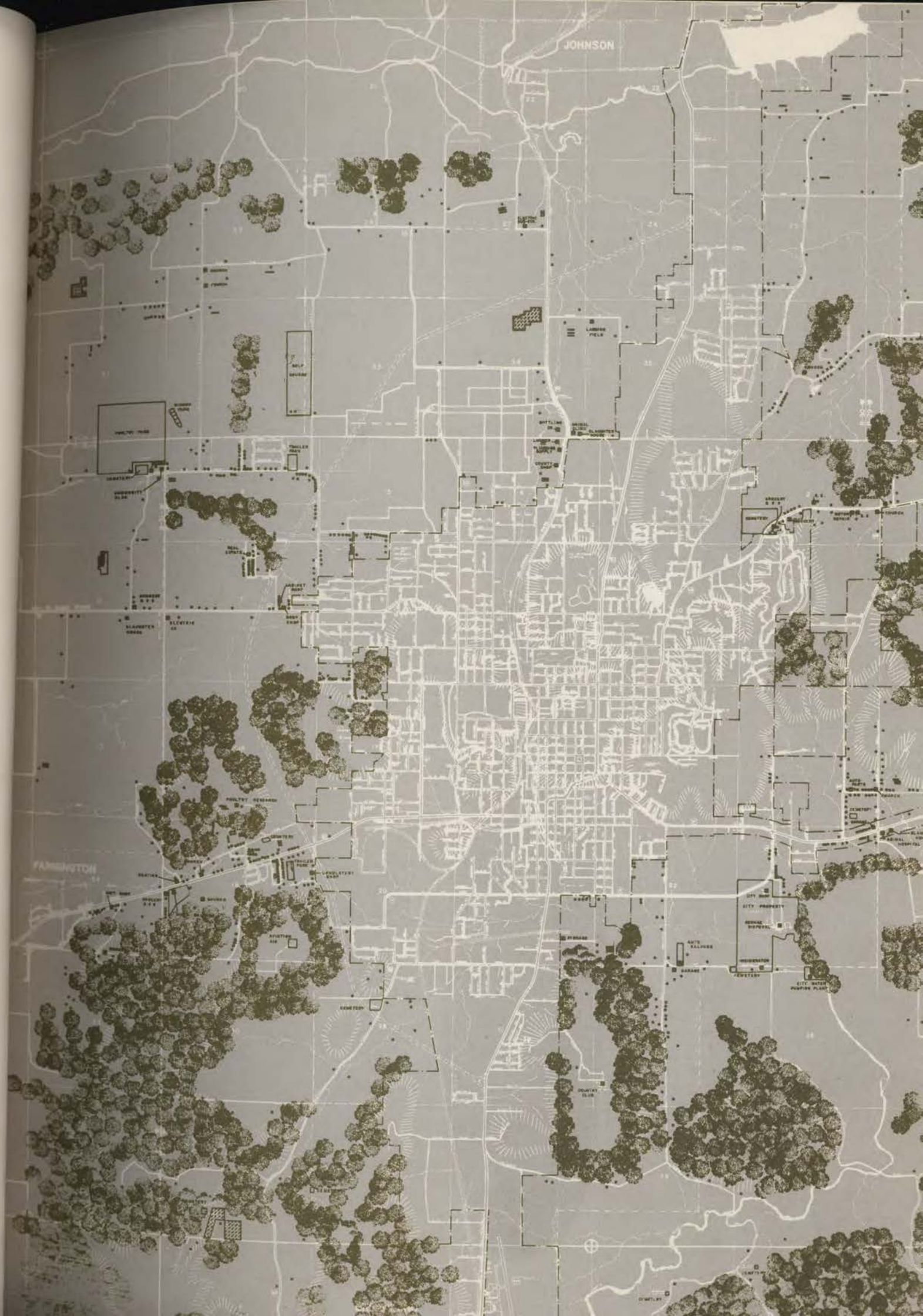
Source: All estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville Arkansas.

Table 3

LAND REQUIREMENTS BY USE TYPE, FAYETTEVILLE, ARKANSAS: 1965-1985
(Developed Land in Net Additional Acres)

	1965-1970	1970-1975	1975-1980	1980-1985	Cumulative 1965-1985
Series I:					
Residential	276	349	379	342	1,346
Commercial	68	69	78	86	301
Industrial	15	19	21	23	78
Public and Semi-Public	123	119	128	127	497
Streets and Railroads	121	139	152	145	557
Total	603	695	758	723	2,779
Series II:					
Residential	479	437	498	500	1,914
Commercial	96	76	88	95	355
Industrial	35	38	44	55	172
Public and Semi-Public	176	139	157	169	641
Streets and Railroads	197	173	197	205	772
Total	983	863	984	1,024	3,854

Source: All estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.


JOHNSON
FARMINGTON


PLANNING AREA
EXISTING LAND USE
RESIDENTIAL
POULTRY HOUSES
ORCHARDS - VINEYARDS
WOODED
OPEN
OTHER USES ANNOTATED

Residential Land Use

The 1960 Census of Housing disclosed that 40% of Fayetteville's dwelling units were built before 1940 and 18% were built between 1940 and 1950. This means that 60% of the City's housing was built during a period when there was little or no code control or during World War II and the building boom that followed when adequate building materials were lacking. By 1966 the land use survey showed the following housing conditions:

Housing Conditions - 1966

Condition	Structures	Acreage
Stable	4,603	1,297.38
Needing Major Repairs	3,183	593.44
Clearance	540	117.28
	8,326	2,008.10

The 1960 Census of Housing also showed that 1/2 of the dwellings were occupied by renters and 1/2 by owners. The median value of a house was $11,000 and the median rent was $62.

Family Size - 1960

	Owner-Occupied	Rented
One Person	389	597
Two	1067	1031
Three	701	653
Four	569	438
Five	341	186
Six	105	53
Seven	16	25
Eight	20	46
Median	2.7	2.4

Under the pressure of rapid growth Fayetteville's critical problems have become painfully obvious. The more apparent are traffic, housing, community services, sprawl, decay, space for commercial expansion and space for the University of Arkansas.

Housing is one of the City's more critical problems. The supply of housing is short and much of that is poor quality or not of the proper size or price range to suit the housing needs.

Residential areas make up almost 40% of the built-up area within the City. About 97% of the housing is low density with less than 4 dwellings per structure. In fact, all but a very small acreage is in single family homes with a density less than 5 families per acre. The remaining 3% is occupied by apartments at 15 to 25 families per acre, dormitories and fraternities at 150 students per acre, mobile home parks at 10 to 15 families per acre and motels.

Residential Type	Acreage
Low density	1,946.84
Medium density	38.85
High density	29.83
Mobile home parks	31.40
Transient	16.64
Total	2,063.56

Dwelling Units by Building Type

	1960	Annex	Permits	1965	%
Single Family	4,855	855	724	6,014	71
2, 3 and 4 Family	921		134	1,085	13
5 or More	1,071		302	1,074	13
Group Quarters (Pop.)	(2,307)			(4,998)	
Mobile Homes	85			247	3

Student Housing

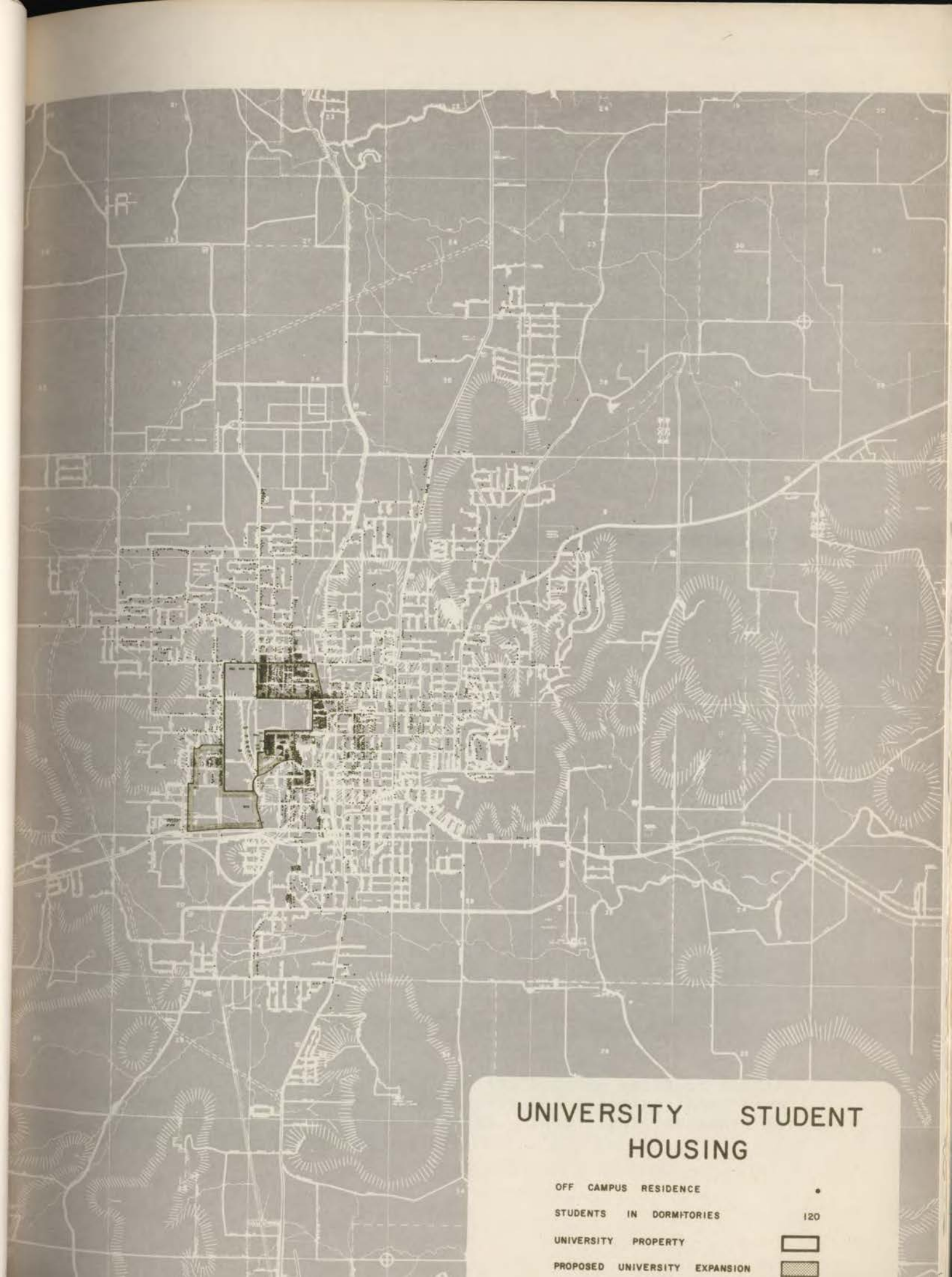
Over ten thousand students are enrolled at the Fayetteville campus of the University of Arkansas. About 8900 of these reside in Fayetteville. Approximately one half the students are housed on campus and the other half off-campus.

Student Housing Distribution - 1965

Residence halls and fraternities	51.0%
Married students quarters	4.0
Commute	13.0
Rent	
Rooms	5.0
Apartments	18.0
Houses	6.0
Own Home	3.0

University enrollment almost doubled between 1960 and 1965. Students became almost 1/3 of Fayetteville's population. The University and local developers did not react immediately to provide housing for the additional students. This created a demand for rooms and small apartments near the campus. Much of it was met by converting older homes and garages near the campus into rooming houses and apartments. Many of these older homes were ill-suited for conversion and most lacked adequate parking space.

About 21% of the University students are married and 31% are living in houses and apartments. This indicates that 10% of the


UNIVERSITY STUDENT HOUSING
OFF CAMPUS RESIDENCE
STUDENTS IN DORMITORIES 120
UNIVERSITY PROPERTY
PROPOSED UNIVERSITY EXPANSION

students living in houses or apartments are unmarried. Many of these unmarried students share apartments, sometimes with 3 or 4 students to the apartment; each with his own car.

Elderly Housing

There are over 2400 citizens of Fayetteville that are 65 years or older. 85% live in homes that were built before 1950. Median incomes range from $1,100 to $2,500 per year. Many of these elder citizens are physically and financially unable to maintain these houses in standard condition.

Housing Market Analysis

According to the 1960 Census of Housing the median value of owner-occupied housing units in Fayetteville was $11,000. The owner-occupied housing units were distributed among the different value ranges as follows:

Value Range	Number of Housing Units	Percent Distribution
Less than $5,000	448	15.1
$5,000 to $9,900	840	28.4
$10,000 to $14,900	808	27.3
$15,000 to $19,900	449	15.2
$20,000 to $24,900	215	7.3
$25,000 or more	198	6.7
Total	2,958	100.0%

1960 census data for renter-occupied housing in Fayetteville showed the following rental distribution:

Gross Rent Per Month Renter-Occupied	Number of Housing Units	Percent Distribution
Less than $20	39	1.3
$20 to $39	632	20.9
$40 to $59	648	21.4
$60 to $79	874	28.8
$80 to $99	395	13.0
$100 to $119	172	5.7
$120 or more	90	3.0
No cash rent	179	5.9
Total	3,029	100.0

Median $62

From 1960 to 1966, a total of 409 housing units in multi-family structures (three or more units per building) have been authorized by local building permits. This figure accounts for

Table 4

TRENDS IN NUMBER AND VALUE OF SINGLE-FAMILY HOUSING UNITS IN THE CITY OF FAYETTEVILLE, 1960-1966

Year	Housing Units Authorized	Value of Permits[a]	Average Unit Value[b]
1960	111	$ 700,200	$ 6,300
1961	107	$ 729,100	$ 6,800
1962	158	$ 1,024,900	$ 6,500
1963	205	$ 1,391,000	$ 6,800
1964	176	$ 1,276,500	$ 7,300
1965	248	$ 1,997,600	$ 8,100
1966	127	$ 1,093,700	$ 8,600

[a] Does not include plumbing, wiring or mechanical equipment. About 50% should be added to get the total cost of the units excluding land costs.

[b] Rounded to nearest $100

Source: Local building permit data.

24.1 percent of all housing unit permits issued by the City during this six-year period.

The physical condition represents another measure of the quality of housing. The following table shows 1960 data on the value of housing for Fayetteville as compared with the Northwest Arkansas Region.

Table 5

VALUE OF HOUSING FOR NORTHWEST ARKANSAS AND FAYETTEVILLE, 1960

	Northwest Arkansas	Percent[a]	Fayetteville	Percent[a]
Value, Owner-Occupied:				
Less than $5,000	3,907	28.4	448	15.1
$5,000 to $9,900	5,102	37.1	840	28.4
$10,000 to $14,900	2,929	21.3	808	27.3
$15,000 to $19,900	981	7.1	449	15.2
$20,000 to $24,900	385	2.8	215	7.3
$25,000 or more	434	3.2	198	6.7

[a] Total may not equal 100.0% due to rounding.

Source: U. S. Department of Commerce, Bureau of the Census, Census of Housing: 1960.

In the following analysis the ability to pay for housing is based on 1960 census data relating family income distribution to the value of owner-occupied housing and renter-occupied units.

The following basic assumptions used in this comparison are:

1. A ratio of 2.5 times the family income to the value of owner-occupied homes and/or renter-occupied units.

2. Renter-occupied units have been assigned the following values:

Rental	Value
Less than $40	Less than $5,000
$40 to $79	$5,000 to $9,900
$80 to $99	$10,000 to $14,900
$100 to $120	$15,000 to $19,900
$120 or more	$20,000 and over

Table 6 summarizes the results of this comparison.

Table 6

COMPARISON OF FAMILY INCOME DISTRIBUTION AND HOUSING VALUES, FAYETTEVILLE: 1960

Income Group	Number of Families	Percent Distribution
Under $2,000	741	14.9
$2,000 to $3,999	1,323	26.7
$4,000 to $5,999	1,138	22.9
$6,000 to $7,999	805	16.3
$8,000 and over	952	19.2
	4,959	100.0

Value of Housing Unit	Market[1]	Distribution[2]
Less than $5,000	14.9	19.3
$5,000 to $9.900	26.7	40.7
$10,000 to $14,900	22.9	20.7
$15,000 to $19,900	16.3	10.7
$20,000 and over	19.2	8.7

1 Market represents the proportion (%) of families considered capable of affording housing in a specific value range.

2 Distribution represents the proportion (%) of the housing supply in each respective value range.

Source: Compiled from data from the Census of Population: 1960 and Census of Housing: 1960.

Based on the above data the following general market information is concluded:

1. There is a definite surplus of housing units priced in the range of the low and very low income families. (2,064 families in this income range compared with 3,481 housing units in this range.) However, most of these houses are substandard.

2. There appears to be a state of balance of housing units available to the families with a modest income. (1,203 housing units compared with 1,138 families in this range.)

3. There is a shortage of housing units priced in the range of the middle income families. (805 families whose incomes indicate the ability to rent or purchase housing units ranging from $15,000 to $19,900 and 621 units available in this range.)

4. There is a very definite shortage in the $20,000 and over range of housing units. (952 families who could afford these units and only 503 units in this range.)

"Upgrading" housing accommodations poses a problem as about 20 percent of the families are occupying housing units in value ranges below those which they could afford. A difference exists between ability to pay and willingness to pay.

Estimates based on existing as well as projected data will serve to identify a large segment of the potential of the market for housing in the City.

These markets include:

1. New additions to the housing inventory required for the growth in total population; and

2. New additions to serve as a replacement market for the units displaced by renewal and other (legal) actions.

The starting basis for the housing market projections is the 1965 housing inventory of the City. Our estimate of this inventory was based on 1960 housing data with additions to the supply based on building permit data and on field observation. Data on 1960 occupancy status for the City and the region is shown in Table 7.

Table 7

OCCUPANCY STATUS OF HOUSING IN NORTHWEST ARKANSAS AND FAYETTEVILLE, 1960

	Northwest Arkansas	Fayetteville
Owner-Occupied	25,395	3,208
Nonwhite Owner	100	79
Renter-Occupied	10,469	3,029
Nonwhite Renter	78	66
Total Occupied	35,864	6,237
Total Nonwhite Occupied	178	145
Vacant, Available	1,415	467
Effective Housing Supply	37,279	6,704
Effective Vacancy Ratio	3.8%	7.0%
Other Vacant	2,951	228
Total Housing Supply	40,230	6,932
Gross Vacancy Ratio	10.9%	10.0%

Source: Compiled from U. S. Department of Commerce, Bureau of the Census, Census of Housing: 1960 (Washington: Government Printing Office).

The following table indicates the results of the 1965 inventory.

Table 8

HOUSING UNIT INVENTORY FOR THE CITY OF FAYETTEVILLE: 1965

Effective Housing Supply	8,326
Occupied Housing Units	8,107
Vacant, Available	219
Percent Vacant	2.6%
Sound	4,603
Deficient	3,183
Clearance	540

The total 1965 population was 26,279; 81.0 percent living in households (21,281), and there were 2.6 persons per household. The 1965 nonhousehold population in the City was more than double the level apparent in 1960. Students living in University residence halls, fraternity and sorority houses and hospitals account for almost all of the nonhousehold

population. There has also been an apparent decline in the average number of persons per household since 1960. At that time the household size averaged 2.88 persons and had dropped to 2.63 persons by 1965. Factors contributing to the decline in the size of households have been the number of new multi-family housing units that have been built since 1960 and the rapid growth experienced by the University of Arkansas since typically these segments of the population tend to have smaller households.

During the period from 1960 to 1966 the proportion of multi-family (5 family or more) housing units authorized by new building permits to total housing units in Fayetteville has ranged from a low of 8 percent in 1961 to a high of 49 percent in 1964 with an average of 24 percent. The following table shows the local permit activity by size of buildings.

Table 9

NEW HOUSING UNITS AUTHORIZED BY BUILDING PERMITS FOR THE CITY OF FAYETTEVILLE, 1960-1966

Year	Total Housing Units	Single Family Units	Two Family Units	3 or 4 Family Units	Five Family Or More Units
1960	162	111	34	3	14
1961	127	107	10	...	10
1962	194	158	10	...	26
1963	259	205	16	...	38
1964	399	176	24	3	196
1965	306	248	40	...	18
1966	252	127	24	...	101
Total	1,699	1,132	158	6	403

Source: Compiled from local building permit data.

From 1960 through September, 1966 the ratio of apartment units authorized to all new housing units permits issued by building departments in the principal urban communities in the Northwest Arkansas Region was:

Fayetteville	22.2%
Springdale	2.8%
Rogers	8.9%
Bentonville	5.4%
Siloam Springs	1.2%

Since most of the nonhousehold population represents students living in residence halls, fraternities and sororities, the future composition of the City's nonhousehold population will be dependent on the relationship of students in group quarters to total student

enrollment projections. We have used as a basis for allocating the student enrollment projections to the various housing categories percentage distributions compiled from data contained in the 1966 FHA housing market analysis of the Fayetteville area.[1]

Residence halls, fraternities and sororities	51.0%
Married quarters	4.0
Commute	13.3
Rent accommodations:	
Rooms	4.5
Apartments	17.5
Houses	5.5
Own Home	2.7
Not reported	1.5

These percentages were applied to the University of Arkansas enrollments as projected by the Bureau of Business and Economic Research for 1970 and 1975 and the 1980 and 1985 projections developed for use in this study and described in the population section. The results of applying the ratios to enrollment projections are contained in Table 10. The ratios used are in line with standards used by the University which are to provide housing for one-half of the students.

Our estimates of the nonhousehold population represent the projections of number of students in residence halls, fraternities, sororities, and rooms in addition to an estimated 250 persons which represent other nonhousehold quarters such as hospitals. Thus, the nonhousehold population projections are:

	Nonhousehold Population
1970	7,443
1975	9,171
1980	10,901
1985	12,630

Other assumptions used in making the projections for the future housing are:

1. Family size or the density of persons per household will be 2.7 persons for all projection years--which represents a slight increase from the estimated 1965 figure of 2.6 but which represents a decline from the 1960 level of 2.9.

---

[1] Department of Housing and Urban Development, Federal Housing Administration, Analysis of the Fayetteville, Arkansas Housing Market as of October 1, 1966.

Table 10

PROJECTION OF UNIVERSITY OF ARKANSAS HOUSING NEEDS,

1970 to 1985

	1970	1975	1980	1985
Total Enrollment	12,960	16,075	19,190	22,305
Residence Halls Fraternities and Sororities	6,610	8,198	9,787	11,376
Married Quarters	518	643	768	892
Commute	1,724	2,138	2,552	2,966
Rent Accommodations:				
Rooms	583	723	864	1,004
Apartments	2,268	2,813	3,358	3,903
Houses	713	884	1,055	1,227
Own Home	350	434	518	602
Not Reported	194	241	288	335

Sources: 1970 and 1975 enrollment projections are December, 1965 estimates prepared by the Bureau of Business and Economic Research, University of Arkansas; and other estimates and projections were prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

2. By 1985 most of the units classified as deteriorated (clearance) will have been demolished, and in addition to these removals other demolitions will range from about 550 to 950 during the 20-year period.

3. A constant vacancy rate of the effective housing supply will be five percent.

The following two tables (Tables 11 and 12) show the estimates of housing unit absorption (the measure which indicates the volume of new construction to be supplied as a response to market forces) based on the two sets of population projections developed in this study.

For purposes of assigning the estimates of housing unit absorption by size of structures we have assumed the following ratios which follow closely the pattern of constructing new housing units in the City during the period since 1960:

	Percent of Total
Single-family	67%
Two-family	7%
Three and four-family	1%
Five-family or more	25%

Table 12 shows the projections of housing unit absorption by size of structure.

The intensity of land development for future housing needs is not expected to change to any marked degree from the present. The intensities used for projecting the land requirements for the future housing market are:

Single-family	3.2 to 4.7 units per acre
Two-family	6.0 to 9.0 units per acre
Three and four-family	11.0 to 14.0 units per acre
Five-family or more	25.0 to 30.0 units per acre

In order to accommodate the future housing market as projected at the intensities the acreage of land which will be required is estimated in Table 13.

Thus, from approximately 1,096 to 1,596 acres of land will be required by 1985 to provide sites for the potential housing market of the Series A population projections and from approximately 1,558 to 2,267 for the Series B population projections.

In general terms of price and rental ranges -- at current price levels we do not believe it possible to construct new housing units for the families who cannot afford housing costing

Table 11

PROJECTION OF SERIES B HOUSING UNIT ABSORPTION, FAYETTEVILLE, ARKANSAS: 1970 to 1985

	1970	1975	1980	1985
Total Population	34,300	40,600	47,700	55,200
Percent in Housing Units	78.3	77.4	77.1	77.1
Population in Housing Units	26,857	31,429	36,799	42,570
Occupants per Housing Unit	2.7	2.7	2.7	2.7
Required Housing Units	9,947	11,640	13,629	15,767
Vacant Available Units	524	613	717	830
Effective Housing Supply	10,471	12,253	14,346	16,597
Increase in Effective Housing Supply[a]	2,145	1,782	2,093	2,251
Replacement of Demolished Units	300	450	450	300
Total Absorption[a]	2,445	2,232	2,543	2,551
Cumulative Absorption	2,445	4,783	7,326	9,877

[a] Increase from previous period, i.e., 1965 to 1970, 1970 to 1975, etc.

Source: All estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

Table 12

PROJECTION OF HOUSING UNIT ABSORPTION BY SIZE OF STRUCTURE, FAYETTEVILLE, ARKANSAS, SERIES A AND SERIES B: 1965 to 1985

	Total Units	Single-Family (67%)	Two-Family (7%)	Three and Four Family (1%)	Five Family or More (25%)
Series A:					
1965-1970	1,409	944	99	14	352
1970-1975	1,781	1,193	125	18	445
1975-1980	1,938	1,298	136	19	485
1980-1985	1,747	1,171	122	17	437
Series B:					
1965-1970	2,445	1,639	171	24	611
1970-1975	2,232	1,496	156	22	558
1975-1980	2,543	1,704	178	25	636
1980-1985	2,551	1,711	179	26	638

Source: Projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas

Table 13

LAND REQUIREMENTS FOR THE FAYETTEVILLE HOUSING MARKET: 1965 to 1985

	Total Acres Required	Single Family	Two Family	Three and Four Family	Five Family or More
Series A:					
1965-1970	225 to 327	201 to 295	11 to 17	1 to 1	12 to 14
1970-1975	284 to 414	254 to 373	14 to 21	1 to 2	15 to 18
1975-1980	308 to 450	276 to 406	15 to 23	1 to 2	16 to 19
1980-1985	279 to 405	249 to 366	14 to 20	1 to 2	15 to 17
Total	1,096 to 1,596	980 to 1,440	54 to 81	4 to 7	58 to 68
Series B:					
1965-1970	390 to 567	349 to 512	19 to 29	2 to 2	20 to 24
1970-1975	355 to 518	318 to 468	17 to 26	2 to 2	19 to 22
1975-1980	406 to 590	363 to 533	20 to 30	2 to 2	21 to 25
1980-1985	407 to 592	364 to 534	20 to 30	2 to 2	21 to 26
Total	1,558 to 2,267	1,394 to 2,047	76 to 115	8 to 8	81 to 97

Source: Projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

more than $9,000 or renting for more than about $90 without some sort of subsidy being available either to the developer such as under the FHA Loan Program for nonprofit organizations, or to the occupants, as provided in the Public Housing Program or as rental supplement in accordance with the 1965 Housing Act.

Private enterprise has been generally unable to construct new housing units for this segment of the population. Land and construction costs virtually preclude the possibility of constructing "low rent" or "low priced" housing without assistance in land acquisition and cost or with the lower rents achievable with below-market-interest-rate financing.

Rental rates in the City of Fayetteville are inflated. A large portion of the local rental demand is generated by the student population. The student population contributes to a seasonal demand for housing; thus, vacancy rates are higher during the summer months.

As of October 1, 1966 it was estimated that the vacancy ratios in the Housing Market Area were 1.1 percent of the sales inventory and 2.7 percent of the rental inventory. (These ratios represent the available vacancies.)

Although it is difficult to predict with complete accuracy, the following sales price and rent distributions appear reasonable for new construction.

Sales Units (67% of New Market)

Range	Distribution
Under $10,000	7%
$10,000 to $14,900	30%
$15,000 to $24,900	40%
$25,000 and over	23%

Rental Units (33% of New Market)

Range	Distribution
Under $80	3%
$80 to $99	5%
$100 to $150	62%
$150 and over	30%

Residential Standards

A review of the criticism of Fayetteville's residential areas suggests that there are some general standards for residential development that will encourage a more satisfactory housing pattern in the future.

> Terrain with variety, offering fairly level, rolling, and hillside sites depending on topographic characteristics in the urban area, but avoiding steep or irregular sites and low or poorly drained areas; slopes usually under 15 percent.
>
> In proximity to major thoroughfares with direct connections to work and leisure-time areas; bounded but not penetrated by major streets; and served by a system of

collector and service streets fitted to the terrain. A complete network of surface drainage should be designed and built as part of the street system.

Residential areas should be designed along with their related shopping, school, church and recreation facilities.

Local shopping facilities: sites adequate for shops, off-street parking and loading, and landscaping; (a) neighborhood-serving store group within convenient walking distance of families served (within convenient driving distance in low-density areas).

Schools: level sites, with upper-level schools within convenient commuting range and lower-level schools within easy walking distance of age groups served (except in low-density areas, where convenient driving range rather than walking distance becomes a crucial consideration); sites adequate for buildings, recreation facilities and landscaping and located with due consideration for safety of children and amenity of surroundings.

Churches: level sites, adequate for parking and landscaping; for neighborhood-serving churches, walking convenience important, and for community-serving churches accessible to major street system important.

