
1990 Land Use Study



*City of Springfield, Missouri
Department of Planning and Development
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Introduction

The *1990 Land Use Study* is one of a series of inventory and resource documents prepared as background material to support Springfield's *Comprehensive Plan*. Existing land use information is indispensable in understanding the physical characteristics of a community and the relationship of people to land. Simply stated, land use is the spatial distribution of the various functions in life: places where people live, work, shop, and play.

In addition to the land use data collected in 1990, this study also includes a comparison with 1980 land use data.

Purposes Of Study

Since this report is meant to function as resource material to support Springfield's *Comprehensive Plan*, it may be helpful to define what is meant by the term "comprehensive plan." Springfield's *Comprehensive Plan* concentrates on the physical development of the community and is an official statement that sets forth City Council's major policies concerning future development of the City. In order to define the desired physical development, it is necessary to know what development currently exists and what patterns or changes have taken place over the last ten, fifteen, or twenty years.

The *1990 Land Use Study* enables the citizens and policy makers of Springfield to better understand the physical development of the community in quantitative terms (how much land is devoted to the different uses?) and in spatial terms (what is the distribution of these different land uses?). The purpose of this study is to identify changes in the physical development of the Springfield metropolitan area and to serve as a resource for land use decision-makers in both the public and private sector.

Study Outline

There are two major sections in this study.

The first section, *The Land Use Survey*, defines the study area and describes the methodology used to conduct the land use survey. The section entitled *Survey Findings* presents a discussion of the spatial and quantitative distribution of residential, commercial, industrial and other existing land uses.

The Land Use Survey

Study Area

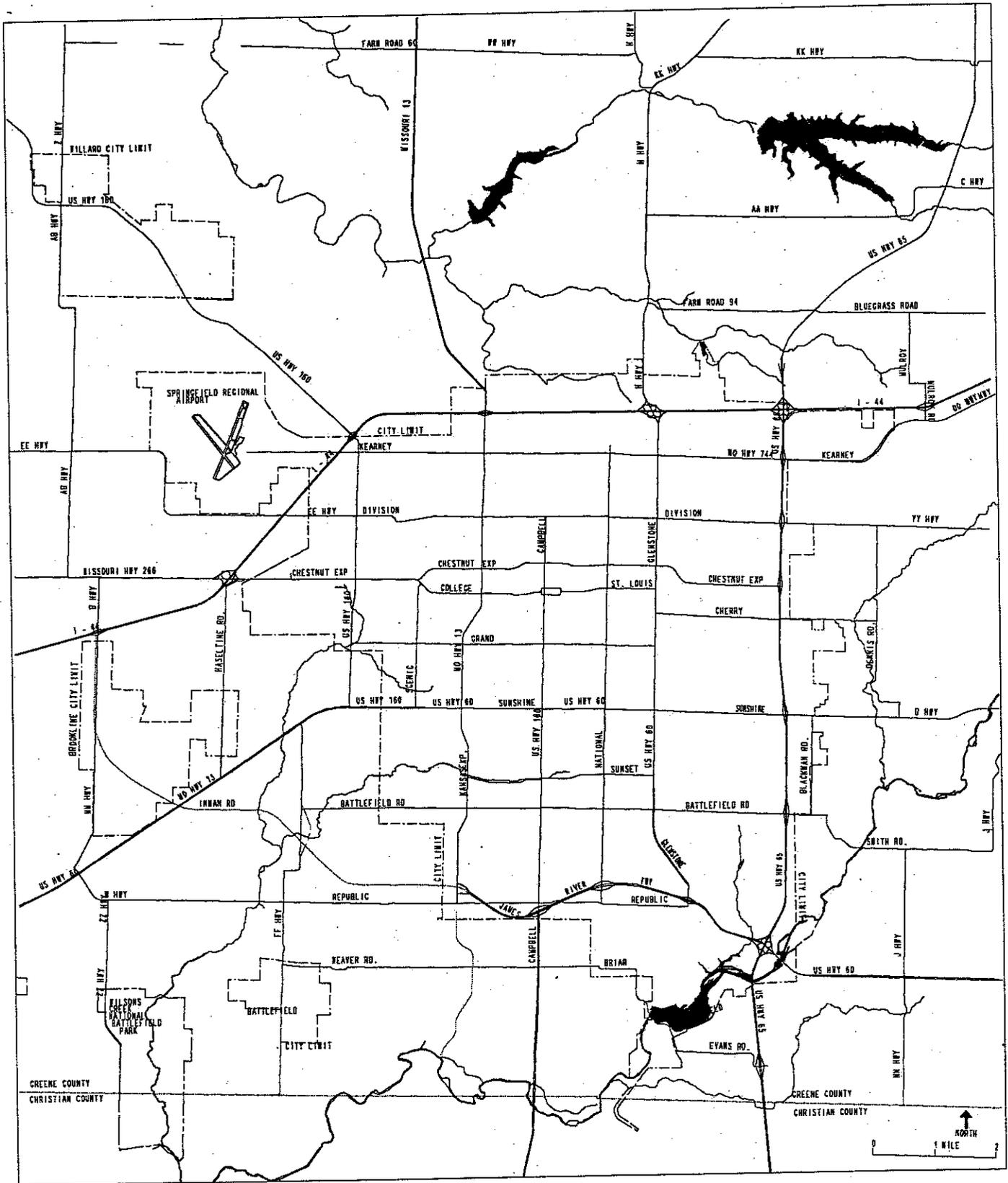
The study area for the 1990 *Land Use Survey* coincides with the Springfield Transportation Study Area used by the City of Springfield and the State of Missouri for transportation planning purposes. Its boundaries are Missouri State Highways WW and KK on the north, Gault Road (County Road 205) on the east, Christian County on the south, and County Road 97 on the west (Map 1).