Playground areas and parks: (a) level playground and recreation center sites, usually in conjunction with schools, within easy walking distance of age groups served (within convenient driving range, in low-density areas), and adequate for appropriate active recreation facilities and planted border; and (b) quiet parks on steep, level or low sites and fingers of open space along watercourses and in low areas, integrated with active and passive recreation areas and the larger open space system of the urban areas according to the opportunities offered by land forms in locale.

Range of choice in residential densities, with high densities near the thoroughfares and community shopping centers; with low densities in the areas between thoroughfares.

Table 14

LAND USE STANDARDS

RESIDENTIAL

	Max. Density	Min. Area (Sq. Ft.)	Min. Frontage	Min. Yards	Parking	Location	Major Nuisances
Low Density	1-8 fam/acre	43,560	150	30-10-20			Road side stands
Rural	1-2						Animals-Poultry
							Resource Production
Single Family	1-2	20,000	100	30-10-20	2/unit		
							Signs-Septic Fields
Suburban	4-8 fam/acre						
Single Family		10,000	100	25-10-20	2	Public Utilities	Refuse
		8,000	75	25-10-20		School	Wires-Meters
Cluster		5,000	60	25-10-20	2	Collector Street	Grades-Drainage
Low Density	8-16fam/acre						
Row House		4,000	35-40	25-10-20	2	Public Utilities	
Garden Apartments		2,500	75	25-10-20	2	Shops-School	
Mobile Home Park		4,000		25-10-20	1-1/2	Playground-Churches	
						Collector Street	
Medium Density	16-30fam/acre						
Walk-up Apartments		2,500	75	30-10-25	2	Utilities-Shops	Traffic-Parking
Elevator Apartments		1,500			2	School-Churches	
						Parks-Play	
						Employment	
High Density	30-50					Major Street	
Rooming Houses	120beds/acre	370/st.	100	30-10-25	1/bed	Utilities-Shops	Traffic
Dormitories	120beds/acre				1	Employment	Parking
Fraternities	120beds/acre				1	Parks-Cultural Act.	Noise
High Rise Apartments	40 fam/acre	1,000	160		2/unit	Churches	
						Major Street	
Transient							Traffic
Rooming Houses					1/bed	Same as	Parking
Hotels					1/room	High Density	Noise
Motels					1/room		Other Uses
Trailer Parks	10-15/acre	4,000			1/unit		

Commercial Activities

In 1940 Fayetteville was a small college town and county seat with a resident population of 8,212 and 2,208 University students. Its major features were a well-defined business district, the University of Arkansas campus, the Veterans Administration Hospital and the Methodist Assembly grounds all surrounded by fairly compact residential areas.

In the period just after World War II Fayetteville experienced a rapid growth in commercial uses. Because the area around the central business district was built-up most of the new businesses moved out along traffic arteries. A few were scattered throughout the residential areas. While these businesses found cheaper land, larger sites and room for parking, they lost the proximity to related businesses and they have since experienced conflict between their shoppers and the traffic along the thoroughfares.

Recently, businesses have been built in centers sharing access, parking and convenient locations. Three centers have been built near developing residential areas to provide conveniences such as barber and beauty shops, laundromats, drugs, groceries and automobile service. The Evelyn Hills Shopping Center provides shopper goods like furniture, clothing, hardware, and auto supplies along with many of the specialty stores and business services normally found downtown.

The central business district despite its shortage of parking space and obsolete buildings still retains many activities of regional interest. Governmental buildings, central banks, utility offices, department stores and many professional services still prefer a central location.

Still other uses have failed to find locations that are convenient for their customers or their neighbors. One such group is that intended to serve the motorist, including automotive services and drive-in businesses. These activities are scattered along all the City's traffic arteries with little regard for access from key intersections or traffic congestion.

Another group of uses that is poorly located are those uses that require heavy truck service. This group includes wholesalers, bakeries, hatcheries, bottling plants, bulk oil storage, storage companies, repair services, utility yards and construction services such as lumber yards, contractors, plumbers, electricians, concrete plants and equipment storage and service. Originally, these uses were located along the railroad but the need for space and access to truck routes has caused them to scatter to a number of locations in the City. Many are improperly located and they are a nuisance to nearby residential and commercial areas.

Another group of uses that have not found enough suitable sites in the downtown or commercial centers are the professional

offices. Doctors, engineers, real estate men and other professionals are scattered along highways and into many residential areas. Some of the professional offices suffer by not being near commercial and governmental activities.

There are, of course, a number of miscellaneous commercial uses that have no standard location and they add to the haphazard arrangement of commercial uses with all its disadvantages. They are such things as animal hospitals, mortuaries, monument sales, greenhouses, broadcasting studios, radio and television antennae, and billboards.

In addition to these general considerations of business locations, it is useful to know how commercial land is allotted to the types of business that serve the Fayetteville trade area. This analysis is shown in Table 15.

Table 15

EXISTING COMMERCIAL LAND USE

Land Use Classification	City Limits		Planning Area	
	Acreage	Percent of Developed Area	Acreage	Percent of Developed Area
Trade	189.44	2.82	32.32	0.08
Wholesale Trade	36.72	0.55	15.00	0.04
Retail Trade	152.72	2.27	17.32	0.04
Bldg. Materials, Hdwe., and Farm Equipment	28.84	0.43	6.00	0.02
General Merchandise	21.52	0.32	...	...
Food	16.32	0.24	4.83	0.01
Automotive Dealers and Gasoline Service Sta.	44.21	0.66	4.33	0.01
Apparel and Accessories	5.08	0.08	...	...
Furniture, Home Furnishings, and Equipment	4.35	0.06	...	...
Eating and Drinking Places	18.09	0.27	0.33	(d)
Other Retail Trade	14.31	0.21	1.83	(d)
Services	630.37	9.38	85.50	0.21
Finance, Insurance, and Real Estate	10.05	0.15	1.34	(d)
Personal Services	27.82	0.41	63.00	0.16
Business Services	0.99	0.02	...	...
Repair Services	15.56	0.23	3.66	0.01
Professional Services	71.20	1.06	...	...
Contract Construction Services	17.15	0.26	...	...

Retail and Wholesale Trade and Selected Services

It has been stated that "The modern urban or town area owes its existence to the simple fact that they are centers for the production and distribution of goods and services. Take away these economic functions and the reasons for the inhabitants living there is removed."[1] The economic well-being and future progress of a community is heavily dependent upon two functions: (1) its effectiveness in satisfying the demand of local consumers for goods and services and (2) serving persons from outside the geographical boundaries of the city or town thus attracting a flow of income into the community.

Fayetteville's trade comes primarily from an area within a 30-mile radius of the City and the trade area covers a large portion of Northwest Arkansas. A few years ago, a report was prepared for the Fayetteville Chamber of Commerce by two University of Arkansas graduate students which outlined in detail the Fayetteville retail trade area.[2] This study indicated that the area includes all of Washington County, most of Benton County and Madison County and a portion of Carroll County. In addition to the above described area in Arkansas, the Fayetteville trade area covered portions of Adair County in Oklahoma and Barry County in Missouri. It is very doubtful that the trade area boundaries as delineated in this study have changed by any appreciable degree in the past few years. A labor commuting survey as of August, 1966, prepared by the Arkansas Industrial Development Commission tends to indicate that boundaries of the Fayetteville trade area have not changed as trade and labor market area boundaries are quite similar.

According to the results of this survey of manufacturing firms, the employees commuting to work at Fayetteville from areas outside of Washington County were distributed by location of residence as follows: Madison County -270; Benton County - 108; Crawford County - 6; and Adair County, Oklahoma - 174. It could be assumed by using this data that if there have been any changes in Fayetteville's trade area, it would be an expansion to include a larger portion of Adair County, Oklahoma, particularly around the Stillwell area.

Retail sales have shown a steady increase in Fayetteville and Northwest Arkansas during the period from 1954 through 1963. Fayetteville's growth rate was considerably slower in the 1954-1958 period than during the later period from 1958-1963. In 1963 retail sales in Fayetteville were valued at $46.5 million - an increase of $17.4 million, or 60.1 percent, since 1958. During the same period, retail sales in Northwest

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[1] Survey of Cincinnati, Ohio prepared by the City Planning Commission.

[2] "An Outline of the Fayetteville Trade and Labor Area", Hugh R. Dawson and Hollis A. Dixon, under the direction of Robert M. Bell, Marketing Department, University of Arkansas.

Arkansas rose by 32.2 percent, thus Fayetteville's proportion of the area increased from 24.5 percent in 1958 to 29.7 percent in 1963.

A further comparison of Fayetteville's sales between 1954 and 1963 with those of the State and nation shows that Fayetteville's rate of growth has been higher than that for Arkansas or for the United States, particularly since 1958.

Table 16

RETAIL SALES FOR FAYETTEVILLE, NORTHWEST ARKANSAS, ARKANSAS AND THE UNITED STATES: 1954, 1958 and 1963

	Fayetteville	Northwest Arkansas	Arkansas	United States
Retail Sales (in thousands):				
1954	$ 24,888	$ 94,096	$1,333,632	$169,967,748
1958	29,073	118,520	1,536,734	199,646,463
1963	46,536	156,641	1,984,375	243,198,622
Percent Change in Sales:				
1954-1963	87.0	66.5	48.8	43.1
1954-1958	16.8	26.0	15.2	17.5
1958-1963	60.1	32.2	29.1	21.8

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, Retail Trade: 1954, 1958 and 1963 (Washington: U. S. Government Printing Office).

Table 17 indicates the trends in Fayetteville's retail sales activity relative to Northwest Arkansas by the store types for which a comparison can be made.

In 1963, the sales of Fayetteville's general merchandise group stores accounted for one-half of Northwest Arkansas' sales in this category. In this store group, Fayetteville's share of the region increased from 33.3 percent to 49.8 percent in 1963.

Food stores, apparel and accessory stores' sales in Fayetteville have declined in importance relative to the region while lumber, etc., automotive dealers and gasoline stations' sales in Fayetteville have accounted for an increasing share of the region.

Sales of automotive dealers (21.4 percent of total) and food stores (15.0 percent of total) rank first and second respectively, in importance to Fayetteville's total 1963 sales. In the United States, the importance of these two types of stores was reversed with food stores totaling 24.0 percent of national sales and auto-

motive dealers at 19.1 percent.

All types of trade in Fayetteville had sales gains between 1954 and 1963, but the most rapid rate of growth was in the general merchandise group stores. In 1963, retail sales in this category were valued at $6,955,000 -- an increase of $4,845,000 or 230 percent since 1954. (See Table 19.) The next most striking percentage gains were in gasoline service stations and lumber, building materials, hardware and farm equipment stores whose sales increased between 1954 and 1963 by 132 and 122 percent, respectively. In terms of actual dollar volume increases after general merchandise group stores, the next largest increases were in lumber, etc., and food stores which experienced gains of $2,527,000 and $2,462,000, respectively.

The total number of retail establishments in Fayetteville, Northwest Arkansas and the State has fluctuated since 1954. As is shown in Table 20, the number of establishments in Fayetteville declined from 232 in 1954 to 227 in 1958, but between 1958 and 1963 showed a gain of 28. The reverse trends were apparent both in Northwest Arkansas and Arkansas as the number of establishments increased between 1954 and 1958 and decreased between 1958 and 1963.

Table 17

RETAIL TRADE: FAYETTEVILLE'S RETAIL SALES AS A PERCENT OF NORTHWEST ARKANSAS' RETAIL SALES BY TYPE OF ESTABLISHMENT: 1954, 1958 AND 1963

Type of Establishment	1954	1958	1963
Lumber, building materials, hardware and farm equipment dealers	27.6	28.0	29.1
General Merchandise group stores	33.3	30.5	49.8
Food stores	26.2	28.8	23.4
Automotive dealers	35.7	35.5	36.7
Gasoline service stations	N.A.	24.9	27.4
Apparel, accessory stores	N.A.	39.0	31.2
Furniture, home furnishings and appliance dealers	41.0	31.2	N.A.
Eating, drinking places	35.1	30.2	35.7
Drug stores, proprietary stores	N.A.	N.A.	N.A.
Other retail stores	N.A.	N.A.	N.A.
Nonstore retailers	3.5	N.A.	N.A.
TOTAL	26.4	24.5	29.7

N.A. - Not Available

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Retail Trade, 1954, 1958 and 1963. (Washington: Government Printing Office).

Table 18

PERCENTAGE STRUCTURE OF FAYETTEVILLE'S RETAIL SALES BY TYPE OF ESTABLISHMENT: 1954, 1958 AND 1963

Type of Establishment	Percent of Total		
	1954	1958	1963
Lumber, building materials, hardware and farm equipment dealers	8.3	12.3	9.9
General merchandise group stores	8.5	9.5	14.9
Food stores	18.2	21.9	15.0
Automotive dealers	22.7	23.7	21.4
Gasoline service stations	5.1	7.1	6.4
Apparel, accessory stores	5.8	5.9	4.4
Furniture, home furnishings and appliance dealers	5.0	3.9	3.6
Eating, drinking places	5.0	4.1	4.8
Drug stores, proprietary stores	4.3	4.9	3.9
Other retail stores and non-store retailers	17.0	6.6	15.6
TOTAL[a]	100.0	100.0	100.0

[a] May not add to 100.0 due to rounding.

Sources: U. S. Department of Commerce, Bureau of the Census, Census of Business: Retail Trade, 1954, 1958 and 1963 (Washington: Government Printing Office).

Table 19

FAYETTEVILLE'S RETAIL SALES BY TYPE OF ESTABLISHMENT:

1954, 1958 and 1963

Type of Establishment	Retail Sales (thousands)		
	1954	1958	1963
Lumber, building materials, hardware and farm equipment dealers	$2,073	$3,573	$4,600
General merchandise group stores	2,110	2,775	6,955
Food stores	4,541	6,359	7,003
Automotive dealers	5,654	6,883	9,959
Gasoline service stations	1,279	2,078	2,972
Apparel and accessory stores	1,448	1,720	2,051
Furniture, home furnishings and appliance dealers	1,232	1,134	1,690
Eating and drinking places	1,254	1,202	2,213
Drug stores and proprietary stores	1,070	1,427	1,828
Other retail stores	4,209	(a)	6,125
Nonstore retailers	18	(a)	1,140
TOTAL	$24,888	$29,073	$46,536

[a] Information withheld to avoid disclosure for individual stores.

Sources: U. S. Department of Commerce, Bureau of the Census, Census of Business: Retail Trade, 1954, 1958 and 1963 (Washington: Government Printing Office).

Table 20

NUMBER OF RETAIL ESTABLISHMENTS IN FAYETTEVILLE, NORTHWEST ARKANSAS AND ARKANSAS: 1954, 1958 AND 1963

	Fayetteville	Northwest Arkansas	Arkansas
Number of Establishments:			
1954	232	1,215	18,783
1958	227	1,396	20,159
1963	255	1,288	18,273
Change in No. of Establishments:			
1954-1963	23	73	-510
1954-1958	-5	181	1,376
1958-1963	28	-108	-1,886

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Retail Trade, 1954, 1958 and 1963. (Washington: Government Printing Office).

As has the total number of establishments fluctuated in Fayetteville, so have the number of establishments by type as can be seen in Table 21. The most significant changes which have occurred have been the decline in the number of food stores and the gain in the number of gasoline stations, nonstore retailers and automotive dealers. The number of lumber, apparel, furniture and drug stores in Fayetteville has remained relatively constant since 1954. Eating and drinking establishments decreased in number by 15 from 1954 to 1958, but the number in 1963 exceeded the 1958 figure by 15 so that in both 1954 and 1963, there were 47 such establishments.

Sales of wholesale trade establishments in Fayetteville were $22,176,000 in 1963. This represented an increase of 105.9 percent from 1954. Sales data for 1954 are not available for two of the counties in the Northwest Arkansas region, so the following table (Table 22) only contains figures for 1958 and 1963. During this five-year period wholesale sales in Fayetteville increased more than twice as much as did the sales in Northwest Arkansas. In 1954, Fayetteville's sales as a proportion of Northwest Arkansas' sales were 18.7 percent and by 1963 had risen to 25.2 percent due to Fayetteville's more significant rate of growth. Northwest Arkansas' rate of change from 1958 to 1963 was almost equal to that of Arkansas.

There were 41 wholesale trade establishments in Fayetteville in 1963. Fayetteville's establishments as a percent of Northwest Arkansas' total establishments in 1963 was 25.8 percent.

The trend in Fayetteville's wholesale trade establishments followed the same pattern as the number of retail establishments in that the number of wholesale establishments declined from

Table 21

RETAIL TRADE: NUMBER OF ESTABLISHMENTS BY TYPE, FAYETTEVILLE: 1954, 1958 and 1963

Type of Establishment	Number of Establishments 1954	1958	1963
Lumber, building materials, hardware and farm equipment dealers	12	12	13
General merchandise group stores	10	9	15
Food stores	37	28	18
Automotive dealers	19	15	25
Gasoline service stations	20	43	36
Apparel, accessory stores	23	23	22
Furniture, home furnishings and appliance dealers	17	16	16
Eating, drinking places	47	32	47
Drug stores, proprietary stores	12	10	11
Other retail stores	31	36	35
Nonstore retailers	4	3	17
TOTAL	232	227	255

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Retail Trade, 1954, 1958 and 1963 (Washington: Government Printing Office).

1954 to 1958, but increased from 1958 to 1963. Table 23 shows the number of establishments and numerical changes.

Table 22

WHOLESALE TRADE SALES IN FAYETTEVILLE, NORTHWEST ARKANSAS AND ARKANSAS: 1958 AND 1963

	Sales (in thousands) 1958	1963	Percent Change 1958 - 1963
Fayetteville	$12,508	$22,176	77.3
Northwest Arkansas	67,017	87,999	31.3
Arkansas	1,163,741	1,545,891	32.8

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business, Wholesale Trade, 1958 and 1963 (Washington: Government Printing Office).

Table 23

NUMBER OF WHOLESALE TRADE ESTABLISHMENTS IN FAYETTEVILLE, NORTHWEST ARKANSAS AND ARKANSAS: 1954, 1958 AND 1963

	Fayetteville	Northwest Arkansas	Arkansas
Wholesale Trade Establishments:			
1954	37	131	1,965
1958	35	133	2,298
1963	41	159	2,566
Change in Establishments:			
1954-1963	4	28	601
1954-1958	-2	2	333
1958-1963	6	26	268

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Wholesale Trade, 1954, 1958 and 1963 (Washington: Government Printing Office).

Average sales per wholesale establishment in Fayetteville are lower than those in the entire Northwest Arkansas Region or in the State, but between 1958 and 1963 Fayetteville's establishments closed much of the gap as is illustrated in the following insert:

AVERAGE SALES PER WHOLESALE ESTABLISHMENT

	1958	1963
Fayetteville	$ 357	$ 541
Northwest Arkansas	504	552
Arkansas	506	602

From 1958 to 1963 average sales per establishment in Fayetteville increased more than 2 1/2 times the rate in the State and more than 5 times the rate in Northwest Arkansas.

Selected Services as defined in the 1957 edition of the Standard Industrial Classification Manual are establishments primarily engaged in rendering a variety of services to individuals and businesses. The following groups of services are included:

1. Hotels, motels, rooming houses, camps, and other lodging places.

2. Personal services -- laundries, cleaning plants, barber shops, beauty shops, photographic studios, shoe repair shops, funeral parlors, etc.

3. Miscellaneous business services -- advertising agencies, credit agencies, collection agencies, stenographic services, business consulting services, interior decorators, auctioneers, etc.

4. Automobile repair shops, automobile services and garages.

5. Miscellaneous repair services -- radio and television repair, refrigeration service and repair, watch, clock, and jewelry repair, furniture repair, etc.

6. Motion pictures -- motion picture production and distribution, motion picture theaters and drive-in motion picture theaters.

7. Amusement and recreation services (except motion pictures) -- dance halls, theatrical presentations, bowling establishments, golf courses and country clubs, swimming pools, skating rinks, amusement parks, fairs, tourist attractions.

The following major groups are also in the category of services but are not included in the Census of Business figures:

1. Medical and other health services.

2. Legal services.

3. Educational services.

4. Museums, art galleries and botanical and zoological gardens.

5. Nonprofit membership organizations.

6. Private households.

7. Miscellaneous services.

In 1963, Fayetteville's selected services establishments had gross receipts of $5,073,000 -- an increase of 125 percent over 1954 receipts as is shown in the following table.

Table 24

SELECTED SERVICES: VALUE OF RECEIPTS IN FAYETTEVILLE, NORTHWEST ARKANSAS AND ARKANSAS, 1954, 1958 AND 1963

	Fayetteville	Northwest Arkansas	Arkansas
Value of Receipts (in thousands):			
1954	$ 2,252	$ 6,587	$ 113,104
1958	2,695	9,380	151,036
1963	5,073	15,829	209,110
Percent Change in Receipts:			
1954	125.3	140.3	84.9
1958	19.7	42.2	33.5
1962	88.2	68.9	38.5

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Selected Services, 1954, 1958 and 1963 (Washington: Government Printing Office).

Fayetteville's share of Northwest Arkansas' selected service receipts has fluctuated since 1954. From 1954 to 1958, Fayetteville's percent of Northwest Arkansas total receipts fell from 34.2 percent to 28.8 percent, but from 1958 to 1963 rose to 32.0 percent.

Table 25 is a comparison of the 1958 and 1963 selected services receipts by type of service for Washington and Benton counties combined. Comparable data are not available for Fayetteville and the other two counties (Carroll and Madison) of the Northwest Arkansas Region because these figures are tabulated only for areas having 200 establishments or more.

Although the personal services represented the most important division in receipts in the two-county area in both 1958 and 1963, the rate of increase in receipts (43.8 percent) was slower than in most of the categories, thus the proportion of personal service receipts to total receipts fell from 35.7 percent in 1958 to 29.8 percent in 1963. Automobile repair receipts were more important to total selected service receipts in 1963 (27.8 percent of the total) than in 1958 (24.1 percent of the total). The largest percentage gain occurred in the miscellaneous business services receipts.

Table 25

SELECTED SERVICES RECEIPTS BY TYPE OF ESTABLISHMENT, WASHINGTON AND BENTON COUNTIES COMBINED: 1958 AND 1963
(in thousands)

	1958	1963	Percent Change
Hotels, motels, tourist courts, camps	$ 1,011	$ 2,204	118.0
Personal services	2,850	4,099	43.8
Miscellaneous business services	570	1,520	166.7
Auto repair, auto services, garages	1,928	3,832	98.8
Miscellaneous repair service	630	585	7.1
Motion pictures	532	613	15.2
Other amusement and recreation	463	912	97.0
TOTAL	$ 7,984	$13,765	72.4

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Selected Services, 1958 and 1963 (Washington: Government Printing Office).

In 1963, there were 154 selected service establishments in Fayetteville or 31 more than in 1954. Of this total change, most of the increase was since 1958. The following table compares the number of establishments and changes in the number for Fayetteville as contrasted with the Northwest Arkansas region and the State.

Table 26

NUMBER OF SELECTED SERVICE ESTABLISHMENTS IN FAYETTEVILLE, NORTHWEST ARKANSAS AND ARKANSAS: 1954, 1958 AND 1963

	Fayetteville	Northwest Arkansas	Arkansas
Number of establishments:			
1954	123	520	7,115
1958	124	697	9,180
1963	154	713	9,141
Change in number of establishments:			
1954-1963	31	193	2,026
1954-1958	1	177	2,065
1958-1963	30	16	-39

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Selected Services, 1954, 1958 and 1963 (Washington: Government Printing Office).

Table 27 contains more detailed information on the number of selected service establishments by type in Fayetteville and Northwest Arkansas. As a proportion of the Northwest Arkansas establishments, Fayetteville's share ranges from 36 percent of the motion picture establishments to 12 percent of the miscellaneous repair service establishments.

Average receipts per selected service establishment in Fayetteville have historically been higher than in Northwest Arkansas and than in the State as a whole. The following insert compares the receipts per establishment:

AVERAGE RECEIPTS PER SELECTED SERVICE ESTABLISHMENT
(in thousands)

	1954	1958	1963
Fayetteville	$ 18	$ 22	$ 33
Northwest Arkansas	13	13	22
Arkansas	16	16	23

Table 27

NUMBER OF SELECTED SERVICE ESTABLISHMENTS BY TYPE OF SERVICE IN FAYETTEVILLE AND NORTHWEST ARKANSAS: 1963

Type of Service	Fayetteville	Northwest Arkansas
Hotels, motels, tourist courts, camps	29	117
Personal services	70	284
Miscellaneous business services	10	50
Auto repair, auto services, garages	24	141
Miscellaneous repair services	8	66
Motion pictures	4	11
Other amusement and recreation services	9	44
Total	154	713

Source: U. S. Department of Commerce, Bureau of the Census, Census of Business: Selected Services, 1963 (Washington: Government Printing Office).

Table 28

PROJECTIONS OF RETAIL LAND AND FLOOR SPACE REQUIREMENTS, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965	1970	1975	1980	1985
Series I:					
Retail Trade Employment	2,600	3,150	3,600	4,150	4,800
Land Area in Retail Use (acres)	149	191	231	282	339
Gross Floor Space in Retail Use(sq ft)	1,395,500	1,732,500	2,016,000	2,365,500	2,784,000
Land to Floor Space Ratio	4.6 to 1	4.8 to 1	5.0 to 1	5.2 to 1	5.3 to 1
Amount of Floor Space Per Employee	540	550	560	570	580
Series II:					
Retail Trade Employment	2,600	3,400	3,900	4,500	5,200
Land Area in Retail Use (acres)	149	206	251	306	367
Gross Floor Space in Retail Use(sq ft)	1,395,500	1,870,000	2,184,000	2,565,000	3,016,000
Land to Floor Space Ratio	4.6 to 1	4.8 to 1	5.0 to 1	5.2 to 1	5.3 to 1
Amount of Floor Space Per Employee	540	550	560	570	580

Source: Estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

Table 29

PROJECTIONS OF WHOLESALE LAND AND FLOOR SPACE REQUIREMENTS, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965	1970	1975	1980	1985
Series I:					
Wholesale Employment	300	350	400	450	500
Land Area in Wholesale Use (acres)	37	44	53	62	72
Gross Floor Space in Wholesale Use (square feet)[a]	197,100	238,000	280,000	326,300	375,000
Land to Floor Space Ratio	8.1 to 1	8.1 to 1	8.2 to 1	8.3 to 1	8.4 to 1
Amount of Floor Space Per Employee	660	680	700	725	750
Series II:					
Wholesale Employment	300	400	450	500	550
Land Area in Wholesale Use (acres)	37	51	59	69	80
Gross Floor Space in Wholesale Use (square feet)[a]	197,100	272,000	315,000	362,500	412,500
Land to Floor Space Ratio	8.1 to 1	8.1 to 1	8.2 to 1	8.3 to 1	8.4 to 1
Amount of Floor Space Per Employee	660	680	700	725	750

a Rounded to nearest 100 square feet.

Source: Estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

Table 30

PROJECTIONS OF ADDITIONAL LAND AND FLOOR SPACE REQUIREMENTS FOR SELECTED SERVICES ESTABLISHMENTS, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965-70	1970-75	1975-80	1980-85
Series I:				
Increase in employment	250	250	200	200
Land acreage requirements	14	14	12	12
Floor space requirements (sq ft)	170,000	172,500	140,000	142,000
Land to floor space ratio	3.5:1	3.6:1	3.7:1	3.8:1
Amount of floor space per employee	680	690	700	710
Series II:				
Increase in employment	350	300	250	250
Land acreage requirements	18	17	15	15
Floor space requirements (sq ft)	238,000	207,000	175,000	177,500
Land to floor space ratio	3.5:1	3.6:1	3.7:1	3.8:1
Amount of floor space per employee	680	690	700	710

Source: Estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

Table 31

PROJECTION OF OFFICE SPACE FLOOR AND LAND REQUIREMENTS, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965	1970	1975	1980	1985
Series A:					
Population	26,279	31,900	37,300	43,100	48,800
Land Area in Office Use (acres)	18	23	29	35	42
Floor Space in Office Use(sq ft)[a]	243,800	296,700	346,900	400,800	453,800
Land to Floor Space Ratio	3.2	3.4	3.6	3.8	4.0
Amount of Floor Space per resident	9.3	9.3	9.3	9.3	9.3
Series B:					
Population	26,279	34,300	40,600	47,700	55,300
Land Area in Office Use (acres)	18	25	31	39	47
Floor Space in Office Use (sq ft)	243,800	319,000	377,600	443,600	514,300
Land to Floor Space Ratio	3.2	3.4	3.6	3.8	4.0
Amount of Floor Space per resident	9.3	9.3	9.3	9.3	9.3

[a] Floor space rounded to nearest 100 square feet.

Source: Estimates and projections by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

The Need for Commercial Land

The demand for commercial land is based on the present trade area, its population and trends of growth. Two rates of growth have been projected, based on two sets of employment growth.

Our estimates indicate that during the twenty-year period from 1965 to 1985 requirements for new retail uses will amount to from 190 to 218 acres, requirements for land for wholesale uses will range from 35 to 43 acres, and selected services will require from 52 to 65 acres of additional land.

Office Space

There are basic economic reasons for predicting expansion of new office space supply for Fayetteville. Over and above normal needs for replacement there are major assets which the City possesses which will raise the demand for new space. Among these assets is that the population growth will require more services and consequently, more office space of all types. The economic well-being of the area contributes to the demand for office space uses as well as providing the capacity to afford new space.

Gross floor area of office space in 1965 in the City amounted to 9.3 gross square feet per capita of the City's population. Utilizing this same measure to project office space needs based on our two series of population projections indicates that by 1985 gross city office space would amount to from 453,800 square feet to 514,300 square feet. (See Table 31.)

Standards for Commercial Locations

A review of the present patterns of commercial activity suggests that there are more efficient arrangements for commercial land use. Guide lines for improving these arrangements in the future are summarized below.

Region-Serving Business Areas

Adjoining heavy traffic flows, central to the trade area.

Central business district: location close to peak flow of traffic and pedestrians where retail, professional, financial and related services can be accommodated with access to parking.

Regional business centers: (a) regional shopping centers: location close to two major arterials tributary to trade area (50-100,000 families); site adequate to accommodate peak parking needs and a complete line of shop and store types, eating and entertainment facilities, and branch business and financial services sufficient to fill several hours of a shopper's time (30 to 150 acres); and (b) satellite CBD centers (office centers, automobile sales and service centers, appliance centers, farmers' market and service centers, etc.): locations on intersection of radial and circumferential arteries and on one or more major transit routes, with adequate parking and service areas.

Highway service centers: locations in outlying areas on major highway approaches to urban area where sites are adequate for integrated design of drive-in services and motel accommodations and proper consideration is given to highway safety, roadside beauty, and adjoining uses.

Suitability for development as one center internally arranged or, where appropriate, in an integrated series of subcenters, with consideration for parks and other open spaces, approaches, and adjoining areas.

Wholesale, Building Operations and Truck Related Uses

Reasonably level land, preferably with not more than 5 per cent slope, capable of being graded without undue expense.

Range of choice in close-in and fringe locations, site sizes usually under 5 acres.

Direct access to trucking routes and major street system for incoming goods and outgoing deliveries; frontage on a commercial street or in well-served wholesale centers essential; railroad access for minor proportion of sites or centers.

Suitability for development of integrated centers, with consideration for amenity within the development and adjoining areas.

Table 32

COMMERCIAL LAND USE STANDARDS

	Size	Population	Spacing	Location	Yards	Parking	Emp/FA
Neighborhood Shopping	4-8 acres		1 mile	Intersection of			
Convenience Goods	20,000-100,000 sq ft	5000-20,000		Collectors		2xFA	
Personal Services	5-15 stores			Subdivisions			
Professional Services				or Apartments			
Limited Auto Services				3 min drive			
Entertainment-Food				5 min walk			
Community Shopping							
Shoppers Goods	10-30 acres	20,000-	3 miles	Intersection	50-50-50	3xFa	
Convenience	100,000-300,000 sq ft	100,000		Major Streets			
Professional and Personal Service	15-50 stores						
Business Services							
Auto Services							
Offices					25-10 20	2xFa	130 sq ft/Emp
Central or Regional							
Business and Financial Offices	30-150 acres		5 miles	Radial and			
Governmental Offices	300,000-1,000,000 sqft	50,000-		Circumferential			
Complete Retail Trade	40-100	250,000		Peak Traffic			
Complete Services				Pedestrian Flow			
Automotive-Farm				Parking			
Service Districts	5-40 acres						
Trucking-Warehousing-Bus	100,000-1,000,000 sqft			Circumferential			
Builders Services-Truck Service	4-25				45 20-20		
Highway				Approach			
Auto & Farm Services				Highways			
Personal Services-Entertainment-Eat							
Motels							

Industrial Land Use

According to the 1963 Census of Manufacturers, Fayetteville had 33 manufacturing establishments with a payroll of approximately $8 million. Of the 33 total number of manufacturing establishments, 14 had 20 or more employees. All employees totaled 2,256 of which 1,907 were production workers. Production workers wages amounted to $6,013,000. Value added by manufacture was $17,121,000 or more than double the 1958 figure of $8,244,000.

Fayetteville's share of Northwest Arkansas' 1963 manufacturing activity is illustrated in the following table.

Table 33

MANUFACTURING ESTABLISHMENTS, PRODUCTION WORKERS AND VALUE ADDED, FAYETTEVILLE AND NORTHWEST ARKANSAS, 1963

	Fayetteville	Northwest Arkansas	Fayetteville's Percent of Region
Number of establishments	33	202	16.3
Number of production workers	1,907	7,780	24.5
Wages ($1,000)	$6,013	$23,833	25.2
Value added by manufacture, adjusted ($1,000)	$17,121	$75,485	22.7

Source: U. S. Department of Commerce, Bureau of the Census, Census of Manufactures: 1963 (Washington: Government Printing Office).

Fayetteville has by tradition been a trade center and University community. In recent years, however, the City has begun to accumulate a substantial industrial employment. In fact, by 1966 the industrial employment was over 4,000 and this was larger than University of Arkansas employment, trade employment or service employment. Recently, trade and services have grown at a faster rate than manufacturing. A history of major manufacturing establishments is listed below.

	Pre 1940	1940-1955	After 1955
Food	1	3	
Textile		1	
Apparel		2	
Lumber	1		

	Pre 1940	1940-1955	After 1955
Furniture		2	
Print and Publish	1		1
Glass, Clay, Concrete		1	
Electrical Machinery		1	
Metal Fabrication			1
Miscellaneous		1	2
	3	11	4

Fayetteville's first industries were established to produce non-durable goods such as food, textiles and wood products. Recently, more industries have been built to produce durable goods. These newer plants ship most of their products out of the area, they are built on large outlying sites and they have fairly large payrolls. The two tables below indicate the use of land by type of industry and the major employers by name.

	City Limits		Planning Area	
Land Use Classification	Acreage	Percent of Developed Area	Acreage	Percent of Developed Area
Manufacturing	176.75	2.63	14.33	0.04
Food and Kindred Products	17.83	0.27	14.00	0.04
Textile Mill Products	7.16	0.11	...	...
Apparel and Other Finished Products	4.15	0.06	...	...
Lumber and Wood Products	43.12	0.64	0.33	(d)
Printing, Publishing and Allied Industries	10.58	0.16	...	...
Primary Metal Industries	17.63	0.26	...	...
Fabricated Metal Products	5.57	0.08	...	...
Miscellaneous Mfg.	70.71	1.05	...	...

Major Employers - 1966

Date Established	Company	Employees
1929	Campbell Soup Company	1,469
1958	D. H. Baldwin Company	549
1965	Shakespeare of Arkansas, Inc.	473
1941	Oberman Manufacturing Company	368
1957	Standard Register	240
1951	Bear Brand Hosiery	227
1898	Fulbright Wood Products	153
1962	EPC of Arkansas	142
1953	J. R. Kearney Corporation	115
1860	Northwest Arkansas Times	62

The Need for Industrial Land

It seems likely that Fayetteville with the University, major shopping facilities, Beaver Lake, an ample labor supply, a central location and the hope of improved transportation facilities will continue to attract industries. During the next 20 years the City will need to provide between 80 and 170 acres of land for industrial growth. These estimates are based on two different rates of employment growth and they are illustrated in Table 34.

Standards for Industrial Locations

The 1945 land use map shows all of the City's industrial property along the railroad between 7th Street and Sycamore. The 1965 maps shows the major industries scattered throughout the southwest quarter of the City along the railroad and several traffic arteries. These locations reflect the need for larger sites and the shift from railroad frontage to highway frontage.

Terrain and the location of water and sewer facilities in the White River watershed are other reasons for industrial locations south of the City. This is the easiest area to serve with major utility lines.

The industrial sites are not grouped but scattered among small residential developments and vacant areas. This pattern is very difficult to serve economically with utilities, truck routes and collector streets.

About 40% of the industrial employees commute from more than ten miles away. Most of the rest commute from other parts of the City since there is very little housing nearby. Both types of commuters must drive through congested areas of the City to get to work.

Guidelines for improving this pattern are summarized below.

Manufacturing Areas

Reasonably level land, preferably with not more than 5 per cent slope, capable of being graded without undue expense.

Range of choice in close-in, fringe, and dispersed locations.

Extensive manufacturing: large open sites for modern one-story buildings and accessory storage, loading and parking areas in fringe and dispersed locations, usually 5 acres as a minimum, with some sites 10, 25, 50, or 100 or more acres depending on size of urban area and economic outlook for industrial development of extensive lines of activity.

Intensive manufacturing: variety of site sizes for modern one-story or multiple-story buildings and accessory

storage, loading and parking areas in close-in and fringe locations, usually under 5 acres.

Direct access to commercial transportation facilities; in fringe and dispersed locations, access to railroad major trucking routes, cargo airports; and in close-in locations, for a major proportion of sites, access to both railroad and trucking routes, with the balance adjoining trucking thoroughfares.

Within easy commuting time of residential areas of labor force and accessible to major thoroughfare routes directly connected with housing areas.

Availability of utilities at or near the site such as power, water and waste disposal facilities.

Compatibility with surrounding uses, considering prevailing winds, possibilities of protective belts of open space, development of "industrial parks", and other factors of amenity both within the manufacturing areas and in relation to adjoining land uses.

Table 34

PROJECTIONS OF INDUSTRIAL LAND AND FLOOR SPACE REQUIREMENTS, FAYETTEVILLE, ARKANSAS: 1965 to 1985

	1965	1970	1975	1980	1985
Series I:					
Manufacturing Employment	3,950	4,300	4,700	5,200	5,700
Land Area in Industrial Use (acres)	177	192	211	232	255
Floor Space in Industrial Use(sq ft)[a]	1,035,000	1,161,000	1,316,000	1,508,000	1,710,000
Land to Floor Space Ratio	7.4 to 1	7.2 to 1	7.0 to 1	6.7 to 1	6.5 to 1
Number of Employees Per Acre	22	22	22	22	22
Amount of Floor Space Per Employee	262	270	280	290	300
Series II:					
Manufacturing Employment	3,950	4,750	5,550	6,600	7,800
Land Area in Industrial Use (acres)	177	212	250	294	349
Floor Space in Industrial Use(sq ft)[a]	1,035,000	1,282,500	1,554,000	1,914,000	2,340,000
Land to Floor Space Ratio	7.4 to 1	7.2 to 1	7.0 to 1	6.7 to 1	6.5 to 1
Number of Employees Per Acre	22	22	22	22	22
Amount of Floor Space Per Employee	262	270	280	290	300

[a] The estimates of floor space are obtained by multiplying the projected employment figures by the estimated amount of floor space per employee.

Source: Estimates and projections prepared by James A. Vizzier, Consulting Planner, Fayetteville, Arkansas.

Table 35

INDUSTRIAL

LAND USE STANDARDS

	Size	Width	Yards	FAR	Location	Accessory	Nuisances	Requirements
Manufacturing								
Intensive	Under 5 acres	200'	50-25-25	1/3	Close-fringe	Warehousing	Traffic	Parking 1 sp/Emp/shift + Visitors
Extensive	5-100	200'	100-50-50	1/3	Outlying	Truck Service	Signs	Loading 1 sp/1000 sq. ft. storage
Non Durable						Auto Service	Parking	
Food					Fringe	Restaurant		1 sp/10,000 sq. ft. total
Textiles					Fringe	Motel	Waste	Utilities 6" gas lines
Printing					Close	Bank	Storage	12" water lines
Wood Products					Outlying			8" sewer lines
Durable								
Metal					Fringe			
Machinery					Fringe			Access control
Electrical					Fringe			Truck route
Miscellaneous								Railroad siding Expansion space Buffer space Screening and landscaping

Standards for Major Public and Semi-Public Locations

More specific standards for public buildings, schools, parks, utilities and streets are listed in other parts of this report. General considerations for locating major land uses are listed below.

Region-Serving Recreation, Education, and Cultural Facilities

Reasonably level land for facilities involving structures, accessory parking, and active recreation areas, with perhaps not more than 5 per cent slope, capable of being graded without undue expense; for large open spaces and public reservations, land with a variety of natural features and no limitations as to slope and drainage characteristics (often includes land not practical for other urban uses).

Major parks, public reservations, and golf courses: acreage sites in fringe and outlying areas, ranging from gently rolling terrain for golf courses to topography with variable features for parks and reservations.

Colleges, medical centers, and institutions: fringe locations on level to rolling terrain in areas protected from traffic and incompatible uses; site adequate to accommodate buildings, accessory parking, outdoor uses, and grounds, with due consideration to approaches and appearance.

Cultural facilities, large churches, and spectator sports: level sites in central locations (out of high-value areas) adequate to accommodate building, accessory parking, and landscaping, with due consideration to approaches and general appearance.

Suitability of unusual land forms and natural drainage creeks for incorporation into an integrated open space system in urban area, serving as natural breaks between functional use areas and providing connective links between recreation areas and large public and institutional open areas.

Direct access to major thoroughfare and transit or stage routes with direct and easy connections to the residential communities of the urban area.

Public Service Facilities

Suitable locations, adequate in size for following uses, as determined by special studies: civic center, subcenters, and general civic services; cemeteries; water works, sewage disposal facilities, and garbage and refuse disposal facilities; gas works, power plants, and substations, and communications facilities; service facilities; railroad terminals, marshaling yards; overland bus and union truck terminals and servicing; helioports, landing strips, and major airports; and so on.

Public and Semi-Public Activities

Fayetteville has an unusually large amount of space in its planning area devoted to public and semi-public activities. It has the University of Arkansas campus and farm, a Veteran's Administration Hospital, three water supply lakes, two sewage disposal plants, and an airport in addition to its supply of schools, parks, public buildings and other community facilities.

Government employment has been one of the significant factors in employment growth along with manufacturing trade and services. About 93% of government empolyment is in public education with the rest in public administration. The University of Arkansas with over 2000 employees accounts for most of this.

The distribution of public and quasi-public land is shown in the following table.

	City Limits		Planning Area	
Land Use Classification	Acreage	Percent of Developed Area	Acreage	Percent of Developed Area
Governmental Services	16.87	0.25	0.50	(d)
Educational Services	408.78	6.08	...	...
Miscellaneous Services	61.95	0.92	16.50	0.04
Cultural, Entertainment, and Recreational Activities	110.79	1.65	435.00	1.12
Cultural Activities	0.64	0.01	...	...
Public Assembly	25.41	0.38	...	...
Amusements	36.17	0.54	100.0	0.26
Recreational Activities	3.04	0.04	335.00	0.86
Parks	45.53	0.68	...	...
Transportation, Communication and Utilities	2,149.86	31.98	1,512.16	3.88
Railroad Transportation	117.42	1.74	25.25	0.06
Motor Vehicle Transportation	5.17	0.08	20.00	0.05
Aircraft Transportation	137.85	2.05	30.00	0.08
Highway and Street Right-of-Way	956.15	14.22	950.41	2.44
Automobile Parking (City Lots)	3.83	0.06	...	...
Communication	0.51	0.01	...	...
Utilities	928.88	13.82	486.50	1.25
Other	0.05	(d)	...	...

In 1965, 1,532 acres within the city limits of Fayetteville were in public and semi-public uses. The University of Arkansas land encompasses about one-fifth of the total public and semi-public land in the City. The Lake Fayetteville area accounts for

about another two-fifths of the public and semi-public land.

Plans for expansion of the University of Arkansas until 1975 call for the acquisition of an additional 68 to 72 acres.

> The University plan proposes a direction and extent of growth which will expand: the academic area by at least 12 acres with the possibility of an additional 4 acres; the housing area by 22 acres; and 26 acres for athletics and free recreation.

The Fayetteville Public School System facilities include one high school, two junior high schools, and six elementary schools. The total 1967 fall enrollment for these schools was 4,660 pupils. In addition to these schools there is an area vocational-technical high school located in the City which had an enrollment of 130 students in the fall of 1967. Special students of junior high school age are now afforded the opportunity to receive special training at the Northwest Arkansas Supplementary Center (NASEC) school which was opened during the fall of 1967 with an enrollment of 100 students.

The Fayetteville School District currently occupies about 136.5 acres of land. The present capacity of existing facilities is approximately 5,500 students including the vocational-technical school and NASEC.

Based on our high projection of population for 1980 we estimate the need for the following school facilities:

1 new high school
2 new junior high school
5 new elementary schools

These projected school facility needs indicate a requirement of approximately an additional 70 to 80 acres of land for school uses.

Fayetteville has been selected as the site for a mental health center to cover from 40 to 100 acres. The facility may also include space for other public agencies such as civil defense, welfare and rehabilitation services.

Sometime in the near future the City expects to have a federal court and office building.

Cultural, entertainment and recreational activities are concentrated on the University campus. Aside from the City Library, the youth center and two parks, the school system provides the major cultural and recreational facilities for the City. There are a few commercial amusements such as a golf driving range, bowling alleys and pool halls. With a community facilities plan more land will be set aside for these uses.

Map Symbol	Soil Name & Description	Dwellings with: Public or Community Sewerage System	Dwellings with: Septic Tank Filter Field	Camp Sites	Picnic Areas	Intensive Play Areas	Golf Fairways	Light Industries	Trafficways	Erodibility (Bare Soil)	Drainage Class
LkC2	Linker loam, 3 to 8% slopes, eroded	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Severe	Well Drained
LnC2	Linker gravelly loam, 3 to 8% slopes, eroded										
ApC2	Apison loam, 3 to 8% slopes, eroded										
AsC2	Apison gravelly silt loam, 3 to 8% slopes, eroded										
PgC2	Pembroke gravelly silt loam 3 to 8% slopes, eroded										
PeB	Pembroke silt loam, 1 to 3% slopes										
PeC2	Pembroke silt loam, 3 to 8% slopes, eroded										
LkB	Linker loam, 1 to 3% slopes										
PsB	Pickwick silt loam, 1 to 3% slopes										
PsC2	Pickwick silt loam, 3 to 8% slopes, eroded										
PkC2	Pickwick gravelly silt loam 3 to 8% slopes, eroded										
FaC2	Fayetteville fine sandy loam, 3 to 8% slopes, eroded										
AlC2	Allen loam, 3 to 8% slopes, eroded										
AeC	Allegheny gravelly loam, 3 to 8% slopes										
AeC2	Allegheny gravelly loam, 3 to 8% slopes, eroded										
BaD	Baxter cherty silt loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Moderate Traf.-Fair (slopes)	Slight No limitation	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Moderate Slopes	Slight No limitation	Severe	Well Drained
LnD	Linker gravelly loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Moderate Slopes	Slight No limitation	Moderate Slopes	Moderate Slopes	Moderate Slopes	Slight No limitation	Severe	Well Drained
PkD2	Pickwick gravelly loam, 8 to 12% slopes, eroded										
FaD2	Fayetteville fine sandy loam, 8 to 12% slopes, eroded										
AlD2	Allen loam, 8 to 12% slopes, eroded										
AeD2	Allegheny gravelly loam, 8 to 12% slopes, eroded										
FaE2	Fayetteville fine sandy loam, 12 to 20% slopes, eroded	Moderate Slopes	Severe Slopes	Severe Slopes	Moderate Slopes	Severe Slopes	Severe Slopes	Severe Slopes	Moderate Slopes	Severe	Well Drained
AlE2	Allen loam, 12 to 20% slopes, eroded										
AgD	Allegheny stony loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Moderate Slopes	Slight No limitation	Severe	Well Drained
AnE	Allen stony loam, 8 to 12% slopes										
CaB	Captina silt loam, 1 to 3% slopes	Slight No limitation	Severe Perc.-slow	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Moderate	Moderately Well Drained
CaC2	Captina silt loam, 3 to 6% slopes, eroded									Severe	
JaB	Jay silt loam, 1 to 3% slopes									Moderate	
JaC	Jay silt loam, 3 to 8% slopes									Severe	
SfB	Savannah fine sandy loam, 1 to 3% slopes									Moderate	
SfC2	Savannah fine sandy loam, 3 to 8% slopes, eroded									Severe	
Ca-C	Captina silt loam, 3 to 6% slopes									Severe	

Map Symbol	Soil Name & Description	Dwellings with: Public or Community Sewerage System	Dwellings with: Septic Tank Filter Field	Camp Sites	Picnic Areas	Intensive Play Areas	Golf Fairways	Light Industries	Trafficways	Erodibility (Bare Soil)	Drainage Class
StD2 StE2	Summit stony silty clay, 3 to 12% slopes, eroded Summit stony silty clay, 12 to 25% slopes, eroded	Moderate PBV-Low Sh-Sw-High	Severe Perc.-Slow PBV-Low Sh-Sw-High	Severe Traf.-Poor (Texture-stones)	Severe Traf.-Poor (Texture-stones)	Severe Traf.-Poor (Texture-stones)	Severe Traf.-Poor (Texture-stones)	Severe PBV-Low Sh-Sw-High	Severe TSC-Low Inherent erodibility	Severe	Moderately Well Drained
EoD ErE ErF	Enders stony loam, 3 to 12% slopes Enders-Allegheny complex, 8 to 20% slopes Enders-Allegheny complex, 20 to 40% slopes	Severe PBV-Low Sh-Sw-High	Severe Perc.-Slow PBV-Low Sh-Sw-High	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe TSC-Low Inherent erodibility	Severe	Moderately Well Drained
AgF AoF FeF	Allegheny stony loam, 12 to 40% slopes Allen stony loam, 12 to 35% slopes Fayetteville stony fine sandy loam, 12 to 35% slope	Severe Slopes	Severe Slopes	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Slopes	Severe Slopes	Severe	Well Drained
Jo Js	Johnsburg silt loam Johnsburg complex, mounded	Moderate WT-Seasonal high	Severe Perc.-Slow WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Moderate WT-Seasonal high PBV-Low	Moderate WT-Seasonal high TSC-Low	Slight	Somewhat Poorly Drained
Lf Le Ch Ck SsA Sa Sp Sb ToA ToB Ta	Leaf complex, mounded Leaf silt loam Cherokee silt loam Cherokee complex, mounded Summit silty clay, 0 to 1% slopes Samba silt loam Summit complex, mounded Samba complex, mounded Taloka silt loam, 0 to 1% slopes Taloka silt loam, 1 to 3% slopes Taloka complex, mounded	Severe PBV-Low Sh-Sw-High WT-Seasonal high	Severe Perc.-Slow PBV-Low Sh-Sw-High WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe Traf.-Poor WT-Seasonal high	Severe PBV-Low Sh-Sw-High WT-Seasonal high	Severe TSC-Low WT-Seasonal high	Severe	Somewhat Poorly Drained to Poorly Drained
So Ro HoF MoE	Sogn rocky silt loam Rock land Hector-Mountainburg stony fine sandy loams, 3 to 40% slopes Montevallo soils, 12 to 25% slopes	Severe R less than 20"	Severe R less than 20"	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones) Prod.-Low	Severe R less than 20"	Severe R less than 20"	Severe	Well Drained to Excessively Drained
ClG	Clarksville cherty silt loam 12 to 60% slopes	Severe Slopes; R may be less than 30"	Severe Slopes; R may be less than 30" Inadequate filtering	Severe Traf.-Poor (gravel) Slopes	Severe Traf.-Poor (gravel) Slopes	Severe Traf.-Poor (gravel) Slopes	Severe Traf.-Poor (gravel) Slopes	Severe Slopes; R may be less than 30"	Severe Slopes; R may be less than 30"	Severe	Somewhat Excessively Drained

Map Symbol	Soil Name & Description	Public or Community Sewerage System	Septic Tank Filter Field	Camp Sites	Picnic Areas	Intensive Play Areas	Golf Fairways	Light Industries	Trafficways	Erodibility (Bare Soil)	Drainage Class
GuC	Guin cherty silt loam, 3 to 8% slopes	Slight No limitation	Slight No limitation	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Slight No limitations	Slight No limitations	Moderate	Well Drained
BaE	Baxter cherty silt loam, 12 to 20% slopes	Moderate R may be less than 48"; slopes	Moderate R may be less than 48"; slopes	Severe Traf.-Poor (gravel) slopes	Moderate Traf.-Poor (gravel) slopes	Severe Traf.-Poor (gravel) slopes	Severe Traf.-Poor (gravel) slopes	Severe Slopes	Moderate Slopes	Severe	Well Drained
BaF	Baxter cherty silt loam, 20 to 45% slopes	Severe Slopes; R may be less than 48"	Severe Slopes; R may be less than 48"	Severe Traf.-Poor (gravel) slopes	Severe Traf.-Poor (gravel) slopes	Severe Traf.-Poor (gravel) slopes	Severe Traf.-Poor (gravel) slopes	Severe Slopes; R may be less than 48"	Severe Slopes	Severe	Well Drained
NaC	Nixa cherty silt loam, 3 to 8% slopes	Slight No limitations	Severe Perc.-slow	Moderate Traf.-Fair (gravel)	Slight No limitations	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Slight No limitations	Slight No limitations	Severe	Moderately Well Drained
NaD	Nixa cherty silt loam, 8 to 12% slopes	Slight No limitations	Severe Perc.-slow	Moderate Traf.-Fair (gravel) slopes	Moderate Traf.-Fair (gravel) slopes	Moderate Traf.-Fair (gravel) slopes	Moderate Traf.-Fair (gravel) slopes	Moderate Slopes	Slight No limitations	Severe	Moderately Well Drained
MoD HmC HmD	Montevallo soils, 3 to 12% slopes Hector-Mountainburg gravelly fine sandy loams, 3 to 8% slopes Hector-Mountainburg gravelly fine sandy loams, 8 to 12% slopes	Severe R or shale less than 20"	Severe R or shale less than 20"	Slight No limitations	Slight No limitations	Severe R or shale less than 20"	Severe Prod.-Low	Severe R or shale less than 20"	Moderate R or shale less than 20"	Severe	Well Drained to somewhat Excessively Drained
EnC EnC2	Enders gravelly loam, 3 to 8% slopes Enders gravelly loam, 3 to 8% slopes, eroded	Moderate PBV-Low Sh-Sw-High	Severe Perc.-Slow PBV-Low Sh-Sw-High	Slight No limitations	Slight No limitations	Slight No limitations	Slight No limitations	Severe PBV-Low Sh-Sw-High	Severe TSC-Low Inherent erodibility	Severe	Moderately Well Drained
EnD EnD2	Enders gravelly loam, 8 to 12% slopes Enders gravelly loam, 8 to 12% slopes, eroded	Severe PBV-Low Sh-Sw-High	Severe Perc.-Slow PBV-Low Sh-Sw-High	Moderate Slopes	Slight No limitations	Moderate Slopes	Moderate Slopes	Severe PBV-Low Sh-Sw-High	Severe TSC-Low Inherent erodibility	Severe	Moderately Well Drained
Rk	Razort loam	Severe Flood hazard	Severe Flood hazard	Moderate Flood hazard	Slight No limitations	Slight No limitations	Slight No limitations	Severe Flood hazard	Slight No limitations	Slight	Well Drained
Cr Sn Rg Ra	Cleora fine sandy loam Sloam silt loam Razort gravelly silt loam, occasionally flooded Razort silt loam, occasionally flooded	Severe Fl. hazard WT-High	Severe Fl. hazard WT-High	Severe Fl. hazard WT-High Traf.-Poor	Severe Fl. hazard WT-High Traf.-Poor	Severe Fl. hazard WT-High Traf.-Poor	Severe Fl. hazard WT-High Traf.-Poor	Severe Fl. hazard WT-High	Moderate Fl. hazard WT-High	Slight	Well Drain. Mod.W. Drn. Well Drain. Well Drain.
Ec	Elsah cobbly soils	Severe Fl. hazard WT-High stones	Severe Fl. hazard WT-High Stones	Severe Fl. hazard WT-High Stones Traf.-Poor	Severe Fl. hazard WT-High Stones Traf.-Poor	Severe Fl. hazard WT-High Stones Traf.-Poor	Severe Fl. hazard WT-High Stones Traf.-Poor	Severe WT-High Fl. hazard PBV-Low	Severe WT-High Fl. hazard TSC-Low	Slight	Somewhat Exc. Drain. to Exc. Drained
Eg	Elsah gravelly soils	Severe Fl. hazard Gravel WT-High	Severe Fl. hazard Gravel WT-High	Severe Fl. hazard Gravel Traf.-Poor	Severe Fl. hazard Gravel Traf.-Poor	Severe Fl. hazard Gravel Traf.-Poor	Severe Fl. hazard Gravel Traf.-Poor	Severe Traf.-Poor Fl. hazard WT-High	Severe Traf.-Poor Fl. hazard WT-High	Slight	Somewhat Exc. Drain. to Exc. Drained
SsB SsC2 SsD2	Summit silty clay, 1 to 3% slopes Summit silty clay, 3 to 8% slopes, eroded Summit silty clay, 8 to 12% slopes, eroded	Moderate PBV-Low Sh-Sw-High	Severe Perc.-Slow PBV-Low Sh-Sw-High	Severe Traf.-Poor (Texture)	Severe Traf.-Poor (Texture)	Severe Traf.-Poor (Texture)	Severe Traf.-Poor (Texture)	Severe PBV-Low Sh-Sw-High	Severe TSC-Low	Severe	Moderately Well Drained

JOHNSON

WASHINGTON

SOILS CLASSIFICATION

Nearly one-third of the developed land within the City is used for transportation, communication or utilities. Of this land 14% is in streets, 14% is in public and semi-public utilities and about 2% is in airports and 2% in railroads. If the City moves toward a more compact and efficient development, the proportion of land in these uses should drop somewhat.

Resource Production and Agriculture

There is very little resource production or agriculture within the City limits. There are a number of such uses in the planning area. Within the City part of the airport and part of the new sewage treatment plant is leased for cattle grazing. There is a thoroughbred horse farm and there are also several veterinary offices, slaughter houses and homes where animals or poultry are raised for home use.

Beyond the city limits there are grape vineyards, beef cattle farms, horse farms and mines for limestone and gravel. There are a few small truck farms and very little land in field crops.

	City Limits		Planning Area	
and Use Classification	Acreage	Percent of Developed Area	Acreage	Percent of Developed Area
esource Production	1,400.89	20.84	35,999.95	92.61
Agriculture	1,392.87	20.72	35,978.11	92.56
Crop, Fruit, Tree Nut, or Vegetable Farms	...	...	731.00	1.88
Dairy Farms	...	...	840.00	2.16
Poultry Farms	...	...	322.00	0.83
Livestock and General Farms	...	...	33,758.61	86.85
Other Agriculture	1,392.87	20.72	326.50	0.84
Agricultural Related Activities	6.74	0.10	5.84	0.02
Forestry Activities and Related Services	0.73	0.01	...	...
Fishing Activities and Related Services	0.55	0.01	10.00	0.03

STREETS, TRAFFIC AND PARKING

Streets, traffic and parking seem to be grouped in the minds of most citizens of Fayetteville as the most important problem for city government. It is true that traffic is a problem and it is a relentless one. It imposes itself upon each citizen every time he moves from one place to another.