Since its creation in 1961, the Transportation Study Area has been expanded from 92.5 square miles to 245.1 square miles in 1980 (Map 2). The area remains the same in 1990. During this same period, the incorporated area of Springfield has increased from 34.8 square miles in 1961 to 67.38 square miles in 1990. Table 1 shows the area changes for the City of Springfield and the Transportation Study Area from 1961-1990.

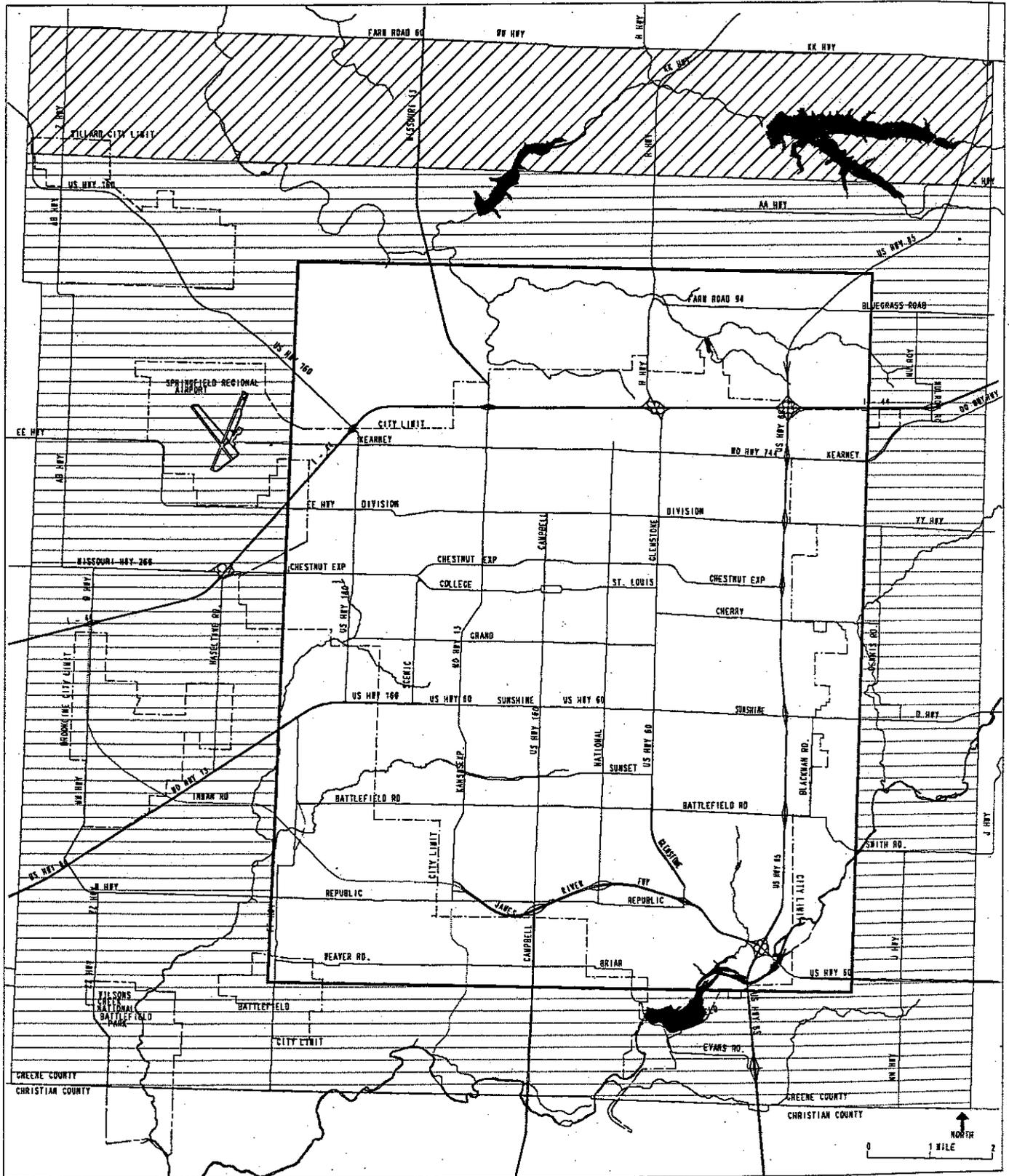
Table 1
Land Area In Square Miles: 1961-1990
Transportation Study Area