But traffic is a symptom of less obvious problems. Many of the commercial, industrial, residential and public uses are not located in a convenient relation to each other. Terrain, the railroad and large blocks of land use have created barriers that are difficult to cross with streets. The original street system, built to serve the railroad and wagons, is ill-suited to auto travel. The standard of living and the number of automobiles has risen much faster than street construction. Many businesses and institutions have grown without providing for automobiles.

Traffic Growth

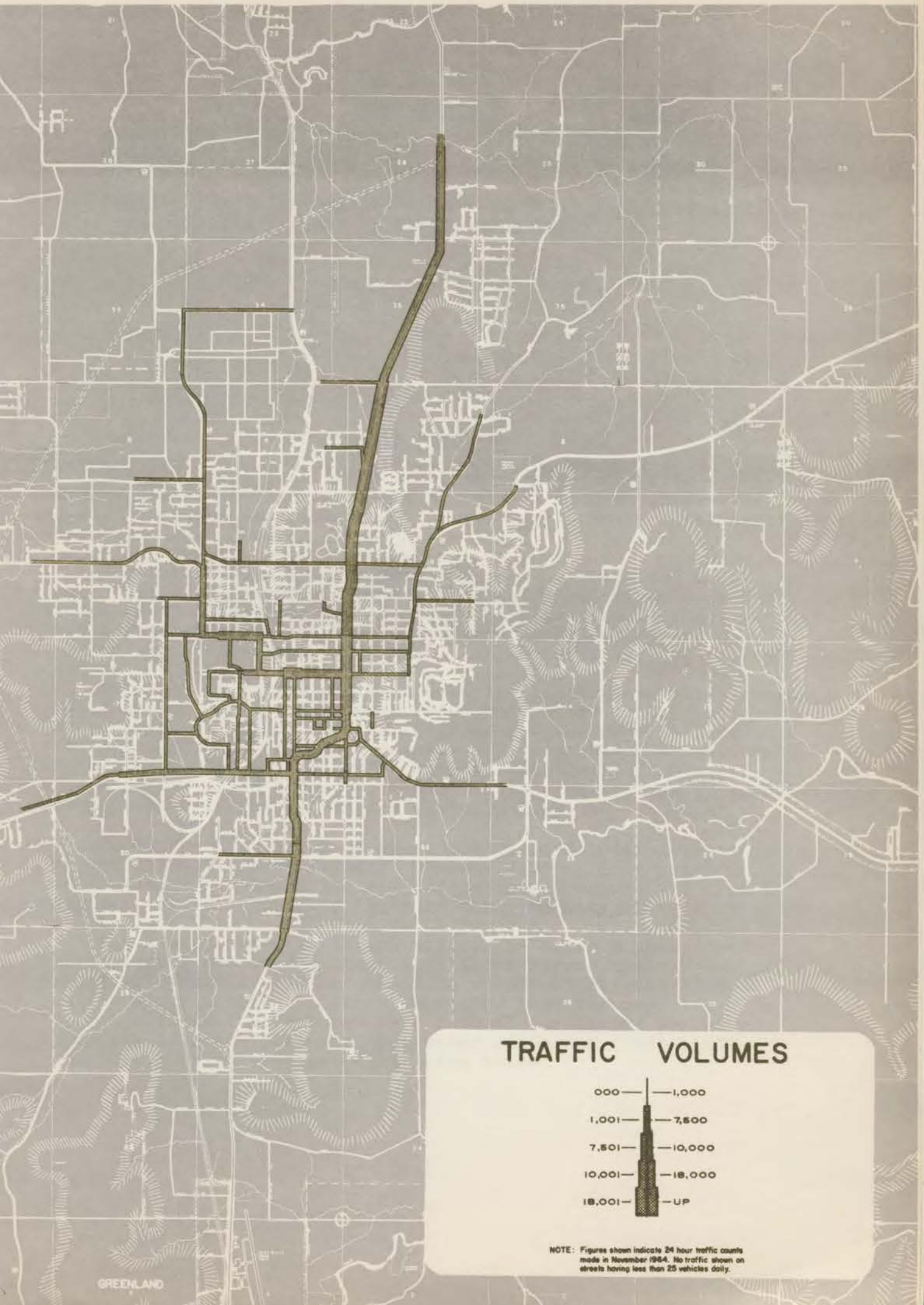
Locally, the number of automobiles is growing faster than the population. There is approximately 1 car or truck per 2 people in Washington County. There are more cars per family, more trips per car and more miles per trip. More than 1/3 of the City's population moves along the City streets and highways during the two peak hours each day. Each year several tons of freight move along City streets for each resident of the City. Vehicle registrations and highway traffic are growing at a rate of 8% to 10% per year while the urban population is growing about 4% per year.

Vehicle Registrations - Washington County

	Automobiles	Trucks
1958	16,187	6,372
1962	20,051	8,189
1967	28,000	11,000

Traffic Volumes - Selected Points

Selected Points	1964	1967	%
Highway 71 N	11,000 vpd	14,600 vpd	32.7
71 S	8,300	11,000	32.5
16 E	5,200	6,900	32.7
16 W	1,500	2,500	66.7
62 W	5,300	7,800	47.2
45 E	1,800	2,150	19.4


TRAFFIC VOLUMES
000 — 1,000
1,001 — 7,500
7,501 — 10,000
10,001 — 18,000
18,001 — UP
NOTE: Figures shown indicate 24 hour traffic counts made in November 1964. No traffic shown on streets having less than 25 vehicles daily.
GREENLAND

Airline Traffic

	Passengers	Freight
1962	15,196	131,708#
1967	32,499	490,487#

These figures include 16 flights each day by Frontier Airlines and 3 flight per day by Scheduled Skyways.

General Problems

The principal traffic movement through Fayetteville is the north-south traffic moving along Highway 71 between Interstate 44 at Joplin and Interstate 40 at Fort Smith. Most of the east-west traffic is local.

The major local traffic movement is also north and south along Highway 71 becuase most of the local population is concentrated along this route and it is the only continuous route through this populated area. There are minor movements of commuting workers and shoppers east and west along Highways 16, 62 and 45.

With the exception of the five state highways in the planning area there are very few through roads and streets. Land use patterns, steep grades and the railroad are the major barriers that block through streets and roads. As a result a motorist who travels more than a mile or two in Fayetteville finds himself on one of the state highways. This is also true of county roads outside the City but within the planning area.

Added to the problem of short and discontinuous streets is the condition of those streets. Narrow widths, poor pavement, bad drainage, no sidewalks, and unsafe intersections all make it easier to travel the state highways than the City streets.

The heavy concentration of traffic on a few highways and short streets has loaded these facilities beyond their practical capacity. There are number of factors that affect the flow of traffic along a street. It is estimated that the capacity of a 40 foot collector street can vary from 1700 vehicler per hour to nearly 3300 vehicles per hour under different conditions. Some of the more important are listed below:

Factors Affecting Traffic Flow

- Pavement width
- On-street parking
- Intersections and curb cuts
- Turn movements
- Land use
- Curves
- Driving habits
- Pedestrians
- Stop lights and signs
- Street grades
- Sight distance
- Commercial vehicles
- Objects along roadside

Streets perform two functions: they carry traffic and they provide access to property. One function must predominate because streets can't be built economically to perform both functions well. In residential areas, streets connect with individual driveways and through traffic is discouraged. The primary function of residential streets is to provide access to homes. Most commercial areas are located on heavily traveled streets which connect with all parts of the City. If direct access between businesses and the through street is available, there is conflict between passing traffic and parking cars. If access to the businesses is from local streets and not from the through street, the conflict is eliminated.

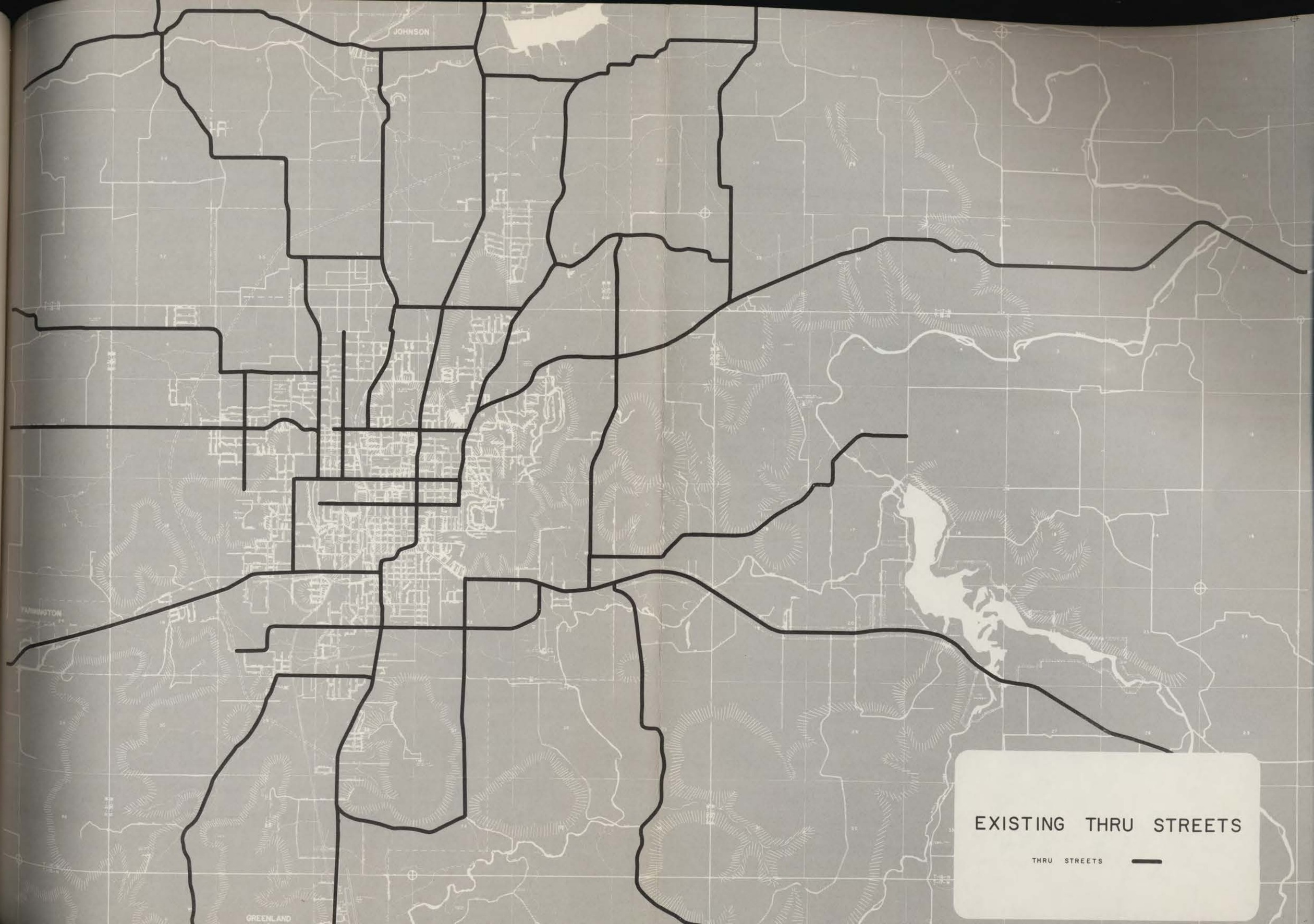
Left turns, confusing traffic signals, inadequate sight distance, complex intersections and railroad crossings at grade all serve to slow and disrupt the flow of traffic. Each driveway and cross street that intersects with a through-street creates a point of conflict with traffic flow. Fewer conflicts mean better traffic flow.

A car parked at the curb occupies street space which could carry a lane of traffic. When a car parks or leaves the curb, it disrupts another lane of traffic temporarily. Consideration of the expense of traffic congestion, makes on-street parking space the most costly parking space in the City. It is estimated that parking on a street reduces traffic capacity by about one-half.

The traffic streets should be as free of the factors listed above as possible. Unfortunately, the principal streets of Fayetteville must perform both functions because most of them are lined with commercial activity. As a result they do neither well. Through traffic and local traffic turning in and out are in conflict. Accidents provide a graphic example of this conflict. In 1964 there were 887 accidents in this City and by 1967 this figure was 1195.

A Comparison of Capacity and Volume
on Selected Streets in Fayetteville

Street	1964 Volumes	Practical Capacity
Maple	1,300 vph	1,057 vph
Dickson	2,000 vph	1,037 vph
Center	400 vph	1,125 vph
College	2,400 vph	1,780 vph
East	160 vph	765 vph


JOHNSON
FARMINGTON
GREENLAND
EXISTING THRU STREETS
THRU STREETS

Existing Street Conditions

Local traffic is forced to use the state highway system for a number of reasons. The local streets do not connect points of traffic origin and points of traffic destination directly. Many streets are too narrow, others are too steep, paving conditions are poor and many intersections are blind and too narrow. Most streets are too short.

Existing Street Conditions

City		Planning Area
31.6	State Highways	22.7
135	Streets and roads	112
29	High type paving	12
70	Intermediate type paving	
36	Low type paving	100
5.3	Narrow right-of-way	
8.2	Narrow roadway	
80	Drainage problems	
46.3	Poorly lighted	
29	Substandard paving	86
22	Intolerable paving	14
12.5 mi.	Commercial frontage	

Sources: A summary report of Highways-Roads-Streets in Fayetteville, Arkansas Highway Department; Field survey, J. A. Vizzier, Consulting Planner.

The state highway department estimates that it will take about one million dollars a year for 20 years to improve the streets to standard condition. One-third of this would be for maintenance and two-thirds for construction.

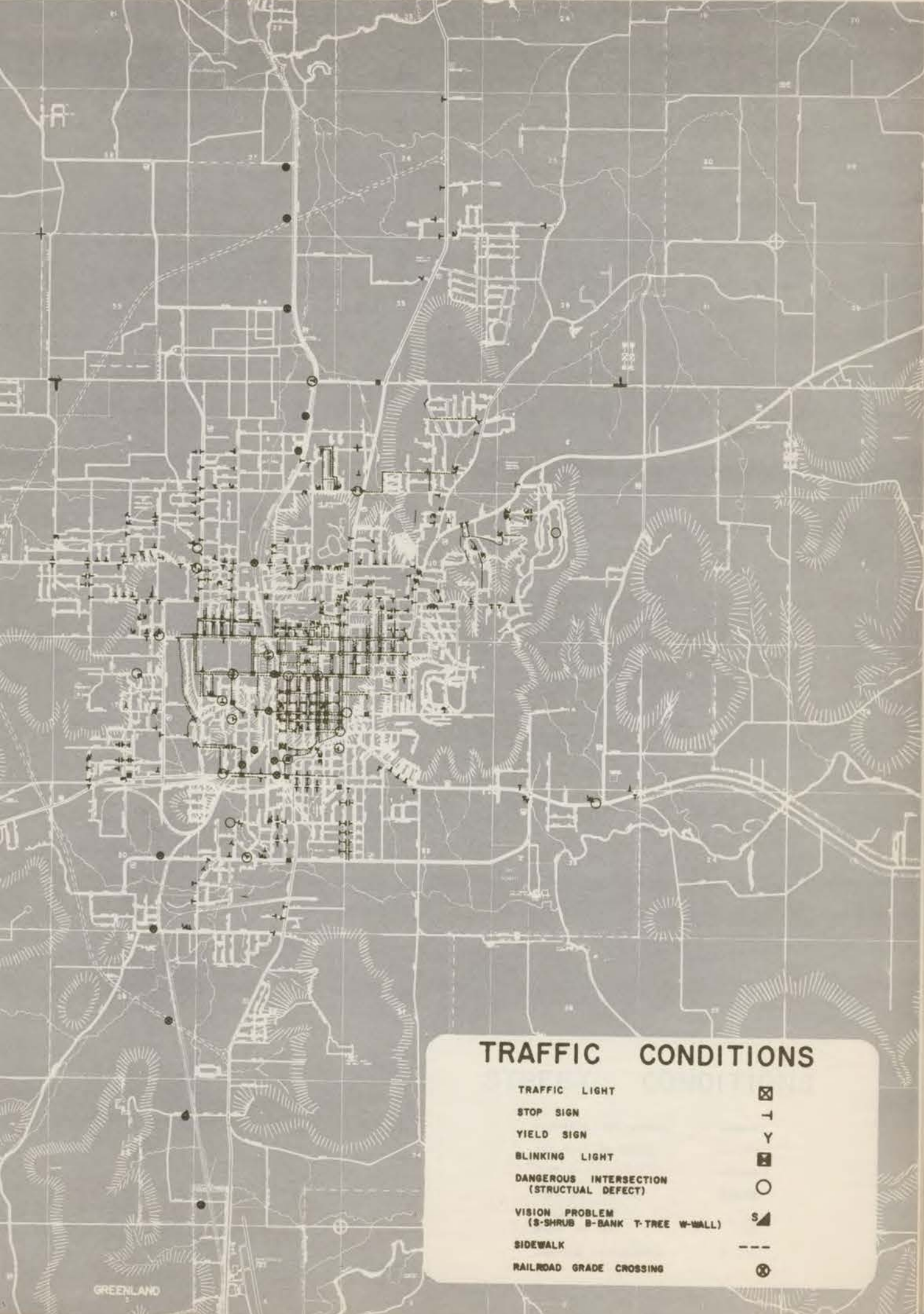
A recent community renewal study indicates that it will take six million dollars to bring existing streets up to standard in the older neighborhoods.

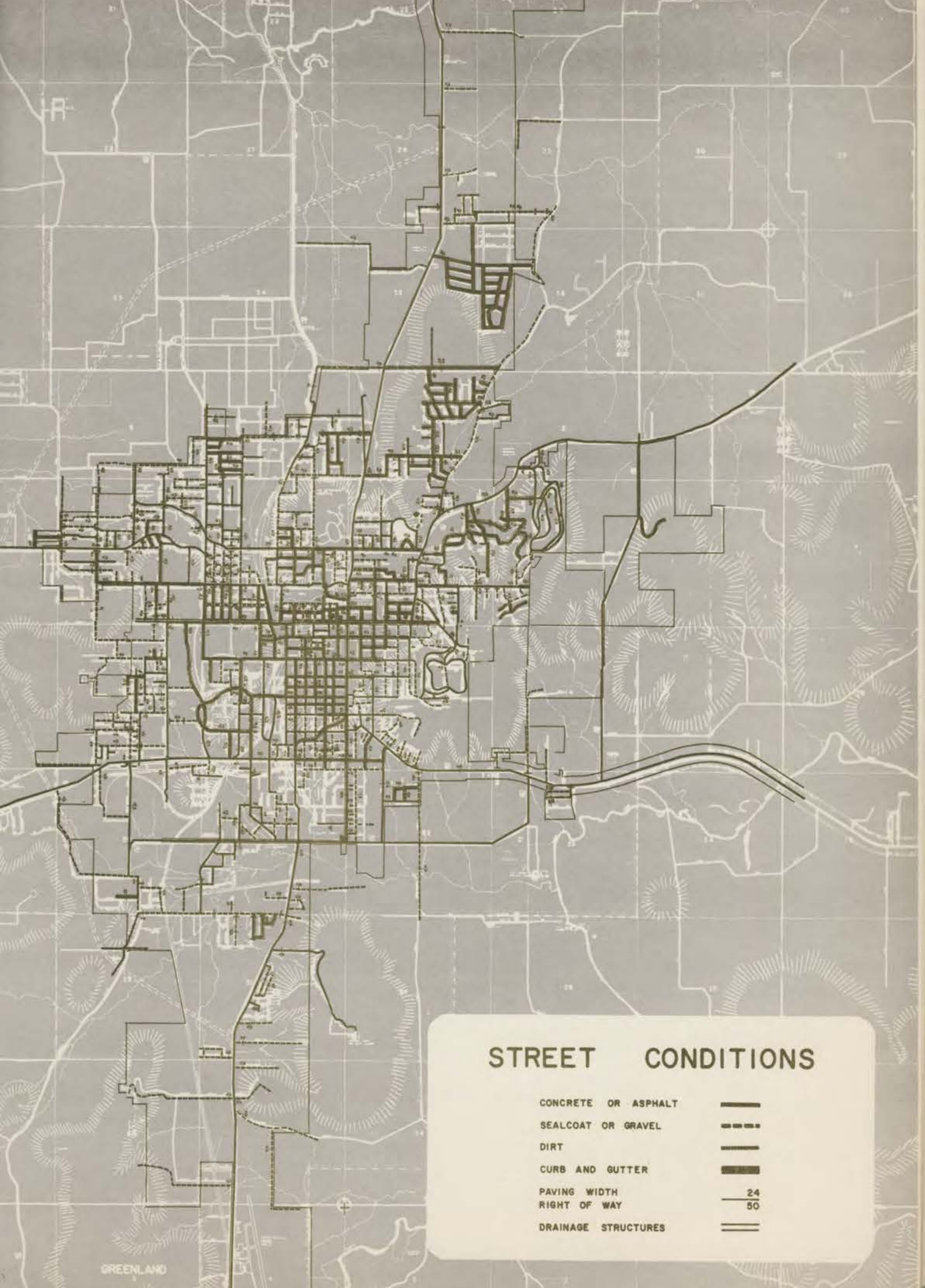
Traffic Generators and Traffic Characteristics

Traffic is generated by land uses and different types of traffic are generated by different land uses. If all traffic went in the same direction at the same speed there would be less conflict and less congestion. But this would only be possible if different types of traffic were separated.

In Fayetteville we have cars taking children to school, employees to work, shoppers to shops and travelers between highways. We also have trucks moving goods to warehouses and delivering goods to homes. Other trucks are passing through the City to destinations elsewhere. Because of the lack of through streets, most of this traffic uses the same five highways mentioned above and much of it uses these highways at the same time of day.

The following series of maps shows each type of traffic, its origin, its destination and the ideal traffic routes between the two. These maps suggest that additional traffic routes might be developed to separate conflicting types of traffic. They suggest that some traffic generators might be separated from other types of generators. And they suggest that scattered commercial uses could be served more efficiently if they were grouped.


TRAFFIC CONDITIONS
TRAFFIC LIGHT
STOP SIGN
YIELD SIGN
BLINKING LIGHT
DANGEROUS INTERSECTION (STRUCTUAL DEFECT)
VISION PROBLEM (S-SHRUB B-BANK T-TREE W-WALL)
SIDEWALK
RAILROAD GRADE CROSSING
GREENLAND


STREET CONDITIONS
CONCRETE OR ASPHALT
SEALCOAT OR GRAVEL
DIRT
CURB AND GUTTER
PAVING WIDTH
RIGHT OF WAY
24
50
DRAINAGE STRUCTURES
GREENLAND

JOHNSON

FARMINGTON

STREET, BORDER & TRAFFIC CONTROL INFORMATION

PRESENT STREET CONDITIONS

Concrete or Asphalt

Sealcoat or Gravel

Dirt

Surface Width of Street / Right of Way Width — 14/50

EXISTING TRAFFIC CONTROL DEVICES

Stop Signs •

PRESENT BORDER CONDITIONS

Drainage Structure =

School Traffic

The lines connecting the City's residential neighborhoods with the high school, the two junior high schools and six elementary schools illustrate the need for better traffic circulation between the City's residential areas and within each neighborhood. School traffic must follow circuitous routes through neighborhoods and it must move across and along congested highways.

Shopping Traffic

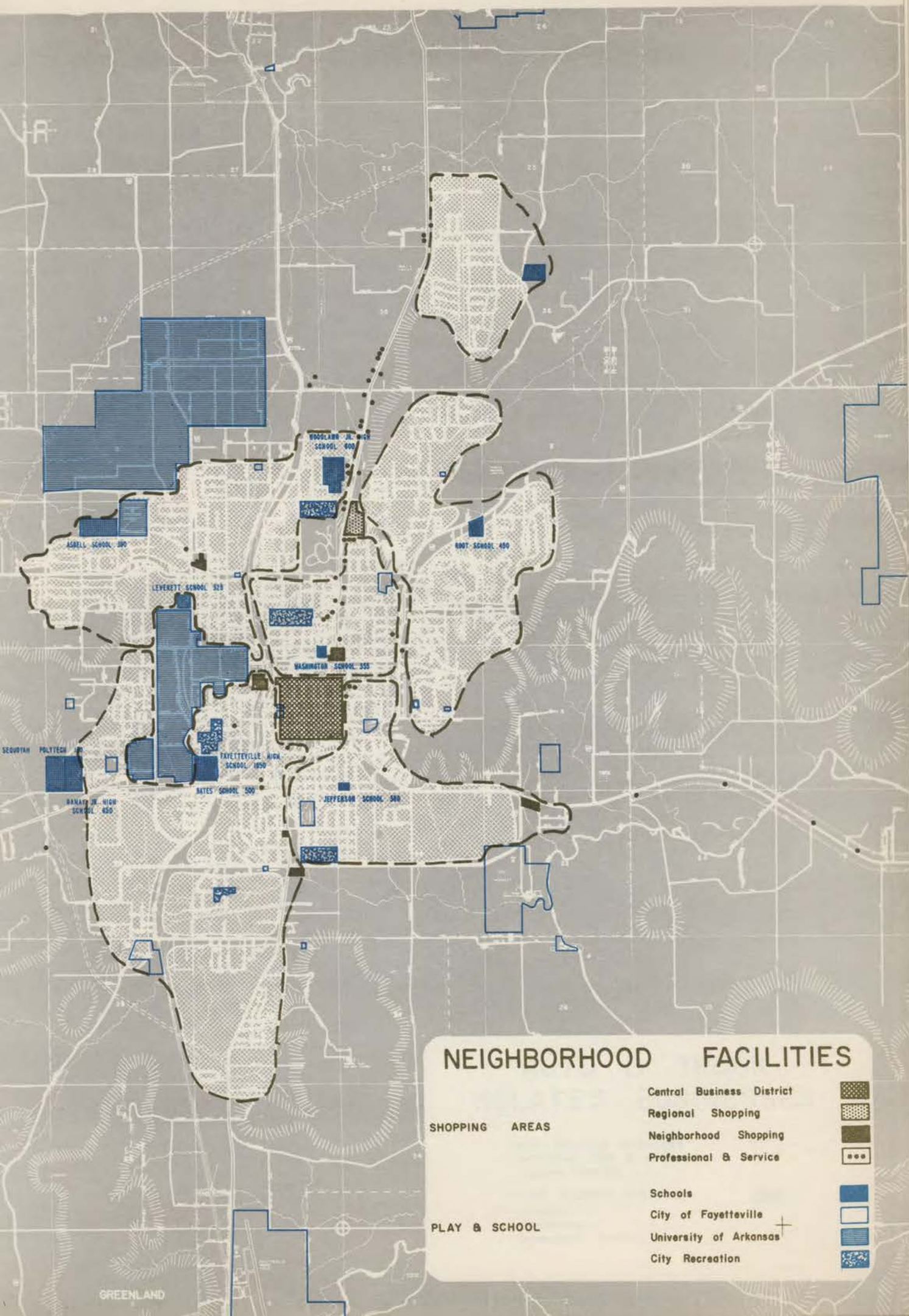
The central business district and three of the City's six shopping centers are located along Highway 71 the major route for through traffic in the City. None of them have safe access to the highway and none of them have good connections to the residential areas in the City. Of the three other shopping areas one is located on a congested city street near the University and the other two are well located at the intersection of major traffic arteries, although access points to these arteries are quite hazardous. Generally, the City's shopping areas suffer from conflict with through traffic, poor access points and poor relation to residential areas.