Year	Springfield	Transportation Study Area
1961	34.8	92.5
1964	38.7	92.5
1966	44.1	92.5
1967	48.5	92.5
1968	56.9	92.5
1969	61.5	92.5
1972	62.7	92.5
1974	62.7	122.5
1976	63.3	221.5
1980	64.4	245.1
1990	67.4	245.1

Map 1. Land Use Study Area



Map 2. Springfield Transportation Study Area, 1961-1990



1961 STUDY AREA
 AREA ADDED IN 1980
 AREA ADDED IN 1986

Methodology

Aerial photography was taken for the study area during February and March of 1990 to correspond with the 1990 decennial census. The land use survey was conducted by the Department of Planning and Development between June of 1990 and January of 1991. Land use data from the Department of Planning and Development's 1986 Land Use Update was utilized as a reference for coding existing land uses on the 1990 aerial photographs. Data were coded by use, census tract, transportation zone, and jurisdiction. As each map was coded, certain sites were field checked to verify their use.

Land uses were classified into seven major categories. These major categories were further divided to allow more specific land use classifications (Table 2). Definitions and specific examples of uses within each of the classifications are provided in *Appendix A*.

Table 2
Land Use Classification System

Residential

- Single-Family
- Two-Family
- Multi-Family
- Mobile Home Parks
- Group Quarters

Commercial & Office

- Light Commercial
- Heavy Commercial
- Office

Industrial

- Extractive
- Wholesaling and Warehousing

Transportation, Communications & Utilities

Manufacturing

Community

- Educational and Cultural
- Public
- Hospitals
- Quasi-Public

Parks & Open Space

Agricultural & Undeveloped

Right-Of-Way

At the parcel level, land use was measured to determine the number of acres each use occupied, and this information was summarized by the geographic areas shown in Table 3 and Map 3.

Table 3
Data Summary Areas

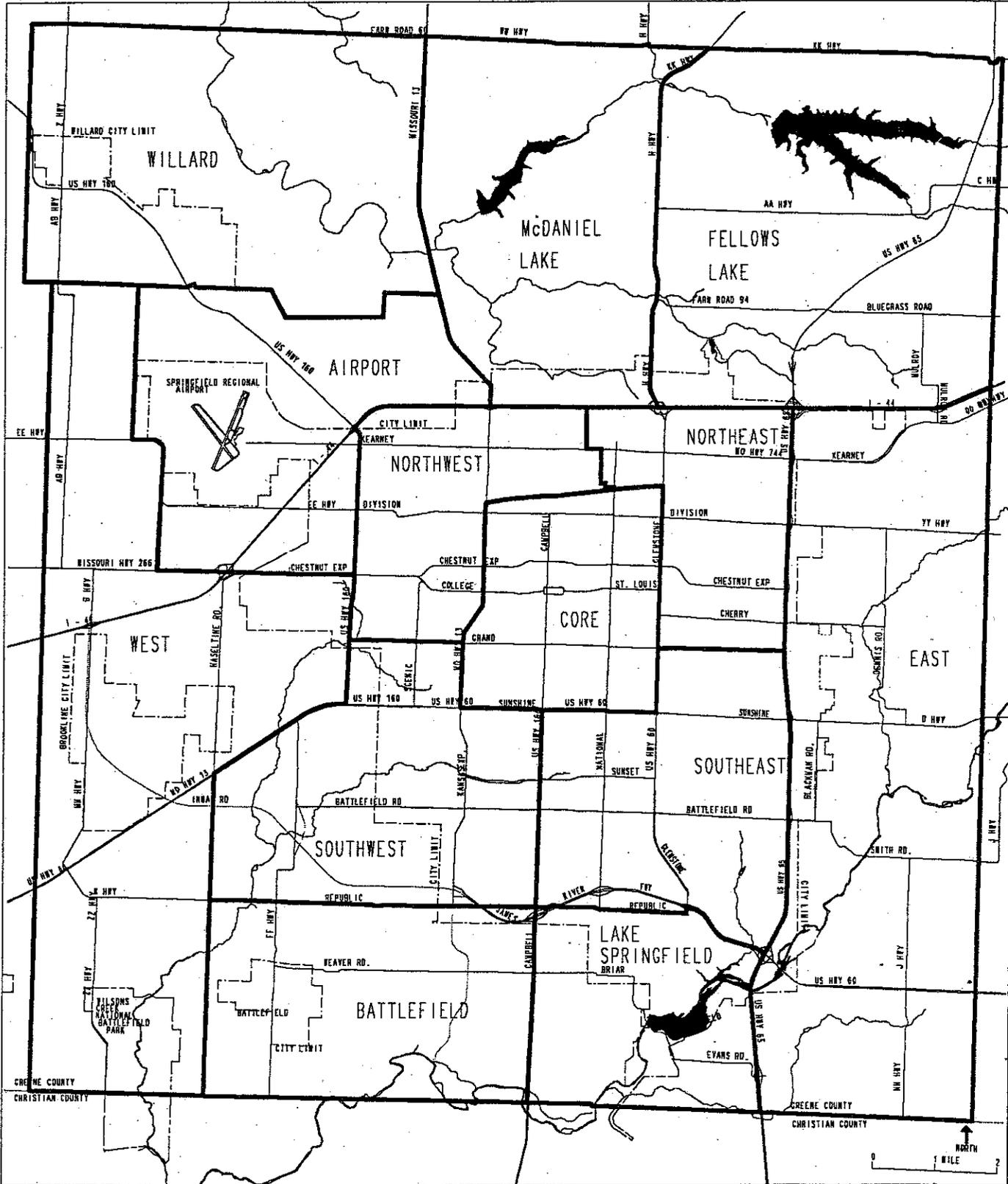
- Core
- Northeast
- Southwest
- Southeast
- Northwest
- West
- Lake Springfield
- Battlefield
- East
- Fellows Lake
- McDaniel Lake
- Willard
- Airport

The study area was divided into 13 subareas by combining census tracts. Census tracts are areas designated by the Census Bureau for aggregation of census data. While the boundaries of census tracts are somewhat arbitrary, it is useful to use subareas that conform to census tract boundaries to provide a means to compare land use and socio/economic data from the census.

Previous land use studies for Springfield did not use the same subareas defined for this study, therefore, comparisons between 1990 and earlier data are not possible.

A summary of existing land use by census tract is found in *Appendix B* and a summary by transportation zone is found in *Appendix C*. Transportation zones are smaller than census tracts and divide the Study Area into 282 geographic areas. Total population and unit counts for each census tract are contained in *Appendix D*. These data are from the 1990 Census.

Map 3. 1990 Data Summary Subareas



Survey Findings

Data obtained from the land use survey can be described spatially and quantitatively. The spatial distribution of land uses is shown on the 1990 Existing Land Use map (Map 4) and provides an understanding of where different land uses are located with respect to other uses and with respect to the transportation system.

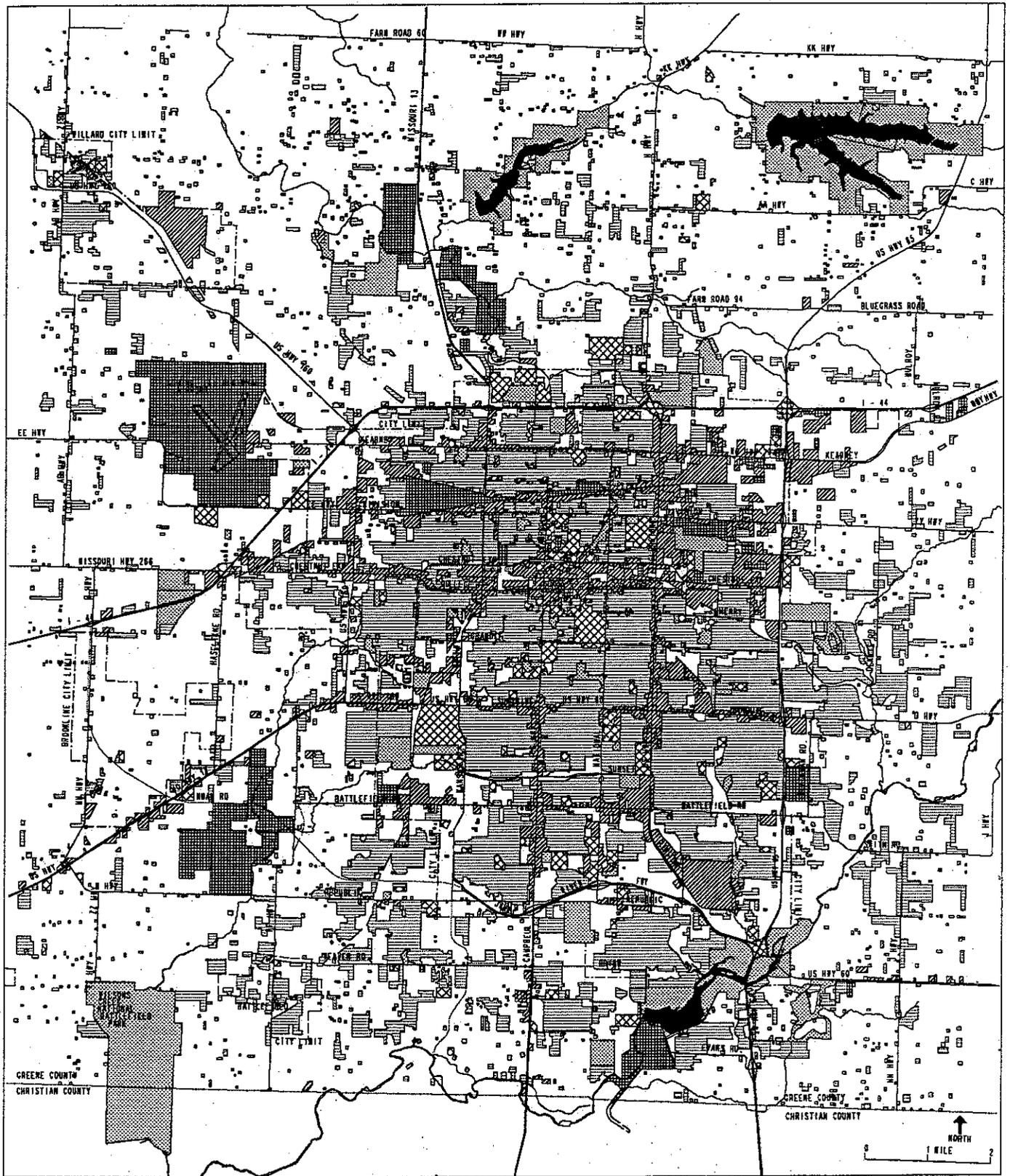
The quantitative data for existing land use are presented in tabular form and provide details on the amount of land used for different purposes. This information enables a better understanding of the relationships which exist among different land uses in the Springfield area; for example, how much residential land there is in relation to commercial and industrial land. This provides a development ratio by land use type and is critical when making future land use projections.