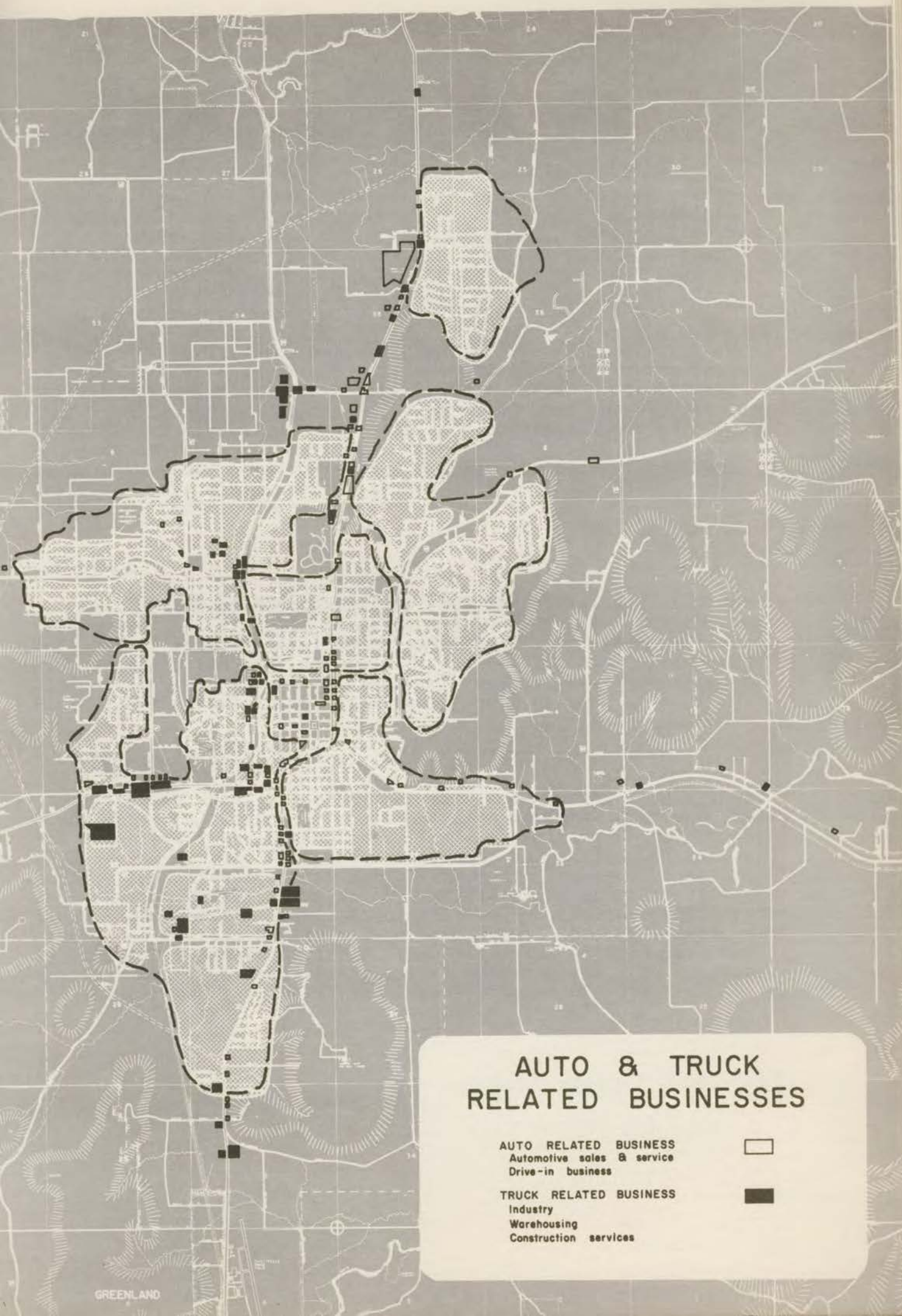
Professional Offices

Many of the offices of doctors, dentists, attorneys, realtors, engineers and other professionals have been moved out of the downtown in search of better offices and more parking space. Curiously, most of these offices have scattered along the highways, choosing the traffic congestion instead of the convenience of the shopping centers. This, of course, adds to the traffic problems along the highways.

Employee Traffic

Of Fayetteville's labor force, 4,000 work in industries mostly scattered through the triangular industrial area between Highway 71 South and Highway 62 West. The University of Arkansas campus employs about 2,400 people. The central business district employs 2,200 and most of the rest work in the shopping centers and commercial strips along the highways. The lack of collector streets connecting residential areas to these employment centers forces the local employees to load the highways during peak hours in the morning and evening. A collector street system would improve the movement of employee traffic.


WOODLAWN JR. HIGH SCHOOL 400
ASBELL SCHOOL 300
LEVERETT SCHOOL 520
WASHINGTON SCHOOL 355
BOOT SCHOOL 450
SEQUOYAH POLYTECH HS
FAYETTEVILLE HIGH SCHOOL 1050
BATES SCHOOL 500
JEFFERSON SCHOOL 580
BANANA JR. HIGH SCHOOL 450
GREENLAND
NEIGHBORHOOD FACILITIES
SHOPPING AREAS
Central Business District
Regional Shopping
Neighborhood Shopping
Professional & Service
PLAY & SCHOOL
Schools
City of Fayetteville
University of Arkansas
City Recreation


AUTO & TRUCK
RELATED BUSINESSES
AUTO RELATED BUSINESS
Automotive sales & service
Drive-in business
TRUCK RELATED BUSINESS
Industry
Warehousing
Construction services
GREENLAND

Automobile and Truck Related Traffic

Originally, the truck related businesses such as builders, freight companies, building suppliers, wholesalers, contractors and industries were located along the railroad. But with the move to larger sites and conversion to trucks, these businesses have moved to highway locations. In most cases they have scattered rather than grouped together where special streets and service facilities might be built for trucks. This has added another complication to highway traffic.

Quite naturally the many automobile related businesses such as service stations, motels, drive-in businesses, amusements, salvage yards and similar activities have located along traffic routes, principally Highway 71, 62 and 16. But these businesses, like the truck related businesses, are scattered at random locations along these routes rather than being grouped in centers where they could be accommodated outside the flow of highway traffic. This has turned these highways into access streets instead of traffic movers.

Commuters

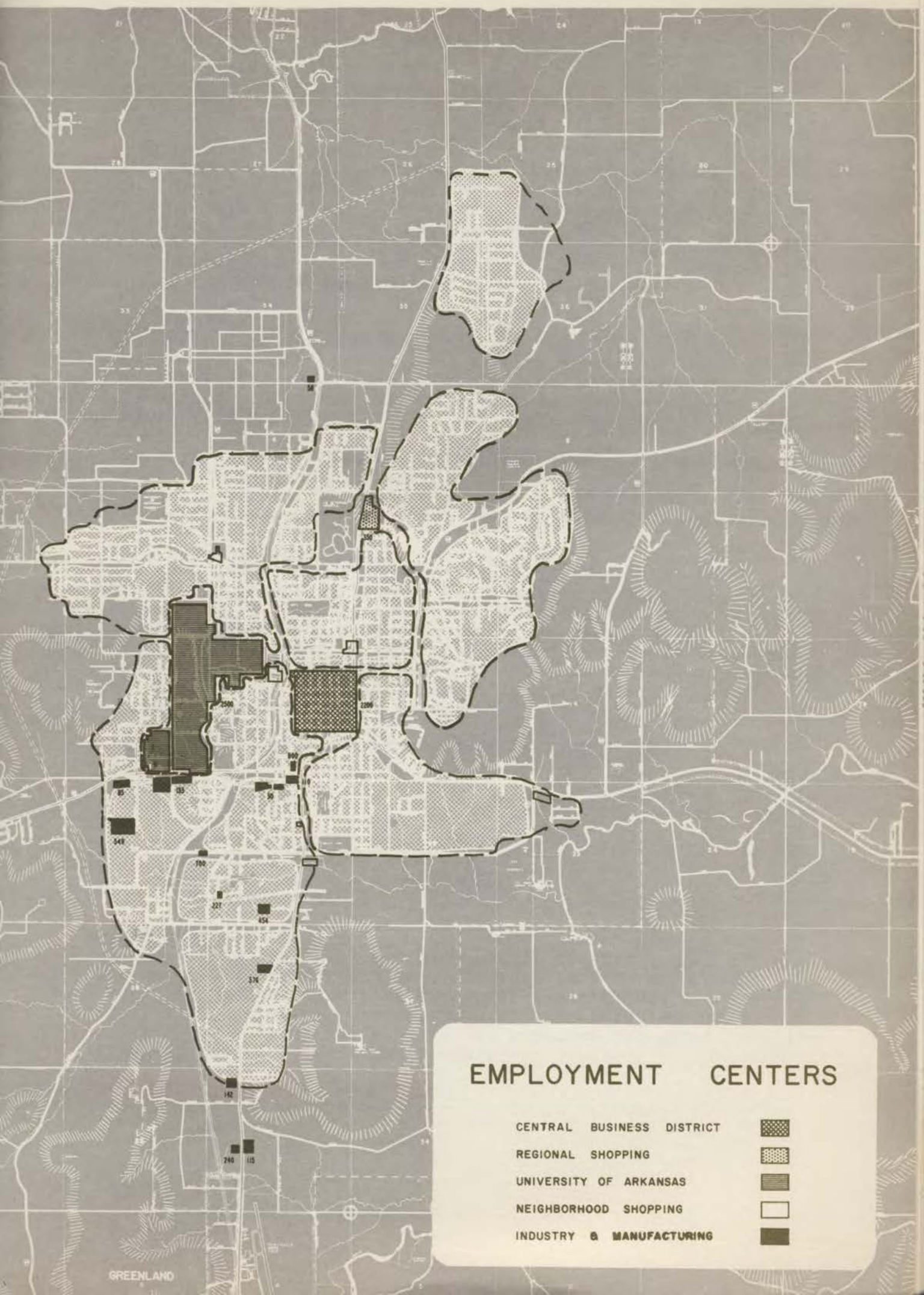
Nearly 1500 of Fayetteville's 4000 industrial workers commute from homes that are over 10 miles away. Nearly 1200 of the secondary school pupils come from outside the City. Over 2000 Univerwity students and over 260 faculty and staff commute from other communities. An estimated 1000 employees drive from outside the City to businesses in the city limits each day.

External Traffic

There are seven major highway entrances to the City. They bring shoppers, workers, school children into the City and trucks and travelers through the City. Traffic arriving on one of these highways is destined for some section of the City or to another highway leading out of the City. There are a number of major land uses which this traffic must skirt to get to these destinations. Some of the larger concentrations of land use which generate local traffic and also form barriers to through traffic are te central business district, the University of Arkansas campus, the University of Arkansas Experimental Farm, the V.A. Hospital, the airport and the industrial area southeast of town.

General Traffic Movements

External traffic can move directly north and south along Highway 71 although it is slowed by congestion. It can move east and west across the southern edge of the City along the relocation of Highway 16. When the Highway 71 bypass is completed around the west side of the City, the southern, western and northern fringes will be connected. East-west movements across the north side of the City and north-south movements across the east side of the City are quite difficult. It is also quite difficult for traffic to move diagonally across the City (northwest-southeast and northeast-southwest).


EMPLOYMENT CENTERS
CENTRAL BUSINESS DISTRICT
REGIONAL SHOPPING
UNIVERSITY OF ARKANSAS
NEIGHBORHOOD SHOPPING
INDUSTRY & MANUFACTURING
GREENLAND

Parking Facilities

Fayetteville is planning a street system which will provide traffic circulation to all parts of the City. This system will not function unless there is room for vehicles to stop and park in each part of the City. The automobile passenger must become a pedestrian before he becomes a customer or worker or student or resident. Most of the newer buildings provide ample parking or loading space, but many older buildings were built before automobiles and trucks were so numerous.

Parking in Commercial Areas

The central business district is the oldest part of the City and the one most affected by a parking shortage. Many offices and businesses have given up a central location downtown to move out to shopping centers or highway locations where more parking is available.

The high parking demand is within one block of the central square and within one block of Dickson Street between College and Arkansas. Within this area there are 1,000 parking meters with one-half on the street and one-half in parking lots.

Employer-Employee Parking

A survey of employers and employees indicates that there are about 2,170 people working in the downtown area, and 1,770 of them drive to work. Of these about 1,530 said they parked off-street and 240 said they parked on street meters. 235 of the off-street parkers reported that they parked in metered lots and the rest reported parking in small private lots and behind buildings off the alley. This means that almost 1/2 the meters on-street and in public lots are filled with employees.

Summary of Employer-Employee Parking Survey

Employees Polled		2,170
Driving to Work	1,770	
Parking		
Street Meters	240	
Unmetered Streets	90	
Metered Lots	235	
Private Areas	1,205	

Curb Parking

In May of 1968 a check was made of all metered spaces every 30 minutes on a Wednesday and on a Saturday to determine parking turnover. The Wednesday was selected for a normal day and the Saturday, although rainy, was the Saturday preceding Mother's Day and it proved to be quite busy. As expected the great majority of drivers parked for less than 1 hour.

Curb Turnover

Time Parked	Wednesday, May 8 Number	%	Saturday, May 11 Number	%	Average
1/2 hr. or less	2,137	64.60	2,078	59.40	62.30
1 hr. or less	349	10.60	634	18.40	14.50
1 1/2 hr. or less	276	8.40	327	9.50	8.90
2 hrs. or less	110	3.30	150	4.35	3.80
2 1/2 hrs. or less	88	2.90	81	2.35	2.50
3 hrs. or less	77	2.30	40	1.15	1.75
3 1/2 hrs. or less	62	1.90	37	1.07	1.46
4 hrs. or less	40	1.20	24	0.70	0.95
4 1/2 hrs. or less	28	0.85	19	0.55	0.69
5 hrs. or less	17	0.50	13	0.38	0.40
5 1/2 hrs. or less	11	0.30	11	0.32	0.33
6 hrs. or less	10	0.30	7	0.20	0.25
6 1/2 hrs. or less	9	0.27	9	0.26	0.27
7 hrs. or less	9	0.27	3	0.09	0.18
7 1/2 hrs. or less	7	0.21	6	0.18	0.19
8 hrs. or less	70	2.10	37	1.07	1.57
Total	3,300	100.00	3,476	100.00	100.00

Use of Parking Space

The location of parking space is just as important as the amount. Short-time parkers will not walk as far as those that expect to stay for long periods. The following map has a graph showing the percentage of available meters that were in use during each hour of the two days of the survey. As one might expect the outlying meters are not fully used and there is competition for the meters near the more intensive business areas. This suggests that a more balanced use of meters would be possible if long-time parkers used the outlying meters and short-time parkers used the central meters.

Comparison Between Central Business District and Shopping Centers

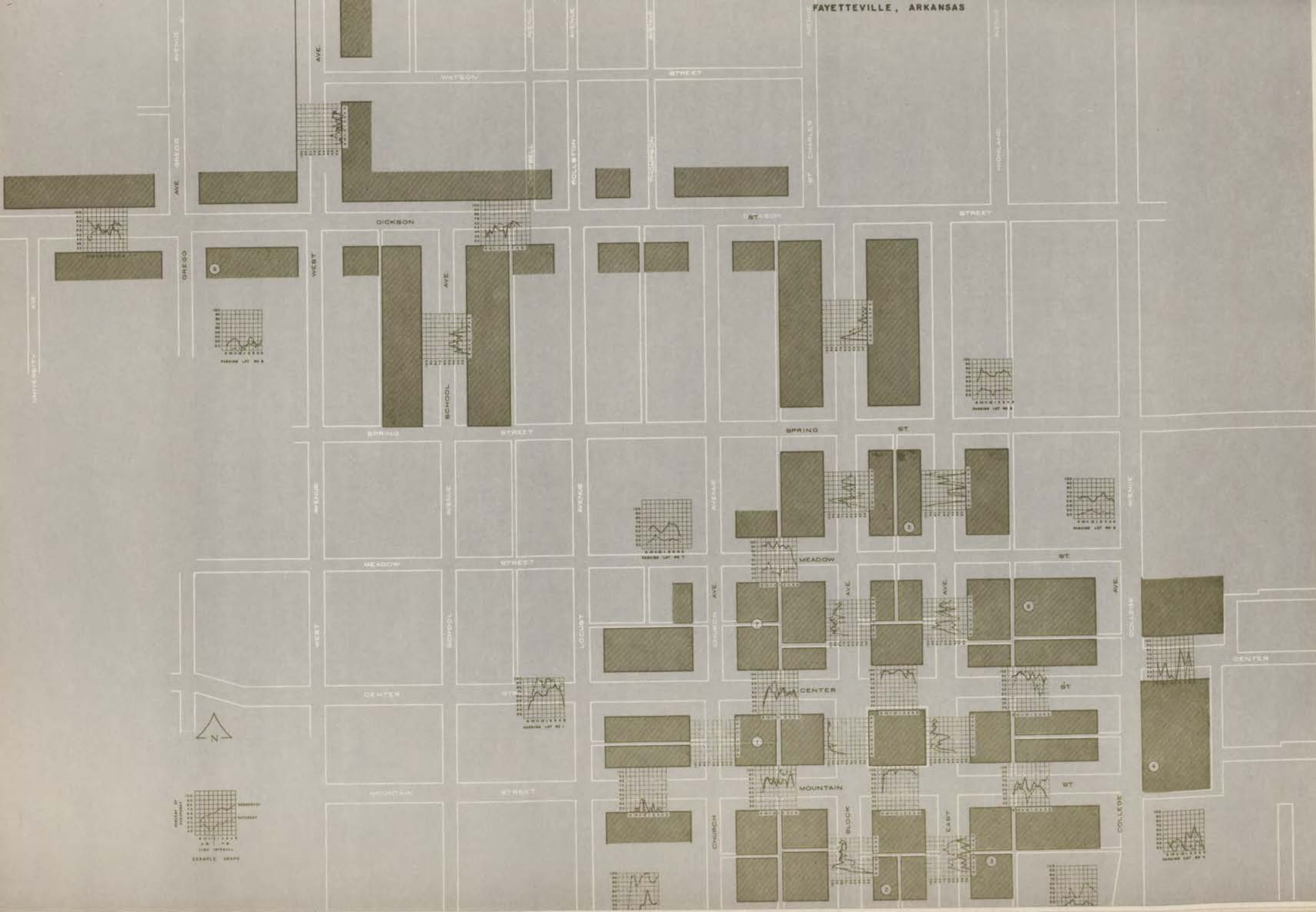
Location	Floor Space	Parking Spaces	Ratio
Central Business District	1,340,000	2,200	0.65 to 1
Evelyn Hills	169,000	660	3 to 1
Oak Plaza	37,000	250	2 to 1
Watson's	92,000	600	3 to 1
Southgate	47,000	300	2 to 1
Piggly-Wiggly	18,000	50	1-1/2 to 1
Lafayette - College	21,000	150	3 to 1

Parking demands for shopping centers and central business districts are somewhat different. Shopping centers are built with large display areas, small storage areas and they depend

EMPLOYEE PARKING FACILITIES

CENTRAL BUSINESS DISTRICT - DICKSON STREET

FAYETTEVILLE, ARKANSAS



upon a larger degree of self-service. Retail selling and services predominate and the centers are subject to peak shopping loads during popular hours.

The central business district has multi-story buildings with storage, smaller display areas and more clerks to serve the shopper. Governmental activities, major offices, business and professional services and financial institutions are present along with the retail sales and personal services. Parking demand is spread more evenly throughout the day. 3/4 of the employees, 1/4 of the shoppers, and 1/5 of the business clients are present between 11 a.m. and 2 p.m. Even considering these differences more parking is needed to serve the present downtown plus new parking for future business expansion, and it is needed in convenient locations. A minimum of 600 spaces are needed now.

The University of Arkansas Campus

Parking demand is growing annually on the University of Arkansas campus. Registrations for faculty and student cars grew from 5,365 in 1964 to 11,589 in 1967. Total registrations are not present at one time because some students leave and are replaced by other students each semester and each summer session. Faculty members often register more than one car while using only one on-campus. But parking demand has grown faster than enrollment in recent years.

During this time some new parking space has been added and much of it has been redistributed. Five new academic buildings have been built in the central part of the new campus with only token parking space provided. One of these new buildings displaced an existing parking lot. New parking space has been provided in campus residential areas but these lots are removed from the center of the campus.

With more concentrated academic facilities in the center of the campus more and more students and faculty are attempting to drive from residential areas to the academic area to park. The overflow is parking along nearby residential streets. The City, in an effort to improve traffic flow near the campus, is removing parking from some of these streets. The combination of more parking generators and fewer spaces is creating a crisis in the academic area.

Parking and Loading in Industrial Areas

The industries that have built plants in Fayetteville in the past twenty years have built on large outlying sites with ample room for parking, loading and expansion. There are, however, two older industrial areas where parking and loading are a problem One is the area along West Avenue between Dickson Street and Spring Street. The other is an area along West Avenue and the Frisco Railroad spur between Prairie and 6th Street. The streets in both areas are frequently blocked by a combination of parked cars and trailer trucks backed up to loading docks for loading

and unloading. Loading docks should be recessed inside of the buildings or turned parallel to the streets. Additional parking space is needed for employees.

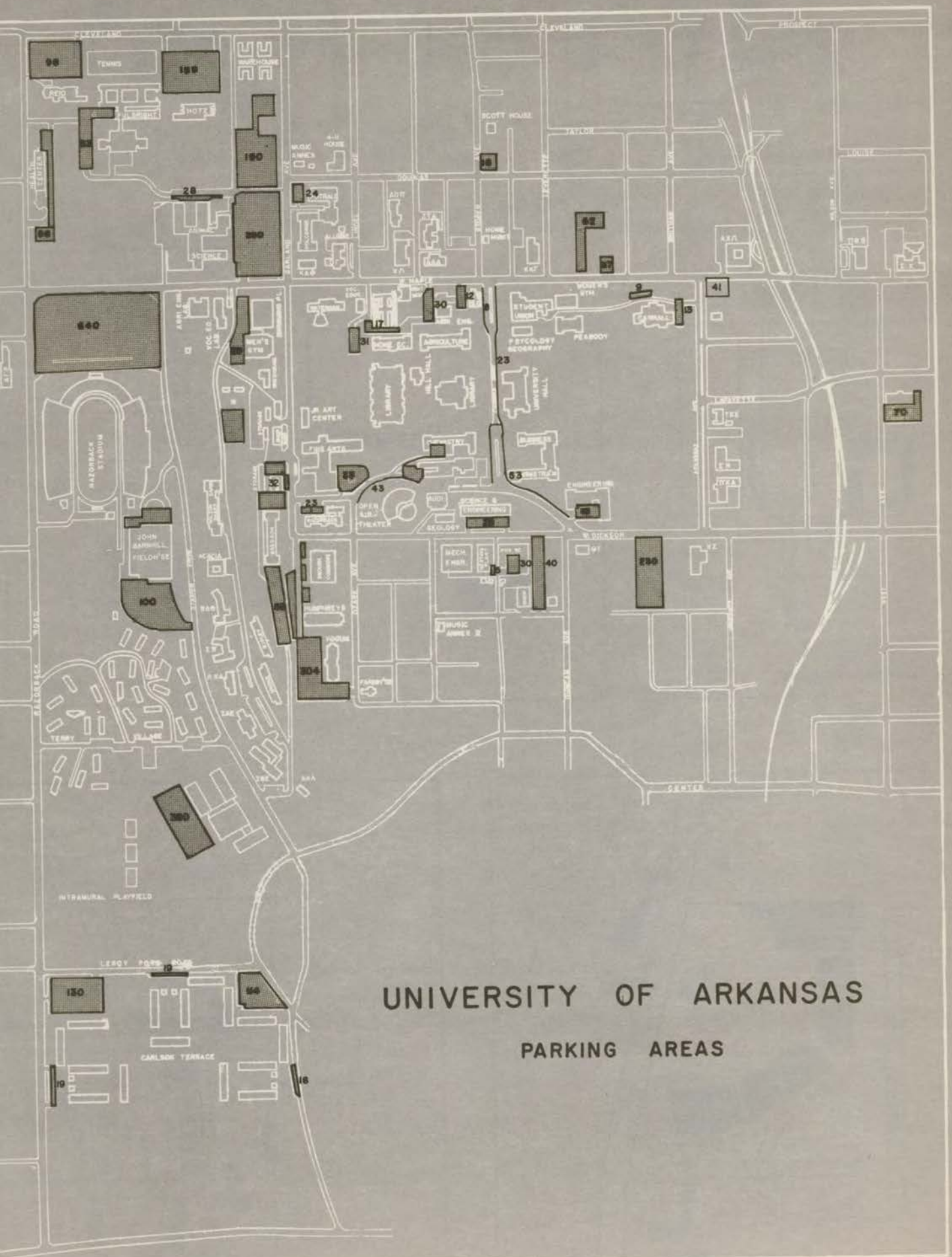
Parking Recommendations

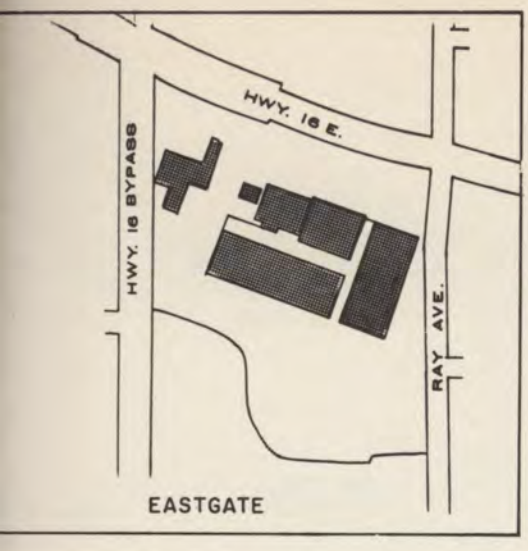
More parking space should be developed off the square and off of Dickson Street for employees. Nearly 600 additional spaces are needed now.

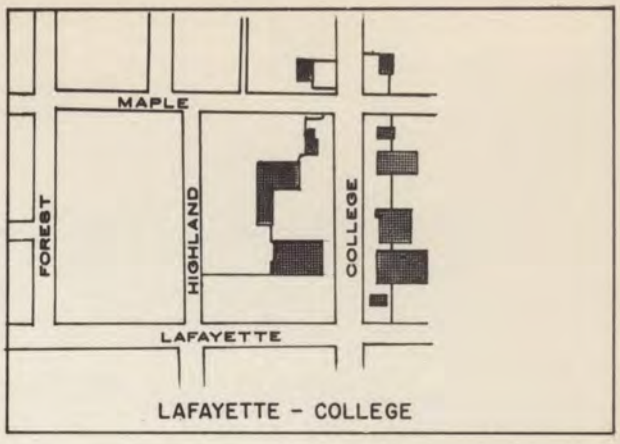
Parking time on meters on the square should be reduced to 30 minutes to encourage the use of off-street lots.

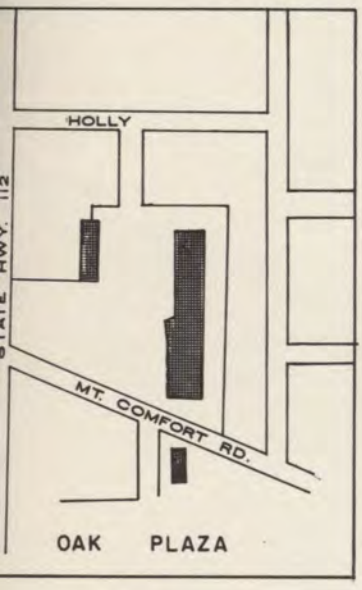
More parking facilities are needed in the academic area of the University of Arkansas campus. Parking demand is growing in this area and parking is being removed from streets in the area.

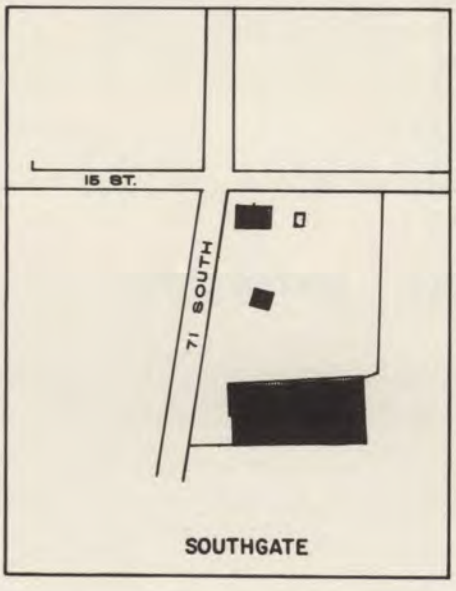
Employee parking space is needed in two older industrial areas at 6th and Prairie and at West Avenue and Dickson. In both these areas the loading space should be moved off the street so that loading trucks do not block the street.