This section of the *1990 Land Use Study* contains a spatial and quantitative analysis of land use in the Springfield area by land use type. The spatial analysis is general, covering only the study area as a whole. The quantitative analysis, however, examines several geographical units: the 13 subareas, the City of Springfield, and the study area outside of Springfield.

Spatial Distribution

Early development in Springfield was dependent on the railroad. Most industries and businesses required close proximity to rail lines for receiving supplies and shipping finished goods. Residential development tended to occur beyond the major industrial/commercial area, but in close walking distance. This pattern of development is still evident in Springfield today by the band of high-intensity uses running east and west through the Central Business District and beyond. To a lesser extent this development pattern still exists along Commercial Street to the north. These two areas remain the paths of the major rail lines running through Springfield.

As railroads have been replaced by cars and trucks as the major means of transportation, land uses have become more scattered. Residential areas have developed further away from shopping and employment centers. Commercial uses have tended to follow the residential uses but are still oriented towards the major transportation routes which are now composed of streets. Only industrial uses have retained limited dependence on the railroad.



Map 4. 1990 Existing Land Uses



Residential



Commercial & Office



Industrial



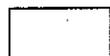
Transportation, Communications & Utilities



Community



Parks & Open Space

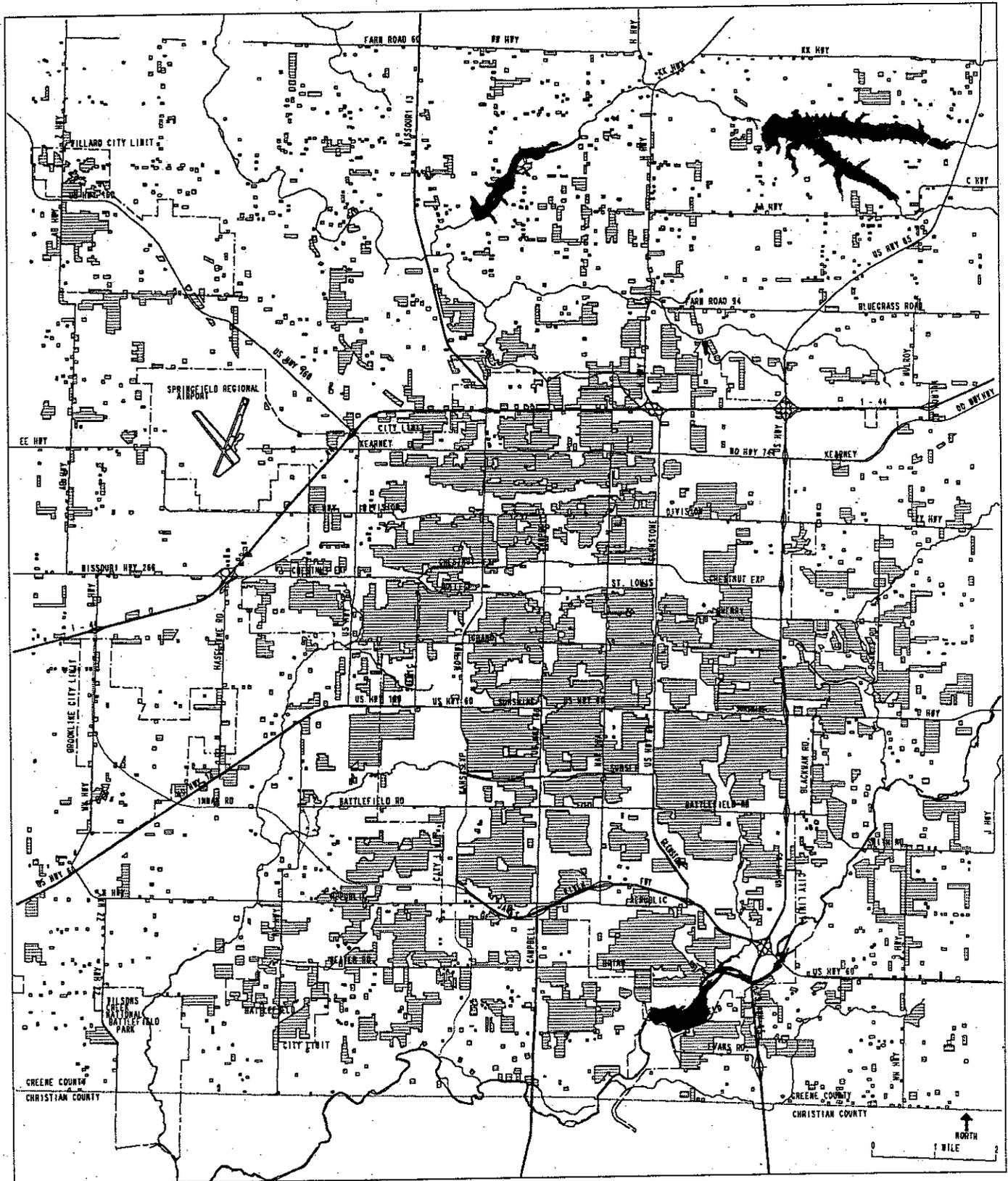


Agricultural & Undeveloped

Residential Land Use Pattern

The urban residential land use pattern is concentrated within an area roughly bordered by Interstate 44, U.S. Highway 65, Republic Street and the West Bypass (Map 5). Within this area around the Central Business District is a ring of multi-family structures mixed with lower density residential structures. Beyond this ring, the residential uses become more concentrated into areas of similar housing types. Single-family housing generally occurs within blocks bordered by arterials, while multi-family housing is generally found along, or in close proximity to, the major arterials. Outside of this area, residential land use occurs in a scattered development pattern with clusters of single-family residential subdivisions and large areas of undeveloped land in between them.

Map 5. 1990 Residential Land Use Pattern



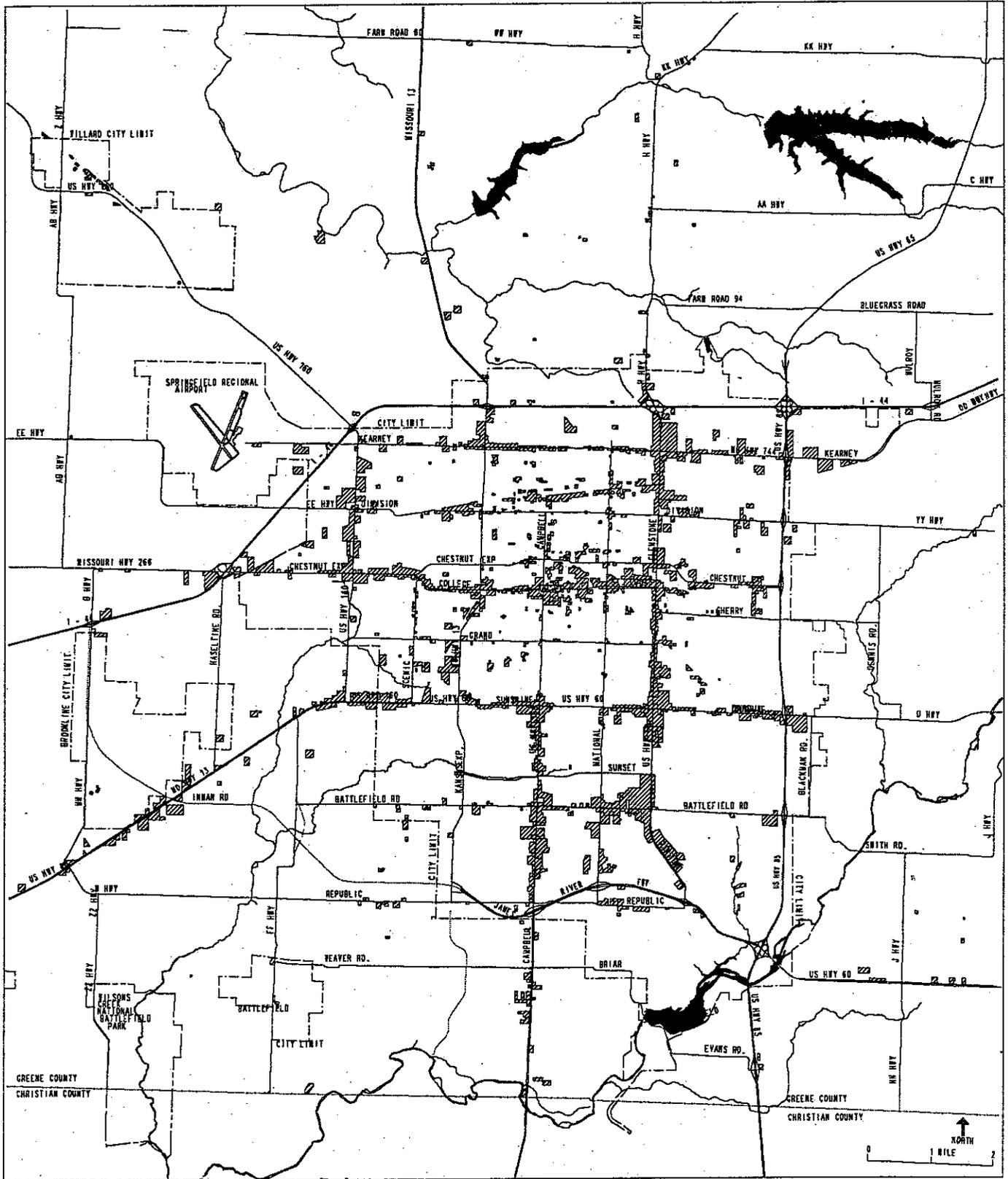
Commercial Land Use Pattern

Commercial and office development patterns reflect the reliance these uses have on transportation facilities, their need to locate in proximity to similar uses for competitive reasons, and their need to be close to supportive services (Map 6).

The Park Central area, the original Central Business District in Springfield, continues to show a concentration of commercial land uses. However, the character of the Park Central area is evolving from Springfield's hub of general commercial development to a center for offices, financial institutions, and their related supportive services.

The character of commercial uses along several major arterials reflects the former designation of these arterials as federal highways and the time when these streets were used as major carriers of travellers passing through Springfield. Portions of Glenstone Avenue, Kearney Street, the West Bypass, St. Louis/College Street, and Chestnut Expressway have all developed with tourist-oriented commercial uses due to their former status as U.S. Highways. Following the construction of Interstate 