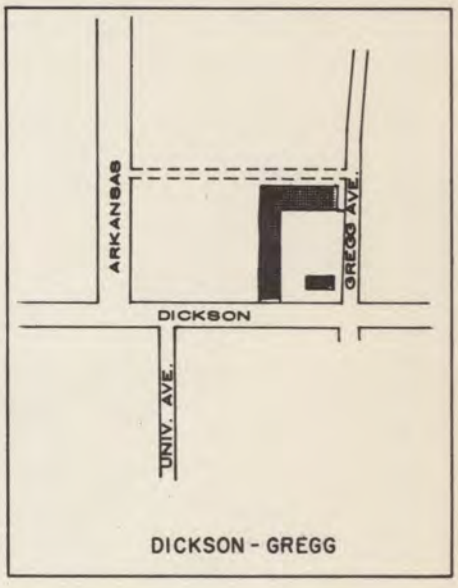

UNIVERSITY OF ARKANSAS
PARKING AREAS

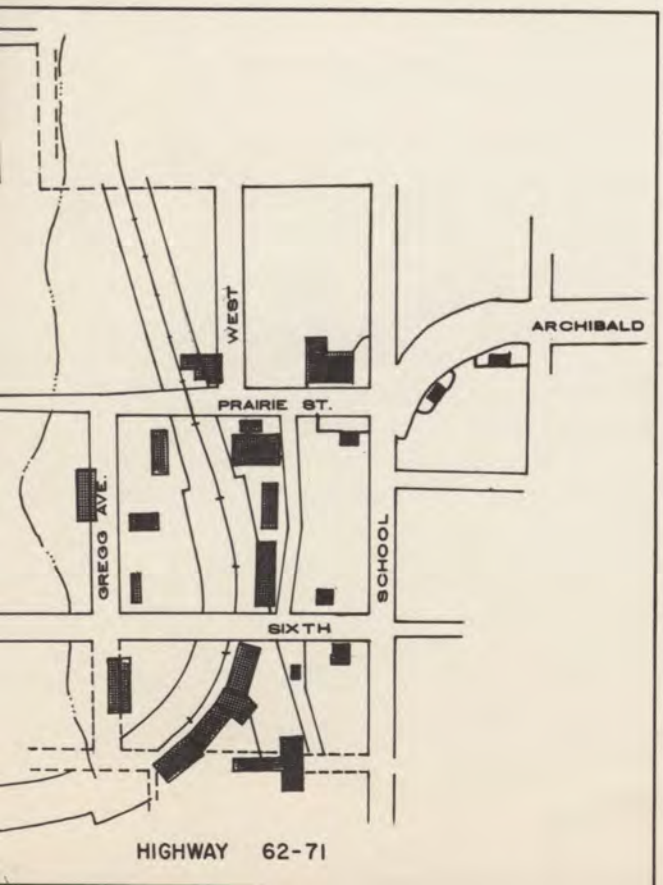

HWY. 16 E.
HWY. 16 BYPASS
RAY AVE.
EASTGATE

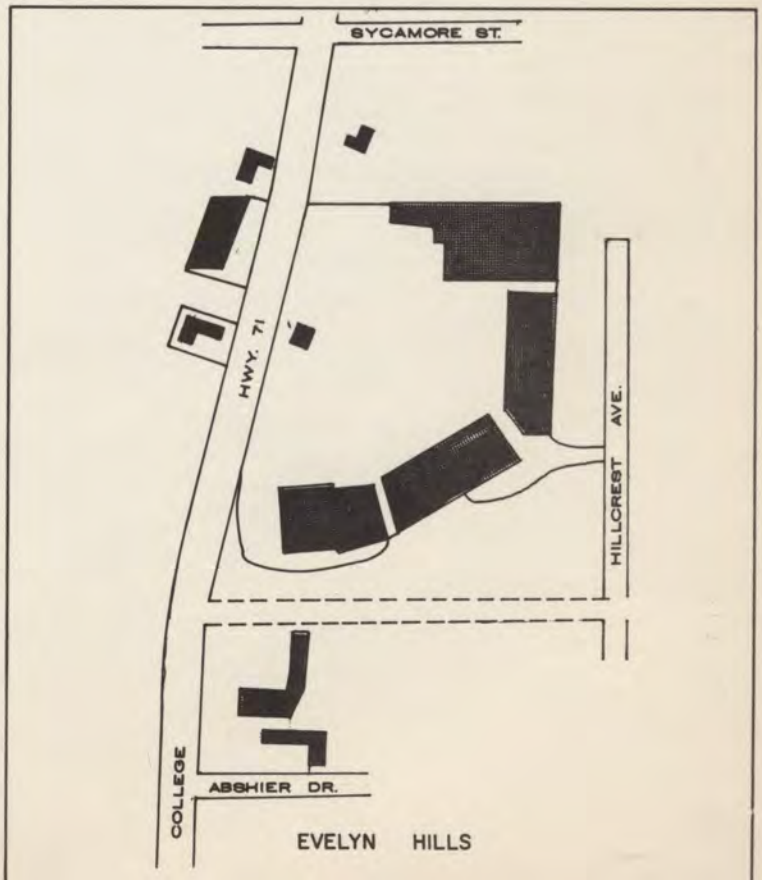

MAPLE
FOREST
HIGHLAND
COLLEGE
LAFAYETTE
LAFAYETTE - COLLEGE


HOLLY
MT. COMFORT RD.
OAK PLAZA


15 ST.
71 SOUTH
SOUTHGATE


ARKANSAS
GREGG AVE.
DICKSON
UNIV. AVE.
DICKSON - GREGG


WEST
ARCHIBALD
PRAIRIE ST.
GREGG AVE.
SCHOOL
SIXTH
HIGHWAY 62-71


SYCAMORE ST.
HWY. 71
HILLCREST AVE.
COLLEGE
ABSHIER DR.
EVELYN HILLS

OFF-STREET PARKING

July 21, 1967

LOT NO.	NUMBER OF METERS ON LOT
1	100
2	36
3	24
4	19
5	36
6	40
7	119
8	16
9	105
10	23
TOTAL METERS	528

Plans for the Future

Fayetteville was selected in 1828 as a site for a county seat. It was incorporated in 1841. For the first 120 years, the City grew slowly and quietly. But by 1950, growth was increasing and by 1960, the City was growing dramatically.

During its history, the City's economy has added to its rural trade center, a University community and an industrial center. The land use pattern first designed for the stagecoach and telegraph was adapted to the railroad and now it must accomodate the automobile and air travel.

These changes, complicated by difficult terrain, have not been made easily. Much of the older City is obsolete and ill kept. Much of the newer City is inconvenient and poorly served.

Purposes of the Plan

The plan reviews and analyzes this past growth pattern and it anticipates the future pattern of growth. It has three general purposes.

First, it suggests actions for stopping decay in the older areas and upgrading them for useful functions.

Second, it anticipates the location, types and amount of new growth that is expected during the next 20 years.

Third, it sets standards to regulate growth and outlines procedures for coordinating public services with private development.

Fayetteville is growing and changing. This report indicates how it is growing and changing. It also suggests alternate patterns for growth and change that might be adopted at this point. The City has several choices that it can make during the next 15 to 20 years.

Presently it is growing in a loose, sprawling, random manner that is wasteful of land and public facilities. In the future it might continue this pattern or it might grow compactly in an expanding circle with a denser type of development. The City might also increase the density of building in the existing neighborhoods and expand in strips along its highways, leaving the hillsides open. Another alternative might mean restricting the expansion of the present city and encouraging the growth of smaller communities near Fayetteville. Each of these patterns has advantages and disadvantages and the plan will probably reflect a combination of them.

The plan is a statement of public policy and this policy is fulfilled by public improvements, development regulations and administrative decisions. An outline of the plan and its uses follows:

The General Plan

Purposes

1. To improve the physical environment
2. To provide space for activities
3. To develop efficient and economic public services
4. Democratic determination of policies for growth and development
5. Political and technical coordination of urban development
6. Long-range policies to direct short-range actions
7. Professional and technical knowledge to aid political decisions

Characteristics

The plan is:

- Primarily physical
- Long-range
- Comprehensive and
- General

The plan:

- Relates proposals to policies
- Forms a document for public debate
- Should be the Board of Director's plan
- Should be amendable

Uses

The plan should be used to:

- Aid policy decisions
- Guide administrative decisions
- Inform the public

Contents

- Background or basic studies
- Assumptions
- Objective
- Summary design
  - Policies
  - Diagram
    - Land Use
    - Circulation
    - Public Facilities and Services
  - Proposals

Summary of the Planning Studies

Population Trends

Fayetteville's population is approximately 30,000 people. One-third are University students, 2400 (8%) are elderly persons over 65 and 640 (2%) are non-white.

The four-county region contains about 144,000 people. Fayetteville has 19.5 % of this population and 45% of the urban population. Washington County has 74,000 people and Fayetteville's share is 37% of the County's population and 65% of its urban population.

Since 1960 Fayetteville has grown 30% (6005). Slightly over half of this growth (3406) was caused by a growth in University enrollment. The other half was caused primarily by annexation (2300) and migration (300). Growth rates between 1960-65 were almost double those between 1950-1960.

Population Forecasts - High Series Estimate

	U of A Enrollment	Fayetteville	Four-County Area
1970	12,960	34,300	155,500
1975	16,075	40,600	169,900
1980	19,190	47,700	186,500
1985	22,300	55,300	206,300
1990	25,000	63,000	226,000

Economic Trends

Fayetteville's share of the four county region

19.5% of the population
74.8% of the non white population
19.0% of the employed persons
22.7% of the 1963 value added by manufacturing
24.5% of the 1963 production workers
29.7% of the 1963 retail sales
19.8% of the retail stores
25.2% of the wholesale sales
32.0% of the selected service receipts
17.2% of the 1960 housing units

Fayetteville's median family income was $4,697 in 1960 and that of Northwest Arkansas was $3,212.

In 1960 Fayetteville's labor force was 7,874 persons. One-half were white collar workers and 1/4 were working in blue collar trades. In the region the proportions were 1/3 white collar and 1/3 blue collar jobs.

The rates of participation in Fayetteville's labor force are somewhat lower than average for males and higher than average for

females. This reflects the fact that many males of working age are University students. Yet many student wives are working.

Employment gained 31% between 1950 and 1960 and this is somewhat faster than population growth of 19% during that period. The largest growth was in manufacturing employment followed closely by governmental employment and retail services. Trade showed a modest growth.

Distribution of Major Employment by Industry
1960

Government	24.4%
Services	23.1%
Trade	19.9%
Manufacturing	14.3%

General Physical Patterns

Fayetteville's hilly terrain determines much of the City's land use and street pattern.

Grades over 15% are not suitable for intensive residential development.

Grades over 5% are not suitable for industrial development.

The existing system of rectangular blocks and straight streets does not conform to the terrain and it causes excessive street grades and discontinuous streets. It also results in pockets of land that are inaccessible except from very steep streets.

The highway system does conform to terrain and it is forced to carry much of the City's local traffic.

Large blocks of land use such as the central business district, the VA hospital grounds and the University of Arkansas campus act as barriers to traffic and must be circled by traffic arteries just as the hills are.

The central business district and the University of Arkansas campus are focal points for traffic and activities and both need room for expansion.

Creeks and watersheds between the hills must be avoided by intensive development. These green strips could be cleaned up to become a system of strip parks and beautification.

Commercial growth has tended to move out along major highways in strips adding to the traffic congestion on these highways.

Residential growth has tended to sprawl out along the traffic arteries without regard for the problem of extending water and sewer service.

Fayetteville rests on the divide between the Illinois River watershed and the White River watershed. The city's sewage treatment plant is in the White River watershed. Future development in the Illinois River watershed will have to have its waste pumped over the divide into the treatment plant on the southeast side.

The University of Arkansas campus tends to pull some growth to the west side of the city but this pull is limited by the Highway 71 bypass.

Many older residential neighborhoods around the central business district and the University of Arkansas are caught between the expansion of these areas and growing traffic congestion. This causes decay and blight.

Of Fayetteville's 11,585 acres 6,721 (58%) are developed, 2050 acres (18%) are unsuitable for development, 1075 acres (9%) have been isolated by poor platting, 1750 acres (15%) are vacant but available.

Of the developed land 55% is in good condition 38% is blighted and 7% should be redeveloped.

ESTIMATE OF LAND NEEDS TO 1985 IN ACRES

Use	Existing Acreage	Area for Growth	Displaced by Public Action	Total Needs	Reclaimed by Clearance or Replatting	New Land Needed
Residential	2,063	2,000	400	2,400	500	1,900
Trade	190	355	100	455	160	275
Services	220					
Industrial	177	172	80	250	50	200
Public and Semi-Public	518	641	70	710	300	410
Agricultural	1,400					
Unsuited for development	2,150	2,000		2,000		2,000
By passed land	1,015				1,000	
Normal vacant	1,650			1,650		650
Streets, railroads and utilities	2,150	2,000	275	2,275	500	1,775
	11,593	7,590	925	9,740	2,510	7,210

Residential Land Use

Findings

Housing Conditions - 1966

Condition	Structures	Acreage
Stable	4,603	1,297.38
Needing Major Repairs	3,183	593.44
Clearance	540	117.28
	8,326	2,008.10

The 1960 Census of Housing showed that 1/2 of the dwellings were occupied by renters and 1/2 by owners. The median value of a house was $11,000 and the median rent was $62.

Family Size - 1960

	Owner-Occupied	Rented
One Person	389	597
Two	1067	1031
Three	701	653
Four	569	438
Five	341	186
Six or more	141	124
Median	2.7	2.4

Of 10,000 students, 13% commute, 54% live on campus, and 35% live in town. 21% are married. 56% live in rooms and 31% live in houses or apartments.

2400 citizens are 65 or older. Over 1700 live in homes that are 30 years old or older.

Residential areas make up almost 40% of the built-up area within the City. About 97% of the housing is low density with less than 4 dwellings per structure. In fact, all but a very small acreage is in single family homes with a density less than 5 families per acre. The remaining 3% is occupied by apartments at 15 to 25 families per acre, dormitories and fraternities at 150 students per acre, mobile home parks at 10 to 15 families per acre and motels.

About 1/2 of the City's housing is renter occupied.

The average family size has dropped from 2.9 to 2.6 since 1960.

About 1500 low and middle income dwelling units are needed to replace those to be cleared.

About 20% of all families could afford to live in better houses than they now occupy.

Vacancy rate is 1.1% for sales housing and 2.7% for rental units. A healthy ratio is 3% to 5%.

University students cause housing prices and demand to fluctuate seasonally.

Fayetteville has 20% of the population, 20% of the employment, and 17% of the housing in Northwest Arkansas. This suggests a shortage of housing in the lower price ranges.

Since 1960 housing has been built in the following proportions

Single Family	67%
2, 3, and 4 Family	8%
Multi-Family	25%

Goals

Adequate housing should be built for all citizens at a price they can afford.

A wider choice of housing types and neighborhoods should be offered to all income groups.

The spread of blight should be stopped and older homes that are sound should be remodelled.

Encourage new types of neighborhoods that use public facilities and terrain more efficiently such as cluster subdivisions surrounded by open space.

The oldest single-family areas around the University and the central business district should be redeveloped into higher density apartments and row houses.

The housing supply should be increased to keep pace with population and to maintain a healthy vacancy rate.

Standards

Community facilities and public services should be related to the density and pattern of each neighborhood.

Urban sprawl should be minimized by development policies.

Existing and proposed residential areas should be protected from encroachment.

Well-defined neighborhoods should be planned and conveniently related to the street system, schools, playgrounds, shopping areas and places of employment.

Low Density

Low density housing areas should be developed for areas with steep terrain that are difficult to sewer.

Medium Density

Medium density housing areas should be developed for families with children that need economical housing in convenient locations.

High Density

High density housing should be developed for people with special housing needs in special locations. This would include students, elderly persons, childless families and individuals.

Recommendations

By 1985, Fayetteville will need nearly 10,000 new dwellings on 2000 acres. Two-thirds should be in single-family homes and duplexes. One-fourth should be in apartments. Group quarters or rooms will be needed for 5200 single persons.

Small student families and elderly persons will create a demand for small apartments.

Two-thirds of the new market should be for sale and one-third for rent.

Price Ranges

For Sale		For Rent	
Under 10,000	460 units	Under $80	100 units
10-15,000	2000 units	80-100	165 units
15-25,000	2666 units	100-150	2045 units
25000 & over	1520 units	150 & over	990 units
	6700		3300

Regulations should be developed for planned neighborhood units, row houses, dormitories and high density apartments. Such regulations should encourage more efficient use of utilities, streets, parking areas, service areas and open space.

Better standards for mobile homes and prefabricated housing should be adopted.

Commercial Land Use

Findings

Fayetteville has 30% of the retail and service activity of Northwest Arkansas while it has 20% of the population.

Its largest sales are in automotive products, followed by food, general merchandise and building materials.

Wholesale and retail trade occupy 190 acres and services occupy 212 acres.

Conditions	Sound	Need Repair	Obsolete	Total
Acreage	170	166	66	402
Structures	167	217	204	588

Fayetteville's trade area extends 30 to 50 miles.

Fayetteville's central business district was designed to serve a much smaller city and trade area.

Most of its commercial growth has been in shopping centers and commercial strips along traffic arteries.

About 8% of the commercial land is downtown, 10% is in shopping centers, and the remainder is mixed in commercial strips or scattered without regard for functional grouping.

Many businesses are blighted by traffic congestion and the lack of parking and loading space.

Trade and services provide Fayetteville with its largest source of retail employment.

Professional offices are scattered along highways instead of being grouped in centers.

Auto related businesses are scattered instead of being grouped.

Wholesaling, trucking, construction businesses and other heavy services are widely scattered.

Goals

To develop the central business district into a regional center with good access, room for expansion, parking space, pedestrian facilities and a variety of commercial activities as well as economic, social, cultural and governmental services.

A balanced system of shopping centers to serve all residential areas.

Space near major traffic arteries for auto related business centers.

Space for heavy services and truck related businesses grouped near major truck routes.

Rehabilitation of older commercial strips into viable shopping areas.

Visual improvement of commercial areas with sign control, underground utilities, landscaping, remodelling and pedestrian facilities.

Standards

Central Business District

This regional center should be planned to serve 150,000 to 200,000 people eventually.

Additional traffic arteries should connect it with all parts of the trade area.

It should be diversified to include a retail center, parking areas, an office center, a convention and entertainment center, a governmental office complex, a medical center, a park and high density housing.

Approximately 100 acres will be needed by 1985.

Shopping Centers

Small shopping centers should be spaced at approximately one mile intervals near major traffic arteries to serve surrounding residential neighborhoods of 3,000 to 5,000 people. They should protect the character with nearby residences.

About 30 additional acres will be needed by 1985.

Highway Service Centers

Centers of auto related businesses should be located near the intersections of major traffic arteries to serve automobile traffic. Highway safety, roadside beauty and the insulation of adjoining uses should be maintained.

Approximately 100 acres will be needed by 1985.

Heavy Service Centers

Space for grouping warehouses, truck firms, construction businesses, wholesalers, repair services and other activity related to trucking and major storage facilities

should be developed near major truck routes, but buffered from residential and commercial areas.

About 45 acres will be needed during the next 15 years.

Recommendations

The central business district should be renewed and expanded into a regional business center.

Neighborhood shopping centers should be located tentatively to serve expected residential growth.

Highway business centers should be located tentatively to serve future volumes.

Heavy service centers should be located near major truck routes and the railroad to remove these businesses from the mixed areas along the highways.

Additional office space should be provided in the central business district and in the various shopping centers.

Older commercial strips should be renewed by providing access and parking on the rear and reversing fronts and entrances to the rear.

Industrial Land Use

Findings

There are 49 industrial plants occupying 178 acres of land. Over 4000 persons are employed in these industries and 38% of them commute more than 10 miles to their jobs.

Industries producing durable goods such as metal products occupy 94 acres and employ 1279 persons. Those producing non-durable goods such as food, textiles and wood products occupy 84 acres and employ 2520 persons.

The older industries are generally small, poorly located and in poor condition. Nine industries occupying 122 acres are sound, six plants on 7.4 acres need major repair and 34 plants on 48 acres should be rebuilt.

Industrial employment makes up nearly 1/3 of the total employment in the City.

Fayetteville has 25% of the production workers in the four county region and the City's plants produce 23% of the value added by manufacturing.

Manufacturing has been the fastest growing source of employment since 1960.

Fayetteville's 178 acres of industry are scattered over 1000 acres. This makes it difficult to serve them with streets, utilities and to protect them from encroachment and it is a wasteful use of scarce land.

Fayetteville is not located near major sources of raw material and it does not have good connections to major ports, railroads or interstate highways.

The City is in the center of fairly large labor supply.

The research services of the University of Arkansas are attractive and available to area industries.

About 200 acres of industrial land will be needed before 1985 to maintain the growth of industrial employment at present levels.

Goals

Fayetteville's industries should have room to grow and expand.

They should be consolidated into an area that can be served with streets and utilities efficiently and economically.

They should be protected from encroachment.

Older, blighted industries should be upgraded or cleared and moved to more suitable locations.

A variety of site types should be provided to attract desirable industries.

A diversified industrial base should be provided to attract a vigorous work force to the area.

Minimum standards of design for industrial subdivisions should be adopted.

Standards

Industrial land should be level averaging no more than 5% slope.

Sites should be large enough to allow modern one-story buildings, storage, parking, loading and landscaping. Generally, this means 2 to 5 acres for intensive industry and 5 to 100 acres for extensive industry.

Land and Floor Space Norms

Ratio of land to floor space	7 to one
Employees per acre	20 to 25
Floor space per employee	260 to 300

Access to major truck routes, airports, railroads, and thoroughfares connected to housing areas are essential.

Sites requiring major water and sewer lines must be on the south and east sides of the City where utilities are available.

Yards should be large enough to protect industries from each other.

Auxilliary services such as restaurants, service stations, repair garages, motels, business services, and branch banks should be convenient to the industrial plants.

Industries should be buffered or separated from incompatible uses.

Recommendations

Two industrial areas should be reserved. One on the south-east side of the City where railroads, truck routes and utilities are convenient. This area can be buffered from surrounding undeveloped areas by hills and streams, although some flood control is needed to reclaim part of the land. Another site should be developed on the Highway #71 bypass north of the City for those light industries that do not

require large water supply or waste disposal but do value highway locations for advertising purposes.

These sites should be designed as industrial parks incorporating proper design standards and adequate services. It should be possible to expand these sites if projected growth is exceeded.

Heavy industries requiring the processing of raw materials should be discouraged. The poor connections to ports, rail centers, major highways and sources of raw materials makes Fayetteville a poor location for such industry. Furthermore, such industries usually require heavy use of water and waste disposal and they create nuisances for nearby residential, scenic and recreational areas.

The research and training services should be developed in order to attract the more sophisticated types of industry.

Findings

The state highways within the Fayetteville planning area follow the gentle terrain of the stream valleys, they are continuous, they are maintained in good condition and they carry more traffic than the city streets.

Most of the state highways in the city carry more traffic than they were designed to carry.

The primary movement of traffic in Fayetteville is north and south. The secondary movement is east and west.

The city street system is generally rectangular, it is in conflict with the steep terrain, and it is in poor condition. The continuity of city streets is broken by hills, the railroad, and large blocks of land use such as the central business district and the University of Arkansas campus. As a result most local traffic use the state highways rather than city streets to move across town.

Only 27% of the city street system is in good condition, 34% needs major repair and 38% needs rebuilding.

It is estimated that expenditures for streets must be doubled to $1,000,000 per year during the next 20 years to bring the streets up to standard. Six million dollars in street improvements are needed now.

Approximately 40% of the city's developed land (2150 acres) is devoted to streets, railroads and utilities.

Commercial development is concentrated along Highway 71 the city's most heavily travelled artery. Commercial traffic conflicts with the through traffic moving north and south along this highway.

Several other major traffic streets are loaded beyond their design capacity.

East and west traffic movements on the north side of the city are difficult and north and south movements near the University campus are also difficult.

The most difficult traffic movements are the diagonal flows across the center of the city between northeast and southwest and between northwest and southeast.

Traffic congestion is growing rapidly. Vehicle registrations increased 40% between 1962 and 1967. Traffic volumes at selected points on state highways increased about 33% between 1964 and 1967. During this same period accidents on city streets went from 887 to 1195.

Local and regional freight is being carried by truck and long distance freight is being carried by rail.

Goals

Additional traffic routes must be developed to separate conflicting types of traffic. Routes are needed for through traffic, shoppers, trucks, school traffic, and employees going to work.

Where possible existing streets must be surfaced, widened or extended to provide additional collector streets or arterial streets.

Direct radial streets must be developed between local traffic generators. Loop streets that by pass congested areas must be provided for through or cross town traffic.

Through traffic within neighborhoods or shopping areas or industrial areas should be discouraged.

Parallel routes should be developed to relieve overloaded streets.

Street improvements should be planned according to land use and purpose with some streets planned to provide access to property and some to move traffic.

A well-balanced system of streets must be developed with collector streets and arterial streets spaced closely enough to carry the traffic generated by surrounding land uses.

Standards

Minor streets should be designed to provide access to abutting property.

Collector streets should be designed to collect traffic from minor streets and carry it to arterial streets or to nearby destinations. They should be spaced from 1/4 to 1/2 mile apart where it is possible.

Arterial streets should be planned to carry traffic across the city between highways or major traffic generators. They should be spaced at about one mile intervals.

Expressways and freeways should be planned for special by-pass traffic at higher speeds. They should be spaced at about 3 miles in built-up areas. Traffic generators along these routes should be served by frontage roads.

Right-of-way widths for each type of street should be adequate for the design speed, lighting, safe intersection design, surface water drainage, and traffic volumes.

Access should be controlled except on minor streets.

Grades and curves should be consistent with design speeds for each street.

On-street parking should be prohibited on collector streets and arterial streets.

Recommendations

Short Range

Traffic loops should be developed around the University campus, the central business district and the industrial area on the south side of the city.

Parking should be removed from collector and arterial streets to improve capacity.

An improvement program should be adopted for the existing streets that need major repairs and rebuilding. The program should include better lighting, better drainage, pedestrian sidewalks and crossings, larger traffic capacity, aesthetic improvements, and improved intersection design.

An east-west connection should be developed between Hunstville Road and Highway 62 West.

An additional connection should be developed between the central business district and the University of Arkansas campus by extending South Street across the railroad.

An additional east-west artery on the north side of the city should be developed along Cleveland and Prospect extended to cross the Highway 71 by-pass.

Another north-south route near the University of Arkansas campus should be developed along West and Gregg Streets.

Better routes are needed between Wedington Road and Huntsville Road and between Mission and Highway 62 West.

Highway 45 should be extended south along Fletcher into Highway 16.

North Street should be extended into Wedington Road.

Design standards should be adopted for new streets and for street improvements.

A study of traffic operations should be made to develop improvements to present traffic flows.

Long Range

Traffic loops should be developed to connect outlying residential neighborhoods.

City routes parallel to overloaded state highways in the city should be developed.

A major connection is needed between the city and the proposed regional airport location.

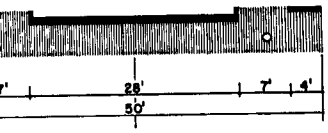
Highway 265 should be widened to four lanes and extended north along Highway 383 and Old Wire Road to Rogers.

A major expressway should be built through the center of the City parallel to the Frisco Railroad track.

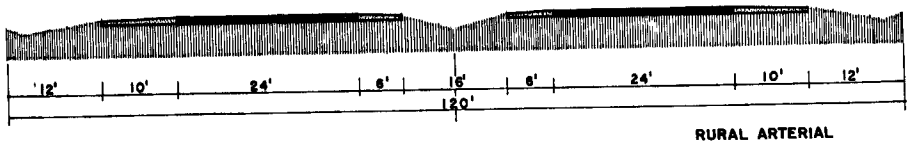
An additional east-west route should be built across the south side of the City by extending Cato Springs Road east into Pump Station Road.

Willoughby Road should be improved and extended east and north to connect with Highway 265.

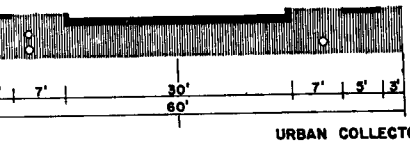
East-west arteries should be developed along Sycamore Street, Township Road. Another should connect Appleby Road, Rolling Hills and extend eastward.



URBAN MINOR



RURAL ARTERIAL



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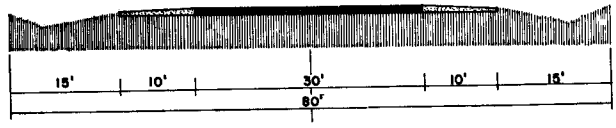

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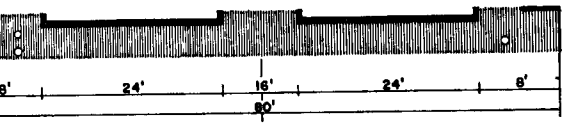

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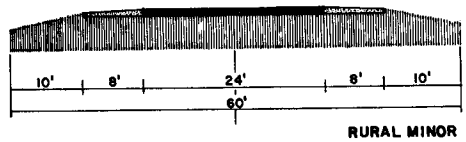

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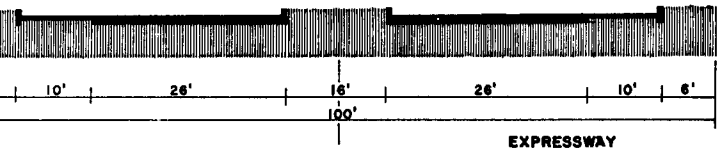
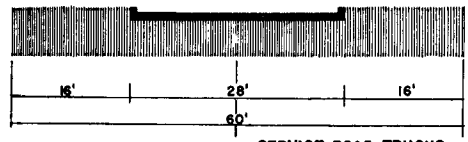
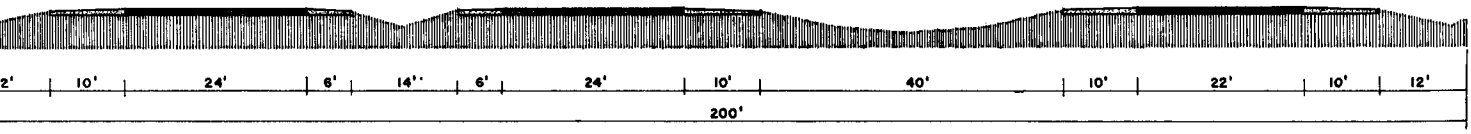


EXPRESSWAY



SERVICE ROAD TRUCKS



FREEWAY WITH SERVICE ROAD

STREET STANDARDS

JOHNSON

GENERAL PLAN

RESIDENTIAL
- low density
- medium density
- high density

COMMERCIAL
- shopper goods
- auto related
- truck related
- services

STREETS
- expressway
- arterial
- collector

- INDUSTRIAL
- PUBLIC & WATER
- OPEN SPACE
- UNDEVELOPED AND AGRICULTURE

COMMUNITY FACILITIES

Many things go into the makeup of a community. Homes, commercial services and jobs are the most obvious. But nothing reflects the attitude of a community like its public services. The schools, the public buildings, the streets, the parks and other facilities show the community's willingness to provide the services which individuals cannot provide for themselves. These things indicate the quality of the city's government and the standard of living in the community.

Community services influence private development and its upkeep. Often the condition of streets, lighting, drainage, playgrounds and schools affect the quality of a neighborhood as much as the condition of homes and shops. These things can complete the work areas, the living areas and play areas in the community making it attractive and convenient. They set a standard for development that is carried over into private construction.

Fayetteville, like most Arkansas cities, has never had the money to provide all the services that it needs. This is the result of constitutional limits on municipal revenues and a lack of private wealth. The City has been forced to spend its funds on those services that were most critical and on those services which could be financed by outside revenue.

Fayetteville is obligated to provide some community facilities that are not typical. The City is the county seat, and it has the county offices, courts and jail. It has been designated as the seat of a federal district, and a federal building with courtrooms will be built. A Veteran's Administration Hospital serving several states is located here. The University of Arkansas with an enrollment of over 11,000 students is in Fayetteville. Each of these agencies requires space and municipal services.

Fayetteville is one of five major communities and 25 smaller communities that form two urban strips stretching across two counties. As the largest of the communities in the area, Fayetteville has become the center for many regional activities including commerce, government, culture, education and recreation. This means that the City provides urban services for many visitors as well as for its residents.

Within the next 20 years the City, the University and the two county region are expected to double in population. This will require an expansion and upgrading of urban services. If Fayetteville expects to maintain its position as a regional center, it must compete with these local communities and with Tulsa, Joplin, Springfield, and Fort Smith as well.

Public Buildings

There are 35 major governmental agencies housed in the City. Thirteen of the agencies are federal, 6 are state, 6 are county and 9 are City. Each of these has been contacted for information about existing space, present needs and future needs. Space requirements vary widely from agency to agency, and these were considered separately for each agency.

Federal Building

U. S. Federal Courthouse and Office Building. A proposal has been approved by General Services Administration for the construction of a federal building to provide space for the U. S. Courts and other federal agencies. This project will permit consolidation of federal activities and thereby increase the efficiency of agency operations and reduce annual government rental expenditures.

Acquisition of a downtown site of 2 acres near county and city offices is recommended to promote more efficient inter-government working and to provide greater convenience to the public.

County Services

County Courthouse, Office Building and Jail. The existing building is too small and obsolete. Presently county offices occupy 24,500 square feet; space needs are estimated at 42,000 square feet. The location of the new structure should remain in the downtown area because it offers the advantages of (1) greater access from all parts of the County, (2) convenient location for agencies that regularly do business with the courthouse, (3) parking in public lots, and (4) helping the City to create a more attractive and efficient downtown business center.

The present jail is in such poor condition that county prisoners are often lodged in the city jail. There are no separate facilities for juveniles.

The present site covers one acre. A site of 3 acres is required for the new building with the possibility of acquiring an additional 2 acres for later expansion.

County Highway Shops. The County highway shops are located on 10 acres at Gregg Street and Township Road. The space is quite adequate, but the main building is obsolete and should be replaced.

County Health Department and Hospital. The present county hospital is considered adequate. Within the next 20 years the hospital should be doubled to about 540 beds.

The county health department needs to double its staff of sanitarians and public health nurses. This will require additional office space, record space and parking.

Juvenile Detention. There are no facilities for the lodging of juveniles other than the county jail. This is unsatisfactory for juvenile prisoners and even less suitable for juveniles who are not under arrest.

Economic Opportunity Agency and Welfare Office. The EOA is presently in temporary quarters and the Welfare Department is in the County Courthouse. Both should have new quarters in a centrally located building.

Municipal Services

City Administration Building. The present administration building is too small to house the existing municipal government departments much less those that will be necessary in the near future to provide the services for a city the size of Fayetteville.

It is recommended that a site of 3 acres be acquired in the downtown area to provide the

necessary parking, open space and future expansion needs. The downtown site would allow close relationship with the existing police and courts building and proposed county and federal office buildings plus greater convenience to the many offices and businesses located in the downtown area.

Water and Sewer Department. The water and sewer departments have adequate space for building at the Operations Center and at the new sewer plant.

City Shops. The city street and the sanitation departments have adequate shops, storage and garages in the industrial area just off Highway 16 on Happy Hollow Road.

City Hospital. The city hospital has two new geriatrics wings but the center wing which houses the general hospital beds and emergency facilities is obsolete and should be replaced.

Fire and Police Protection. The police and courts building is quite adequate but it may have to be expanded within the next 20 years.

Fire stations are adequate but two new stations will be needed within the next 20 years to serve development on the east and west sides of the City.

Airport. The airport terminal building will be adequate for some time if airline operations are moved to a regional airport. Otherwise, freight handling facilities must be added. Hangars and maintenance shops are obsolete and must be replaced. Taxiways and parking aprons must be expanded.

Regional Facilities

Library. The library building serves as the City Library and the Ozarks Regional Library headquarters which administers 10 branch libraries in three counties. With an addition that is being planned this building should be adequate for 10 years. Before the next expansion the possibility of branch libraries within the city should be considered.

Regional Community Service Center. The idea for the Arkansas Services Center began in 1963 with the initiation of plans for Community Mental Health Centers in Jonesboro, Monticello, Magnolia and Fayetteville.

This facility has now developed into the concept of providing a comprehensive public service center. Such a center not only serves the needs of the agencies but also offers unlimited possibilities for cooperation and communication between the various agencies.

Such a center in Fayetteville could include space for:

Rehabilitation Service
Vocational Training Shops
In-Patient Rehabilitation Program

State Hospital
Community Mental Health Center

Welfare Department
Multi-County Regional Center

State Health Department
Diagnostic and Treatment Center

University of Arkansas
Training and Instructional Purposes

Professional personnel can be more effective through referral service by the various agencies; combined diagnostic facilities would provide more thorough and complete evaluations. This facility will require at least 40 acres convenient to the University campus and the City of Fayetteville.

Higher Education Facilities. The University of Arkansas furnishes higher education service to the entire state, and Fayetteville and Northwest Arkansas receive some additional benefit because the University is in the region. The University has a plan for campus development through 1975. This plan is designed to fulfill the University's statewide responsibilities.

There are three types of facilities that would benefit

the University's program and the Northwest Arkansas region: a continuing education program; advanced vocational and technical training; cultural facilities such as a new civic auditorium. These items are included in the City program since it is possible that they will require state and local funds.

Convention Center. After consideration of the advantages that Fayetteville has to offer by way of its influence as the fastest growing regional center in the State, site of the State's major University and its excellent location in the center of a rapidly expanding recreation and leisure activities industry, it is recommended that a civic center for Fayetteville include such facilities as an auditorium, exhibition hall, small assembly room and a number of meeting rooms. This center could not only be a great cultural and educational asset for Fayetteville citizens, but would also undoubtedly draw a variety of outside attractions from pageants and conventions to industrial exhibitions.

A site of approximately 10 acres would be needed and a location between the central business area and the University campus, near motels, restaurants and entertainment would allow use by both the city and the university.

Continuing Education Center. The problem of training new personnel and the additional training of existing personnel is a continuing one for most companies and government agencies. More leisure time for many people is creating a demand for cultural, recreational and educational activities for adults. The facilities and personnel of the University of Arkansas make Fayetteville a logical place for establishing a continuing education center. This facility could be built in conjunction with the convention center to achieve an economic use of meeting space, exhibition space, parking, motel rooms and restaurants.

EXISTING COMMUNITY FACILITIES

CITY

COUNTY

UNIVERSITY

SHOPPING

PUBLIC HOUSING

V.A. HOSPITAL

JOHNSON

FIRE STATION NO. 4

FIRE STATION NO. 2

POST OFFICE

CITY LIBRARY

PUBLIC HOUSING

CITY HOSPITAL

FIRE STATION NO. 3

SHOPPING CENTER

FIRE STATION

FAIR GROUNDS

UNIVERSITY

COUNTY SHOP

PUMP STATION

ARMY RESERVE

VETERANS HOSPITAL COUNTY HOSPITAL

WATER TOWER

POST OFFICE

LIBRARY

PUBLIC HOUSING

FEDERAL OFFICES

CITY HALL

COURT HOUSE

WATER STORAGE

NAVAL RESERVE

OPERATIONS CENTER

CITY SHOP ANIMAL SHELTER INCINERATOR

AIRPORT

SEWAGE TREATMENT PLANT

U.S. VETERANS HOSPITAL, COUNTY GENERAL HOSPITAL, PARK

CENTRAL BUSINESS DISTRICT

		Existing				Proposed			
Em-ployees	Agency	Floor Space	Parking	Location	Condition	Total Floor Space	Total Parking	Location	Remarks
29	City Administration Offices	4,400	4	W. Mountain	Poor	20,000	140	W. Rock	Construction of new facility at downtown location to provide convenient access and relationship to other facilities.
15	City Police and Courts	9,300	28	140 W. Rock	Excellent		50		Additional 22 parking spaces.
75	City Hospital	36,600	60	221 S. School	Good	42,200	100	S. School	Addition of 5600 sq. ft. to provide 20 additional beds in general treatment to meet demands and modernization of 60 existing general treatment beds.
	Municipal Airport	31,400	125	Hwy 71 S					Need hangar space and new maintenance shops.
	Municipal Library	11,700	25	217 E. Dickson		19,000	50	E. Dickson	Addition of 7500 sq. ft. to meet growth demands.
6	Fire Department #1	6,600	21	303 W. Center	Good				Adequate
4	#2	4,000		Garland	Good				Adequate
4	#3	2,000		Hwy 71 S	Good				Adequate
4	#4	2,000		Hwy 71 N	Good				Adequate
	#5					4,000	6	W. 15th	New facility to serve new growth demands.
	#6					4,000	6	E. 15th	New facility to serve new growth demands.
	Municipal Auditorium					100,000	750		3000 seat facility capable of housing concerts, lectures, & theater productions. For joint use by the City and the University.
	Convention Center						250		
	(a) Exhibition					25,000			Accommodation for trade shows and other convention exhibits.
	(b) Assembly Hall					20,000			Provide meeting rooms for various size groups for use by conventions and civic organizations.
	Water and Sewer Department								
	(a) Pollution Control			Fox Hunter Rd.					
	(b) Service Center			Cato Sprgs. Rd.					
	City Shops and Pound	11,000		Happy Hollow Rd.					
101	Washington Co. Courthouse	19,950	50	S. College	Poor	42,000	280	S. College	Construction of a new facility at downtown site to accommodate space needs and relationships to other facilities.
8	Washington Co. Jail	4,500		S. College	Poor				Incorporated with new courthouse facility.
14	Washington Co. Health Dept.	4,500	15	34 W. North	Good	6,000	25	34 W. North	Expansion of 1500 sq. ft. to accommodate population growth.
	Washington Co. Highway Dept	6,400		N. Gregg St.	Good	9,000		N. Gregg St.	Expansion of 2500 sq. ft. to accommodate increasing future work load.
	Washington Co. General Hosp.	55,000		20 W. North	Good	160,000	520	20 W. North	Expansion of 105,000 sq. ft. to accommodate an additional 350 new beds which will approach an optimum size for cost - benefit ratio.
15	Economic Opportunity Agency	4,500	10	226 N. College	Poor				Bad location
	(a) Administration					2,000	20		
	(b) Neighborhood Center					8,000	25	S. Church	Construction of separate new facilities Centrally located in target area

PUBLIC BUILDINGS
INVENTORY AND FUTURE PROGRAM
FAYETTEVILLE, ARKANSAS
(CONT)

Em-ployees	Agency	Existing Floor Space	Existing Parking	Existing Location	Existing Condition	Proposed Remarks	Proposed Total Floor Space	Proposed Total Parking	Proposed Location	Proposed Remarks
	Arkansas National Guard	7,500	50	Hwy 71 S	Excellent	Adequate facility				
	Employment Security Division	5,000	12	218 N. Church	Good	Adequate facility				
1	State Highway Department	500		City Adm. Bldg.	Poor	Office space required				Recommended leasing of adequate office space in private or public building.
3	State Forestry Commission	1,500		Hwy 112 N	Good	Adequate				
	Community Service Center						60,000	175		
	(a) University of Arkansas						5,000			
	(b) Mental Health Center						28,000		E. 15th	Proposed regional complex to pull together public health service agencies.
	(c) Vocational Rehabilitation	1,400		455 E. Township	Fair	Leased bldg.	12,000			
	(d) Diagnostic & Treatment						10,000			
	(e) Welfare Department						5,000			
	State Continuing Education						20,000	250	University of Ark.	Proposed adult education center to handle short courses, conferences and workshops.
	Federal Office Building	4,900		Cen. Square			36,000	50	N. College	Construction of a new facility in the downtown area to provide space for U. S. Courts and other federal agencies. A new facility will permit consolidation of federal activities thereby increasing efficiency, offer greater convenience, and result in an annual rental savings.
	(a) Agriculture	4,485				Govt. owned obsolete				
	(b) Defense	2,763				Leased				
	(c) Health, Ed., & Welfare	3,713				Leased				
	(d) Interior	7,455				Leased				
	(e) Justice	438				Leased				
	(f) Labor	266				Leased				
	(g) Selective Service System	567				Leased				
	(h) Treasury	1,183				Leased				
64	Post Office	16,924	15	12 W. Dickson	Good	Long-term lease	42,224	104	12 W. Dickson	Addition of 25,300 sq. ft. to meet demand of anticipated growth.
6	Leroy Pond Army Reserve	13,500	60	1616 Woolsey	Excellent	Adequate				
	Naval Reserve	2,800	15	S. Church	Excellent	Adequate				
206	Veterans Hospital	173,200	285	1100 N. College	Good	254 beds; No expansion anticipated				

Recreation

Fayetteville, like most Arkansas cities, has deferred recreational programs in favor of more critical needs for water, sewers, streets and protective services. Schools, churches and other agencies have found it necessary to provide their own recreation space and equipment. As a result recreation is available for school age children and for those who can afford commercial recreation. There are few leisure opportunities for pre-school age children young adults and elderly people, especially in low-income neighborhoods where transportation is limited.

Recently-enacted federal aids are making it possible for communities to buy and improve parks and playgrounds with a combination of federal and local funds. With these aids Fayetteville can begin to develop a balanced recreation program for all its citizens.

The factors that shape recreation programs are changing, and the demands for recreation are changing with them. Some of the most important are:

- Growth in population
- Higher family incomes
- More leisure time
- Higher levels of education
- Increased emphasis on health and fitness
- Changes in family size
- More elderly people
- A growing population of University students
- Alienation of youth from family activities.

Fayetteville is growing into a complex community, and its people are beginning to anticipate more varied recreation programs.

Principles and Goals and Assumptions

Plan recreation opportunities for all ages and economic levels.

Provide a wide range of recreation activities to appeal to many interests and education levels.

Distribute parks and play areas within easy reach of all areas of the city.

Develop city facilities near school locations for

use of school children and encourage use of school property by all citizens.

Use areas along streams, bluffs, railroads and freeways for beautification, connectors between play areas and residential areas, buffers between neighborhoods, and for hiking trails.

Plan for population to double within twenty years.

Expect major residential growth to the northeast of the city.

Types of Recreation Space

A balanced recreation program requires a variety of spaces. The major types are described below.

Regional Recreation. Beaver Lake, Devil's Den State Park, Pea Ridge National Park, White River, Lake Wedington and the Ozark National Forest provide nearby reservations for water sports, hunting, camping, nature study and picnicking.

Community Parks. Although they are undeveloped, space is available at Lake Fayetteville, Lake Sequoyah, Lake Wilson, along the White River and at the new sewer plant to provide several types of community recreation requiring large areas, such as camping, boating, botanical gardens, museums, shooting ranges, riding, hiking and major athletic centers. The County Fairgrounds provide special facilities for riding, animal shows and large exhibits.

Community Playfields. Athletic fields for children and young adults are located at Harmon Playfield (Senior High), City Park, Walker Park and Woodland Junior High. Others are planned at Ramay Junior High and at a proposed senior high school site.

Neighborhood Parks. Parks are needed for family activities in all residential neighborhoods. City Park, Walker Park, undeveloped sites north of the V. A. Hospital and in the industrial area in the southwest part of the City would serve this purpose. Five additional neighborhood parks have been proposed to cover neighborhoods not served

by these parks. Community buildings have been proposed in four parks for indoor activities.

Neighborhood Playgrounds. All elementary school sites have playgrounds and most have auditoriums for indoor use. It is recommended that these facilities be made available to neighborhood children when school is not in session.

Special Parks. Special parks are needed in business districts, in housing projects and apartment complexes for pre-school children, elderly persons and shoppers. None of these are shown on the plan since they are quite small, and the location depends on the design of the project.

Open Space. Strip parks are shown as parkways, creekways and expressways for beautification and use as buffers and walking areas.

PARKS AND RECREATION

	Existing Acreage	Proposed Acreage	Total Acreage	Area Served	Existing Facilities
Lake Fayetteville	643	---	643	Regional	Boat Dock 1200 sq.ft., Parking
Lake Sequoyah	1500	---	1500	Regional	Boat Dock 800 sq.ft., Parking
Lake Wilson	320	---	320	Regional	
Water Treatment Plant	558	---	558	Regional	
Walker Park	17.68	15.4	33	Neighborhood	
Wilson (City) Park	21.65	---	21.65	Neighborhood	Bath House 3100 sq.ft., Swimming Pool
Hospital Park (V. A. Hospital)	19.5	---	19.5	Neighborhood	
Pierce Park (South Industrial)	6.20	4.0	10.20	Neighborhood	
National Cemetery	8.26	---	8.26	Regional	
Confederate Cemetery	3.92	4.0	8.32	Regional	
Walker Cemetery	0.4				
County Fairgrounds	60.0	---	60.0	Community	Rodeo Stadium - Exhibit Space - Animal Show Bldgs.
U of A Agri Park	7.0	---	7.0	University	Shelter
Community Parks					
#1	---	30	30	Community	
#2	---	60	60	Community	
#3	---	30	30	Community	
#4	---	30	30	Community	
#5	---	30	30	Community	
Fayetteville Youth Center				Community	Indoor Swimming Pool - Gym - Game Rooms
Park (CBD)		15	15	Community	
Parkway Park		15	15	Community	

Parkway - 6 miles
Expressway - 8.4 miles
Creekways - 18 miles

PLAYFIELDS AND PLAYGROUNDS ASSOCIATED WITH SCHOOLS

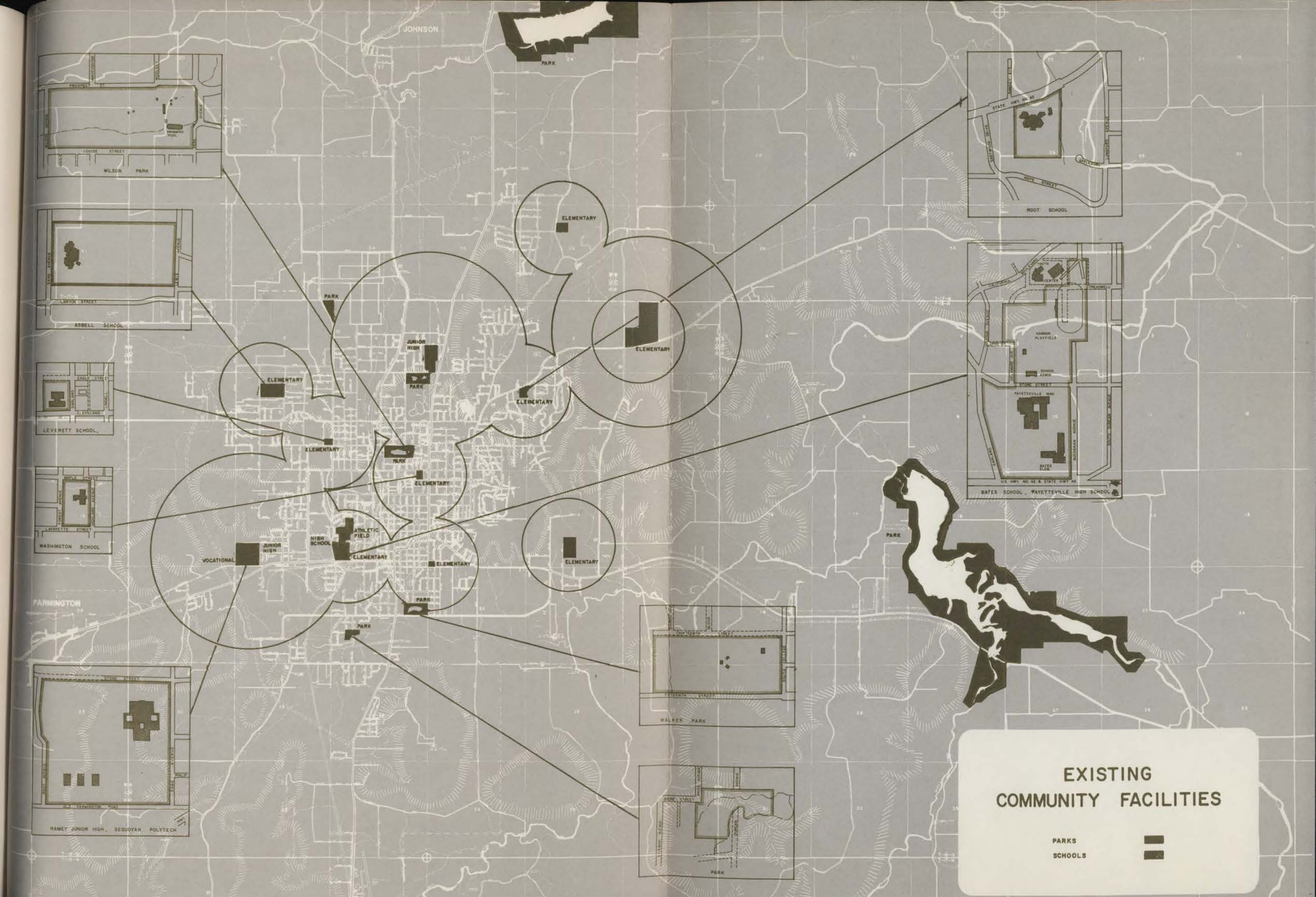
	Existing Acreage	Proposed Acreage	Total Acreage	Area Served	Indoor Space
Elementary Schools					
Asbell	10	--	10	Neighborhood	Auditorium - Health Room
Bates	5	--	5	Neighborhood	Auditorium - Health Room
Leverett	1-1/2	--	--	Neighborhood	Cafeteria
Jefferson	3	5	8	Neighborhood	Auditorium - Health Room
Butterfield Trail	8	--	8	Neighborhood	Auditorium - Health Room
Root	4	--	4	Neighborhood	Auditorium - Health Room
Washington	1-1/2	--	1-1/2	Neighborhood	Auditorium
Proposed					
#1 Hwy 16E	8	--	8	Neighborhood	
#2 Poplar	--	--	6	Neighborhood	
#3 Hwy 45E	5	--	5	Neighborhood	
#4 Cato Springs	--	--	6	Neighborhood	
#5 Appleby Rd	--	--	6	Neighborhood	
Junior High Schools					
Ramay	10	--	10	Community	Auditorium - Gym - Health Room - Shops - Music
Woodland	10	--	10	Community	Auditorium - Gym - Health Room - Shops - Music
Proposed Hwy 45E	10	--	20	Community	
Senior High Schools					
Fayetteville High	10	--	10	Community	Auditorium - Gym - Health Room - Shops - Music - Theater
Sequoyah Polytech	5	--	5	Community	Shops
Proposed Hwy 45E	15	--	15	Community	

INDEX	SCHOOL	ACREAGE			ENROLLMENT	CAPACITY			CLASSROOMS			REMARKS
		E	A	P	1967-68	E	A	P	E	A	P	
Elementary Schools												
1.	Asbell Elem	20	--	20	403	475	100	575	19	4	23	Improvement limited to existing buildings
2.	Bates Elem	10	--	10	549	570	--	570	23	--	23	Increase parking
3.	Leverett	3	--	--	306	300	--	---	12	--	--	Disposal of facility because of site limitations and poor geographical location
4.	Jefferson	6	6	12	470	450	--	450	18	--	18	Purchase of 6 additional acres and phased construction
5.	Butterfield Trail	14	--	14	270	300	250	550	12	10	22	Addition of 10 new classrooms
6.	Root	7	--	7	462	450	--	450	18	--	18	Improvement limited to existing buildings
7.	Washington	3	--	3	319	300	--	300	12	--	12	Improvement limited to existing buildings
8.	Proposed #1 Hwy 16E	15	--	15	---	---	--	400	--	--	16	New construction
9.	Proposed #2 Poplar	--	--	12	---	---	--	500	--	--	20	New construction and purchase of site
10.	Proposed #3 Hwy 45E	10	--	10	---	---	--	500	--	--	20	New construction
11.	Proposed #4 Cato Springs Rd	--	--	12	---	---	--	---	--	--	--	Purchase of site for future construction
12.	Proposed #5 Appleby Rd	--	--	12	---	---	--	---	--	--	--	Purchase of site for future construction
Middle Schools												
13.	Ramay	20	--	20	662	700	50	750	28	--	28	Change to middle school. Construction of athletic field, bus garage, and warehouse
14.	Woodland	19	--	19	600	700	50	750	24	4	28	Change to middle school and addition of 4 classrooms
15.	Proposed #1 M Hwy 45E	20	--	20	---	---	--	750	--	--	28	New construction of middle school for grades 6-8
16.	Proposed #2 SE	--	--	20	---	---	--	750	--	--	28	New construction and purchase of site
High Schools												
17.	Sequoyah Polytech	20	--	20	228	270	330	600	14	--	--	New construction for classrooms, shops and labs
18.	Fayetteville HS	20	--	20	1090	1000	---	1000	39	--	39	Establish grades 9-12
19.	Proposed #1 HS Hwy 45E	30	--	30	---	---	---	1200	--	--	60	New construction of high school for grades 9-12

E - Existing
A - Addition
P - Proposed

STANDARDS

	Acreage	Capacity	Service Area	No of Classrooms	No Pupils/Room
Elementary	5 + 1/100 pupils	400-600	1/2 mi radius	16-24	25
Middle	10 + 1/100 pupils	750	1 mi radius	30	25
High School	20 + 1/100 pupils	1200	1-1/2 mi radius	48	25


JOHNSON
PARK
WILSON PARK
ASBELL SCHOOL
LEVERETT SCHOOL
WASHINGTON SCHOOL
RAMEY JUNIOR HIGH, SEQUOYAH POLYTECH
FARMINGTON
ELEMENTARY
PARK
JUNIOR HIGH
VOCATIONAL
HIGH SCHOOL
ATHLETIC FIELD
WALKER PARK
ROOT SCHOOL
HARMON PLAYFIELD
BATES SCHOOL, FAYETTEVILLE HIGH SCHOOL
EXISTING
COMMUNITY FACILITIES
PARKS
SCHOOLS

POPULATION PROJECTIONS BY AGE GROUPS FOR SELECTED YEARS
FOR FAYETTEVILLE

Age Group	Population 1965	1970	1975	1980	1985	1990
Under 5 yrs	1,972	2,330	2,730	2,970	3,495	4,045
5 to 9 yrs	1,688	1,850	2,170	2,560	3,018	3,493
10 to 14 yrs	1,624	1,840	2,020	2,380	2,804	3,246
15 to 19 yrs	5,248	6,610	7,800	8,930	10,541	12,201
20 to 24 yrs	4,930	6,290	7,410	8,510	10,028	11,607
25 to 29 yrs	1,451	1,830	2,120	2,420	2,850	3,299
30 to 34 yrs	1,222	1,420	1,590	1,760	2,073	2,399
35 to 39 yrs	1,049	1,350	1,560	1,750	2,062	2,387
40 to 44 yrs	1,253	1,210	1,540	1,810	2,134	2,470
45 to 49 yrs	1,006	1,450	1,310	1,820	2,144	2,481
50 to 54 yrs	1,055	1,120	1,610	1,450	1,707	1,976
55 to 59 yrs	870	1,100	1,160	1,680	1,981	2,293
60 to 64 yrs	813	950	1,200	1,280	1,509	1,746
65 to 69 yrs	714	850	1,000	1,270	1,499	1,735
70 to 74 yrs	598	690	830	980	1,153	1,335
75 yrs and over	786	1,010	1,250	1,530	1,802	2,087
TOTAL	26,279	31,900	37,300	43,100	50,800	58,800

Source: James A. Vizzier Planning Consultants

Schools

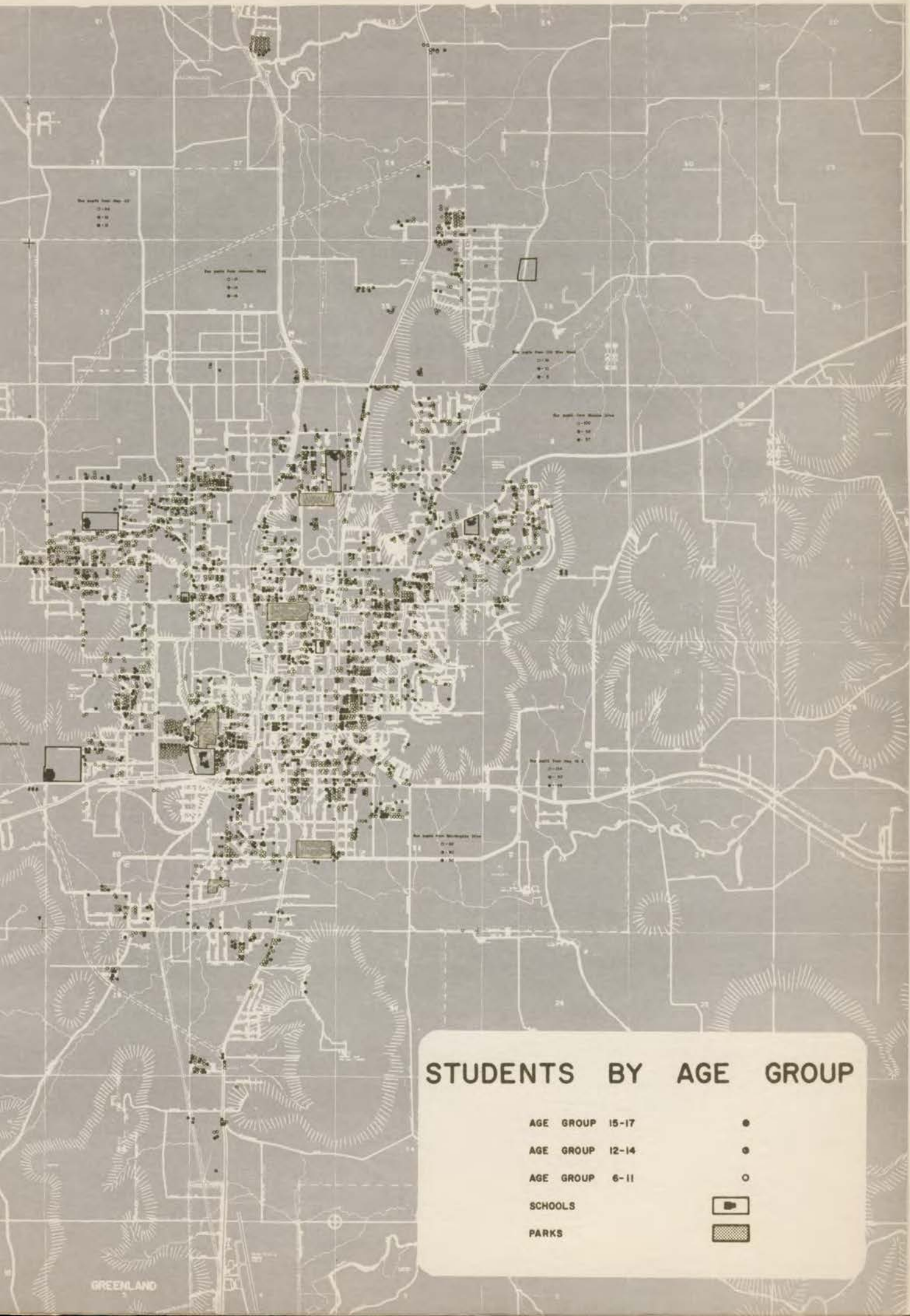
The Fayetteville School District extends 8 miles north and south and 20 miles east and west. The City of Fayetteville extends 10 miles north and south and 11 miles east and west. This leaves part of the City of Fayetteville in the Springdale School District on the north and part in the Greenland School District on the south.