44 and the decline of Park Central, the city's major arterials such as Glenstone Avenue, Campbell Avenue and Battlefield Road have developed commercial uses mainly in strip and cluster development patterns. In these areas the emphasis has moved away from tourist-oriented uses toward uses to meet local commercial needs.

Map 6. 1990 Commercial Land Use Pattern



Industrial Land Use Pattern

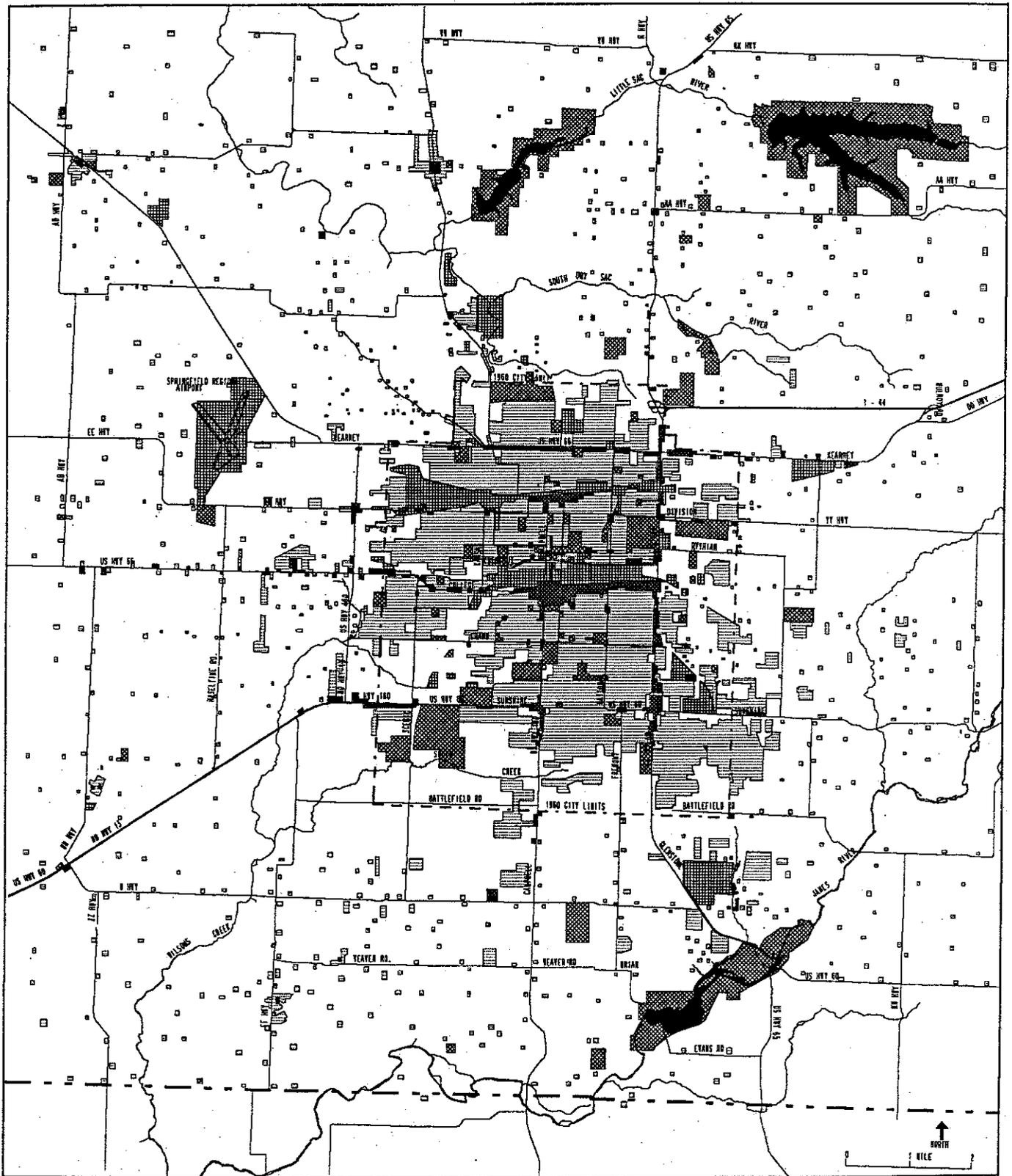
The largest concentration of industrial uses is in northeast Springfield, south of Kearney Street between Glenstone Avenue and U.S. Highway 65 (Map 7). Other concentrations exist between Chestnut Expressway and Park Central between Glenstone and Kansas Expressway; along the Burlington-Northern rail lines north of Division Street and west of Kansas Expressway, and in southwest Springfield along Battlefield Road. These concentrations have developed because of their proximity to highway and rail access. Other factors influencing their location are the availability of large tracts of appropriately zoned land and the availability of sanitary sewers, water, fire protection, and support services such as trucking firms, printing firms and machine shops.