Enrollment. School enrollment in the school district is about 15.5% of the school district population. Total population is expected to double within 20 years, an average increase of about 5% per year. School population is growing at about 4% per year. The difference is caused by the increase in University students who have very few children in school.

Projected Needs. Fayetteville has one high school, one vocational-technical school, two junior high schools, seven elementary schools and one small parochial school. Within 20 years school enrollment should almost double. If present standards for school sizes are maintained, one additional high school, two more junior high schools and three more elementary schools will be needed. During this period, it is suggested that one school (Leverett) be abandoned and that several others be expanded or modernized.

Location. Sites for proposed schools were selected to serve future residential areas or to serve areas where population density will increase. Limited residential growth is expected in the southwest and northwest sections of the City. Extensive growth is expected to the northeast and east. Schools, like most other services, must follow residential growth, but locations must be acquired before the residential development if site costs are to be kept low.

Joint Use of Schools. Since schools are centrally located, they can also serve as social and recreation centers for each neighborhood. The gymnasiums, auditorium, lunchroom and playground should be available to the public for use when they are not being used by the school. Of course, the City and the school board should agree on the terms and cost for using these schools.


STUDENTS BY AGE GROUP
AGE GROUP 15-17
AGE GROUP 12-14
AGE GROUP 6-11
SCHOOLS
PARKS
GREENLAND

Access. Elementary schools should be located within residential neighborhoods served by collector streets but away from major traffic arteries. Junior and senior high schools, because they serve larger areas of the City, should have easy access to collector and arterial streets although neither should abut arterial streets.

Size. Schools have been planned in small sizes and spaced closely to serve all neighborhoods easily without creating traffic problems or administrative problems. Physical barriers such as hills, highways, creeks, railroads and commercial areas have made this difficult in some cases.

Inventory and Analysis. The following table summarizes the existing schools, their additions and the proposed schools shown on the community facilities plan.

FAYETTEVILLE SCHOOL ENROLLMENT FOR SELECTED YEARS - PROJECTIONS TO 1990

	1-6	7-9	10-12	Total	Population	Percentage of Population Enrolled in School
1950	1,547	652	407	2,606	17,071	15.3
1960	1,995	945	628	3,568	20,274	17.6
1968	2,863	1,356	1,203	5,422	29,724	18.2
1970	3,019	1,452	1,335	5,806	31,900	18.2
1975	3,491	1,611	1,612	6,714	37,300	18.0
1980	3,957	1,784	2,017	7,758	43,100	18.0
1985	4,663	2,103	2,378	9,144	50,800	18.0
1990	5,398	2,434	2,752	10,584	58,800	18.0

Source: Vizzier Planning Consultants, Fayetteville, Arkansas.

WATER TREATMENT, STORAGE AND DISTRIBUTION

The water usage by the City of Fayetteville has shown a remarkable growth and its projected future growth is as reflected by the following table:

Table 1

Usage in Millions of Gallons

Year	Total Usage	Average Daily	Peak Days Usage
1950	550	1.50	2.50
1955	680	1.86	3.0
1960	825	2.26	3.45
1965	1,583	4.35	6.53
1970(estm)	2,300	6.30	9.50
1975 "	3,100	8.50	12.80
1980 "	3,850	10.50	16.50
1985 "	4,600	12.60	18.30
1990 "	5,400	15.00	22.50

The above quantities are the projected average expected growth and may vary either 10% up or down for an upper and lower limit. Actual usage and growth in the past have exceeded the upper limit of projection values.

For planning purposes the City should be able to furnish the average daily requirements plus a 50% reserve (with sufficient storage to supply the peak rate of comsumption) for pumping and/or treating daily capability of:

Table 2

Projected Water Use

1970	9.5 MGD
1975	12.8 MGD
1980	15.8 MGD
1985	19.0 MGD
1990	22.5 MGD

Treated Water Storage

The City should have treated water storage capacities in its reservoirs equal to 150% of its average daily require-

ments. On this bases the total storage capacity available should be as follows:

Table 3

Treated Water Storage

1970	9 Million
1975	12 "
1980	15 "
1985	20 "
1990	22 "

Storage requirements of this magnitude or greater are necessary if a standby source and treatment facilities are not provided, or where the primary source must depend upon one long transmission main.

Distribution System

The distribution system should be composed of mains of sufficient size to carry the peak demand requirements of industrial or large users without an objectionable decrease in pressure for adjacent or high elevation users. Main sizes may be economically reduced by prudent location of reservoirs and/or by booster pumps. Large mains looping the system and connecting storage facilities with the source are necessary. A computer analysis of system capability is the only way to accurately determine its weak points of carrying capacity.

Existing Source and Treatment

The public water system serving the City of Fayetteville is owned and operated by the City of Fayetteville. The first public system was constructed about 1900. The City has used as sources of supply: (1) the West Fork of White River (abandoned), (2) Lake Wilson (abandoned), (3) Clear Creek (abandoned), (4) Lake Fayetteville (to be abandoned 1970), (5) Lake Sequoyah, and will connect with (6) Beaver Lake in 1970.

The existing usable sources of supply, after 1970 will be: (Firm Yield)

Lake Sequoyah & White River	2.5 MGD
Beaver Lake Water District	11.0 MGD*
TOTAL	13.5 MGD

(*Note: Contractual Rights to 20 MGD Total)

With the completion of presently proposed improvements of the Beaver Water District, the City of Fayetteville should be able to obtain the 11 MGD allocated. It should be noted that with the exception of 3 or 4 months in the summer that 10 MGD or more could be taken from the Lake Sequoyah source. At present the City has been obtaining the water required in excess of 6 MGD from Lake Fayetteville.

An economic study will be necessary to determine the respective costs of obtaining water from the Beaver source versus obtaining all available from the Lake Sequoyah source. This cannot at present be determined because the cost of obtaining water at Beaver is unknown. Pumping costs from the Beaver source will be substantially higher due to additional 100 feet of pumping head. Also the cost of chemicals for treatment are expected to be somewhat higher than presently costing the City.

By 1975 (see Table 2) the City will need to have available more than the 11 MGD presently allocated; and also a Beaver District treatment plant expansion will be required (in addition to expansion of 1970). At this point in time the City of Fayetteville will have to determine if it wishes to abandon its treatment facilities with dual sources of supply and help with a completely new expandable treatment facility at Beaver or construct its own new treatment plant east of the City with another 36 inch main for raw water transmission from Beaver Reservoir and the existing raw water line from Lake Sequoyah. Other considerations at that time will be the quality of water in Beaver Lake relative to a possible sulfate buildup from the sewer plant effluent.

The proposed (1970) 36 inch treated water main from Beaver Water District plant has a usable capacity, at reasonable pumping costs, of 20 MGD which will carry the amount of water now allocated to Fayetteville. Therefore prior to 1975 it will be necessary for the City to obtain additional water rights from the U. S. Government and assess the cost thereof versus the development of the Middle Fork watershed to be used in conjunction with Lake Sequoyah and Beaver system when requirements exceed 22.5 MGD estimated to occur by 1990.

Regardless of which route the City may use for future requirements there are definite advantages in maintaining a treatment facility of its own for system reliability at least until a second transmission main is constructed to the Beaver facility.

Existing City treatment facilities, constructed in early 1950's, have a nominal capacity of 9 MGD, however the raw water main from Lake Sequoyah is limited to approximately 6 MGD. This facility will have reached the end of its useful life by 1975 and should be replaced or abandoned depending upon previously outlined developments as of that time.

Storage

The City presently has 5 million gallons of treated water storage in its basic distribution system: 3 million gallon concrete reservoir at the Mt. Sequoyah treatment plant; 1 million gallon steel ground storage tank at the Baxter Street site; 1 million gallon elevated storage tank at the Markham Hill site; 0.25 million gallon elevated steel storage tank on Mt. Sequoyah as a secondary distribution system. Plans are complete under the 1970 improvement program for the construction of a new five million gallon ground storage reservoir at the Baxter Street site (to be utilized as elevated storage); this will increase storage capacity to 10 million gallons. This meets expected requirements at that time (see Table 3); however, the existing 3 million gallon concrete reservoir is in a dangerous structural condition and should be replaced. If it is taken out of service, a new 5 million gallon one should be completed by 1975. This additional storage should be constructed on South Mountain or at the Mt. Sequoyah site depending upon the location and demand of industrial users at that time. Additional ground-surface storage will be required to increase storage capacity as reflected in Table 3.

Additional high level system storage will be required to meet growing residential development located above the 1500 foot contour of the mountains served by the City.

The City is indeed fortunate in having areas of sufficient elevation to permit construction of ground-surface reservoirs versus elevated tanks. The location of future storage should be determined by demand-location and existing or possible main sizes to supply the demand.

Distribution

The existing distribution system in general is too small in

main sizes to provide sufficient water quantity to the built-up areas of the City ans its industrial load. The network of older lines in the business district are inadequate. Constructing mains through the heavily developed areas is very expensive due to disruption of service and damage to property. Looping mains that surround the developed areas and feed-back toward the center are a logical solution as they also permit service to expanding areas outside the loop.

Adequate mains - such as looping mains - are also necessary to connect storage facilities with the source or transmission main(s) to the City. Prior to completion of the 1970 improvement program there exists an inability to transmit sufficient quantities of water across the City to the storage facility on Markham Heights. Part of a future 24 inch looping main will connect this tank to the Beaver transmission main which should solve the problem until 1975. The next phase of the looping and storage improvements together with a booster pump station will be required by 1975. Completion of distribution system requirements and their estimated date of need are shown on the accompanying map.

It should be noted that the system as outlined requires the change of the 16 inch and 20 inch raw water line to Lake Fayetteville to a treated water line and its connection to the proposed 36 inch line to Beaver in the Mud Creek area. This is estimated to be needed by 1975. Also the 14 inch raw water line to the Old West Fork pump station will be converted to treated water and will help serve the needs of the Industrial Park located in the southeast portion of the City. When the Mt. Sequoyah treatment plant is abandoned and new storage facility is constructed at that site, the 20 inch raw water line from Lake Sequoyah shall be converted to a treated main and connected to the new treatment facility east of the City or to the second 36 inch transmission water main from Beaver proposed to loop the City on the east side. As previously mentioned the decisions on these items should depend on future economic studies and the industrial development proposed in the southeast section of the City.

Some distribution system strengthening is recommended across the City in the area of the City Park to help serve the University and the industrial load along the railroad tracks. Also some additional main capacity is proposed to meet the requirements of the present business and commercial areas.

These improvements are necessary by 1975.

Looping mains are expected to be necessary to supply the Greenland, Farmington, Mt. Comfort, Highway 45 E and Elkins areas by 1990.

Cost Estimate

	Proposed Date	Description	Estimated Cost
1.	1970	36", 30", 24" 16" Water Mains	$ 2,700,000
2.	1970	5 Million Gallon Reservoir	250,000
3.	1975	Additional Looping Mains	2,000,000
4.	1975	Additional 5 MG Reservoir	300,000
5.	1990	2 Additional 5 MG Reservoirs	650,000
6.	1990	Additional Mains and Transmission Mains	3,500,000
		Estimated Costs within 5 years	$ 2,250,000
		Estimated Costs within 20 years	$ 4,150,000

JOHNSON

EXISTING STORAGE FACILITY
1 MILLION GAL.

EXISTING STORAGE FACILITY
1 MILLION GAL.

PROPOSED STORAGE FACILITY
5 MILLION GAL.

EXISTING STORAGE & TREATMENT FACILITIES
.73 MILLION GAL.

EXISTING STORAGE FACILITY
1/4 MILLION GAL.

FARMINGTON

PROPOSED STORAGE FACILITY
5 MILLION GAL.

WATER LINES

EXISTING LINES, 12 INCH AND LARGER

EXISTING LINES, 6 TO 10 INCH

PROPOSED LINES, 20 INCH AND LARGER

PROPOSED LINES, 8 INCH

WASTE WATER COLLECTION AND TREATMENT

The City has recently completed and is now using its new 10 Million Gallons Per Day Waste Water Treatment Plant located east of the City. This plant is of the activated-sludge type of treatment and should meet the needs of the City for 10 years. It is designed to allow expansion to 20 MGD and to allow upgrading to tertiary treatment.

The City of Fayetteville is situated in two drainage areas. Approximately 50% of its area in each watershed, with 70% of its sewage load in the south (White River) drainage area and 30% in the north (Illinois River) drainage area.

Under present rulings of the Water Pollution Control Commission all sewage from Fayetteville must be treated and disposed of in the White River drainage system. This requires the City to pump from the Illinois watershed area across the divide to treatment facilities south and east of the City. Indications are that this condition will continue.

The City of Fayetteville has provided sewage pumping facilities for the limited development on the north side of Fayetteville in the Clear Creek watershed. The City of Springdale has done the same for those areas on the south side of Springdale. Neither of these pumps will support intensive development and it would be desirable for both communities to construct a common treatment plant in the future to serve this water shed. This plant would probably have to provide tertiary treatment to meet the requirements of the Arkansas Pollution Control Commission, but it would eliminate the need for pumping sewage into the present treatment plants of the two communities.

Sewage is collected on the south slope and carried by a 36 inch gravity interceptor sewer main from the old treatment facility to the new plant. This system has a normal carrying capacity of 15 MGD. It was constructed of metal pipe and tested for future use as a force main when additional capacity is needed. It is considered satisfactory for the 20 year planning period or to 1990.

The sewage that formerly was pumped from the north slope into the line that flows south through the center of the City is now pumped across the northeast part of the city to the new treatment plant. This releases part of the north-south line to carry additional sewage from the center of the City.

This system is satisfactory, or expandable to carry 5 MGD which should be adequate to 1990.

Although the degree of treatment provided is the best possible by conventional methods, present trends and federal requirements may force the City to construct some type of tertiary treatment in the future.

The collection system within the City makes possible (with facilities presently under construction) sewer service to 85% of the area in the City. The mains are yet to be constructed that would provide sewer service to the unserved areas. This study does not include a report of these minor service facilities. It attempts to outline for future planning how future developments to provide service should be accomplished.

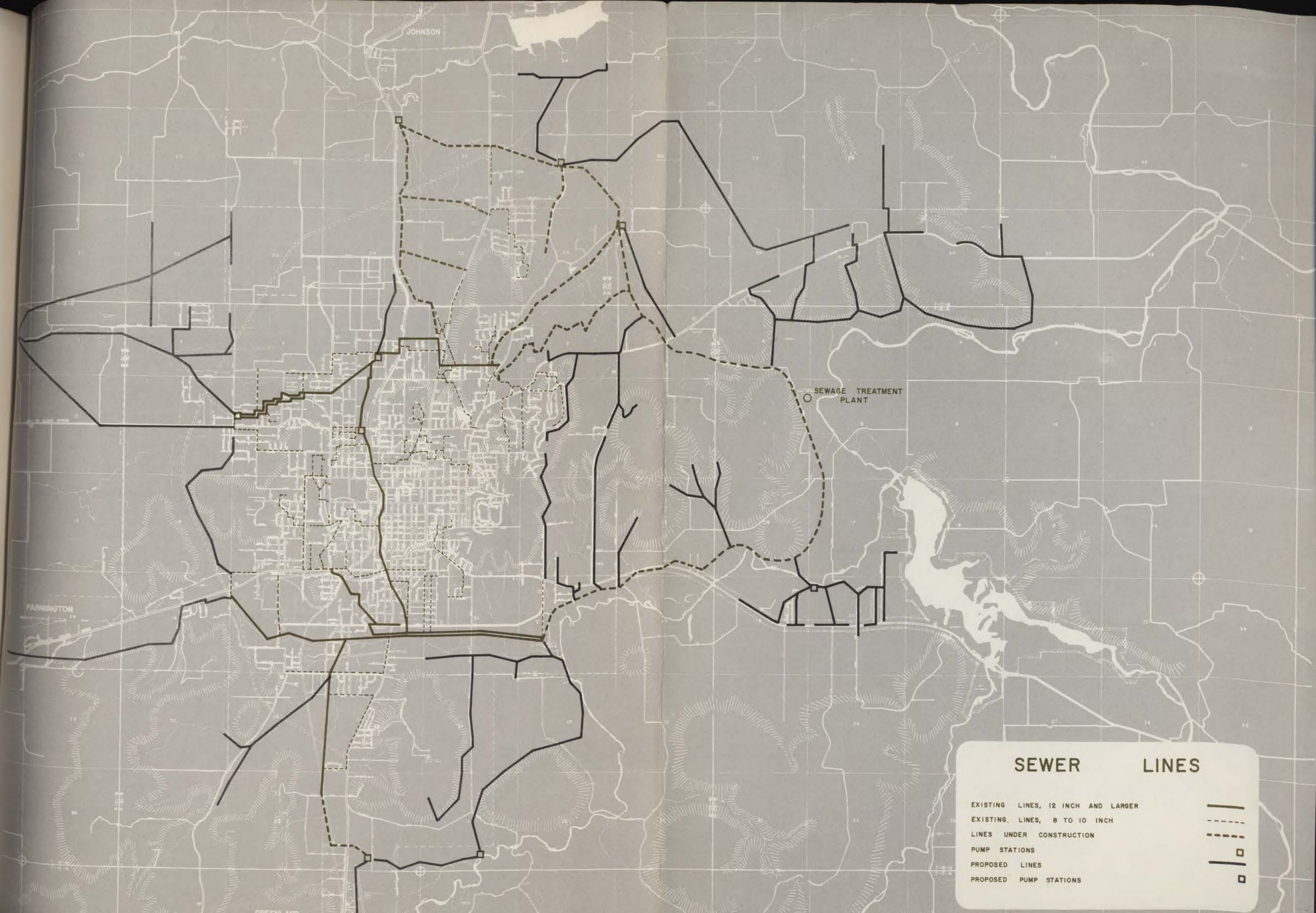
Sewer service can be extended to areas surrounding the City with proposed lift stations located approximately as shown on the accompanying map.

The existing Poplar Street Lift Station should be abandoned permitting sewage flow to continue northward along Skull Creek to Lift Station No. 5. This will relieve the loaded condition of the North Street Station and its force main located in the railroad right-of-way cut to the south. This design will also extend the useful life of the City's 21 inch, 30 inch and 36 inch outfall mains to the south and east. The Porter Road Lift Station can have its force main relocated south to discharge and flow by gravity parallel to the new Highway 71 By Pass west of the City. Eventually the new lift station 4 can be relocated eastward on West Fork River with its force main constructed to discharge at a point south of the Industrial Park and flow by gravity to the upper end of the new 36 inch outfall at the old treatment facility.

Future gravity sewer service can be made available as far east and north of the new treatment plant as Habberton and Highway 45 East.

The new sewer treatment plant is expected to need expansion to 20 MGD by 1990; and this can be economically accomplished by the construction of additional treating units estimated to cost $300,000.

The total estimated sewer improvements needed within five years is estimated at $1,800,000 and that estimated to be required by 1990 is $2,200,000 for an estimated expenditure of $4,000,000.


JOHNSON
FARMINGTON
SEWAGE TREATMENT PLANT
SEWER LINES
EXISTING LINES, 12 INCH AND LARGER
EXISTING LINES, 8 TO 10 INCH
LINES UNDER CONSTRUCTION
PUMP STATIONS
PROPOSED LINES
PROPOSED PUMP STATIONS

SURFACE DRAINAGE

Fayetteville's soils are not ideal for supporting urban development. Much of the area has slopes that are too steep to bear intensive building, although drainage on these slopes is quite rapid. Where slopes are flatter, the soil permeability is poor, and the surface water builds up during heavy rainfall. The result of these conditions is erosion on hillsides and slow run-off and mild flooding in level areas during heavy rains. Either condition damages streets and building sites that are located without regard for drainage.

As the city grows, the drainage gets worse. Trees are cut, terrain is leveled and large areas are covered with streets, buildings, walks, drives and parking lots. Absorption is reduced and water moves faster, erodes more soil and collects more rapidly in low places.

If the city is to solve these problems, terrain must be considered more carefully in future building, and a surface water drainage system must be planned as an integral part of the major and collector street system. This will provide a framework for collecting and distributing surface water evenly without major concentrations just as it does for traffic.

The terrain and drainage map describes the various water sheds in the city bounded by ridge lines and drained by watercourses. The symbols identify the intersection of these watercourses with the street system. The acreages on the accompanying chart represent the amount of water shed upstream from these intersections. With a given rainfall and watershed acreage, it is possible to calculate the water that must be carried at a particular point. From this data, a gutter, culvert, bridge, or swale can be designed and sized. The information can also be used to evaluate cuts, fills and proposed changes in natural drainage courses.

Once the city establishes a drainage system as part of the major and collector streets, the drainage for each new subdivision or other development can be added to it as growth occurs.

FAYETTEVILLE WATERSHED STUDY

Map Symbol	Location	Drainage Area
	T16N-R30W	
A-4	Sec 24	---
A-5	Sec 13	181
A-6	Sec 23	1024
A-7	Sec 23	109
A-8	Sec 15	92
A-9	Sec 15	110
A-10	Sec 15	38
A-11	Sec 15	156
A-12	Sec 22	5.461
A-13	Sec 22	108
A-14	Sec 27	91
A-15	Sec 27	69
A-16	Sec 34	115
A-17	Sec 34	19
A-18	Sec 33	115
A-19	Sec 33	395
A-20	Sec 33	174
B-1	Sec 1	359
B-2	Sec 1	45
B-3	Sec 1	399
B-4	Sec 11	19.3
B-5	Sec 10	7.3
B-6	Sec 10	33
B-7	Sec 3	301
B-12	Sec 3	317
B-13	Sec 10	298
B-14	Sec 16	56
B-15	Sec 16	421
B-16	Sec 16	31
B-19	Sec 19	358
B-20	Sec 19	179
C-1	Sec 19	262
C-2	Sec 20	165
C-3	Sec 17	184
C-4	Sec 17	87
C-5	Sec 16	641
C-6	Sec 21	492
C-7	Sec 21	4.389
C-8	Sec 28	73
C-9	Sec 28	60
C-10	Sec 28	363
C-11	Sec 3	606
C-16	Sec 8	203
C-17	Sec 7	329
D-18	Sec 2	399
D-19	Sec 12	45
D-20	Sec 11	55
E-1	Sec 6	551
E-2	Sec 6	70
E-3	Sec 6	101
E-4	Sec 7	1056
E-5	Sec 7	638
E-6	Sec 7	184
E-7	Sec 7	78
E-8	Sec 8	64
E-9	Sec 9	69
E-10	Sec 9	46
E-11	Sec 9	14
E-12	Sec 3	203
E-13	Sec 10	28
E-14	Sec 10	55
E-15	Sec 9	487
E-16	Sec 16	65
E-17	Sec 16	82
E-18	Sec 16	32
E-19	Sec 16	75
E-20	Sec 17	184
F-1	Sec 15	106
F-2	Sec 15	69
F-3	Sec 15	115
F-4	Sec 16	7
F-5	Sec 16	393
F-6	Sec 16	29
F-7	Sec 16	74
F-8	Sec 16	161
F-9	Sec 11	138
F-10	Sec 14	145
F-11	Sec 14	455
F-12	Sec 14	298
F-13	Sec 13	127
F-14	Sec 14	657

FAYETTEVILLE WATERSHED STUDY (Cont.)

Map Symbol	Location	Drainage Area
	T16N-R30W	
F-15	Sec 14	18
F-16	Sec 22	376
F-17	Sec 22	28
F-18	Sec 22	111
F-19	Sec 21	878
F-20	Sec 22	5.35
G-1	Sec 21	81.3
G-2	Sec 17	23
G-3	Sec 20	73
G-4	Sec 18	184
G-5	Sec 17	46
G-6	Sec 20	64
G-7	Sec 20	675
G-8	Sec 19	32
G-9	Sec 19	285
G-10	Sec 20	66
G-11	Sec 20	750
G-12	Sec 20	814
G-13	Sec 21	110
G-14	Sec 21	243
G-15	Sec 29	38
G-16	Sec 29	927
G-17	Sec 29	28
G-18	Sec 29	689
G-19	Sec 28	590
G-20	Sec 31	224
H-1	Sec 31	308
H-2	Sec 33	253
H-3	Sec 26	487
H-4	Sec 26	69
	T16N-R31W	
B-17	Sec 24	78
B-18	Sec 24	82
	T16N-R29W	
A-1	Sec 20	69
A-2	Sec 19	74
A-3	Sec 19	43
	T17N-R29W	
D-13	Sec 30	62
D-14	Sec 30	1,488
D-15	Sec 31	2,640
	T17N-R30W	
B-8	Sec 35	60
B-9	Sec 35	17
B-10	Sec 35	55
B-11	Sec 35	63
C-12	Sec 24	28
C-13	Sec 25	3,340
C-14	Sec 25	119
C-15	Sec 26	3,859
C-18	Sec 26	212
C-19	Sec 26	60
C-20	Sec 27	2,350
D-1	Sec 34	129
D-2	Sec 34	106
D-3	Sec 34	1,617
D-4	Sec 34	497
D-5	Sec 35	437
D-6	Sec 22	6,924
D-7	Sec 27	184
D-8	Sec 33	18
D-9	Sec 35	28
D-10	Sec 36	69
D-11	Sec 36	139
D-12	Sec 36	551
D-16	Sec 36	106
D-17	Sec 37	696

Map Symbol	Soil Name & Description	Dwellings with: Public or Community Sewerage System	Dwellings with: Septic Tank Filter Field	Camp Sites	Picnic Areas	Intensive Play Areas	Golf Fairways	Light Industries	Trafficways	Erodibility (Bare Soil)	Drainage Class
LkC2	Linker loam, 3 to 8% slopes, eroded	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Severe	Well Drained
LnC2	Linker gravelly loam, 3 to 8% slopes, eroded										
ApC2	Apison loam, 3 to 8% slopes, eroded										
AsC2	Apison gravelly silt loam, 3 to 8% slopes, eroded										
PgC2	Pembroke gravelly silt loam 3 to 8% slopes, eroded										
PeB	Pembroke silt loam, 1 to 3% slopes										
PeC2	Pembroke silt loam, 3 to 8% slopes, eroded										
LkB	Linker loam, 1 to 3% slopes										
PsB	Pickwick silt loam, 1 to 3% slopes										
PsC2	Pickwick silt loam, 3 to 8% slopes, eroded										
PkC2	Pickwick gravelly silt loam 3 to 8% slopes, eroded										
FaC2	Fayetteville fine sandy loam, 3 to 8% slopes, eroded										
AlC2	Allen loam, 3 to 8% slopes, eroded										
AeC	Allegheny gravelly loam, 3 to 8% slopes										
AeC2	Allegheny gravelly loam, 3 to 8% slopes, eroded										
BaD	Baxter cherty silt loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Moderate Traf.-Fair (slopes)	Slight No limitation	Moderate Traf.-Fair (gravel)	Moderate Traf.-Fair (gravel)	Moderate Slopes	Slight No limitation	Severe	Well Drained
LnD	Linker gravelly loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Moderate Slopes	Slight No limitation	Moderate Slopes	Moderate Slopes	Moderate Slopes	Slight No limitation	Severe	Well Drained
PkD2	Pickwick gravelly loam, 8 to 12% slopes, eroded										
FaD2	Fayetteville fine sandy loam, 8 to 12% slopes, eroded										
AlD2	Allen loam, 8 to 12% slopes, eroded										
AeD2	Allegheny gravelly loam, 8 to 12% slopes, eroded										
FaE2	Fayetteville fine sandy loam, 12 to 20% slopes, eroded	Moderate Slopes	Severe Slopes	Severe Slopes	Moderate Slopes	Severe Slopes	Severe Slopes	Severe Slopes	Moderate Slopes	Severe	Well Drained
AlE2	Allen loam, 12 to 20% slopes, eroded										
AgD	Allegheny stony loam, 8 to 12% slopes	Slight No limitation	Slight No limitation	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Severe Traf.-Poor (stones)	Moderate Slopes	Slight No limitation	Severe	Well Drained
AnE	Allen stony loam, 8 to 12% slopes										
CaB	Captina silt loam, 1 to 3% slopes	Slight No limitation	Severe Perc.-slow	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Slight No limitation	Moderate	Moderately Well
CaC2	Captina silt loam, 3 to 6% slopes, eroded									Severe	Drained
JaB	Jay silt loam, 1 to 3% slope									Moderate	
JaC	Jay silt loam, 3 to 8% slope									Severe	
SfB	Savannah fine sandy loam, 1 to 3% slopes									Moderate	
SfC2	Savannah fine sandy loam, 3 to 8% slopes, eroded									Severe	
Ca-C	Captina silt loam, 3 to 6% slopes									Severe	