Other Land Use Patterns

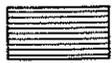
Several changes in the categorization of certain land uses created notable shifts in the acreage totals for 1990. The Springfield Regional Airport had an 80 acre portion of its property classified as vacant in 1980 which was reclassified as utility in 1990. Similarly, cemeteries throughout the study area were classified in 1980 as quasi-public uses but were counted as public acreage for the 1990 land use survey. In this particular case, the acreage for cemetery uses was shifted in the 1980 totals to reduce the inconsistency in the figures when comparing 1980 and 1990.

The development of parks within Springfield has occurred in two distinct patterns and is also divided into north and south. In northern Springfield, the parks are generally smaller than those in southern Springfield, but they are more numerous and often incorporate a wide variety of uses such as passive recreation areas, playground equipment, and active sports areas. In southern Springfield, parks are less numerous but of larger acreages and quite often tend to serve community or regional needs rather than neighborhood needs. Examples in south Springfield are a golf course, a softball complex, and a tennis complex.

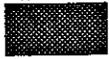
These distinct patterns in park development and residential uses emerge essentially because of age. Northern Springfield contains most of the older development while a large portion of the development in the southern half has occurred within the past twenty years. A comparison of existing land use in 1961 to that of 1990 shows that much of the development north of Jordan Creek was in place in 1961 (Map 8). The difference between the northern and



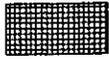
Map 8. 1961 Existing Land Uses



Residential



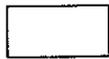
Commercial & Office



Industrial & Utility



Community



Agricultural & Undeveloped

southern development patterns within the city reflects neighborhoods in transition, changes in the transportation network, and changes in development philosophy over the past twenty years.

Quantitative Analysis

The existing land use map provides a picture of the current development pattern for the study area, but it does not tell us how much land is used for different land use types. A quantitative analysis of existing land use provides development ratios by land use type and is extremely important when preparing an analysis of future land needs. This analysis provides land use data by three levels of detail:

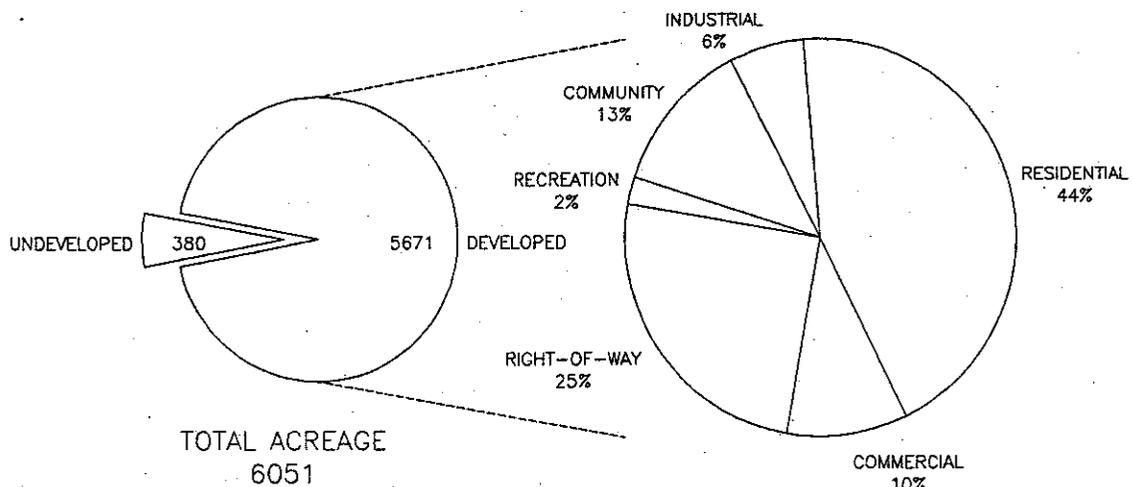
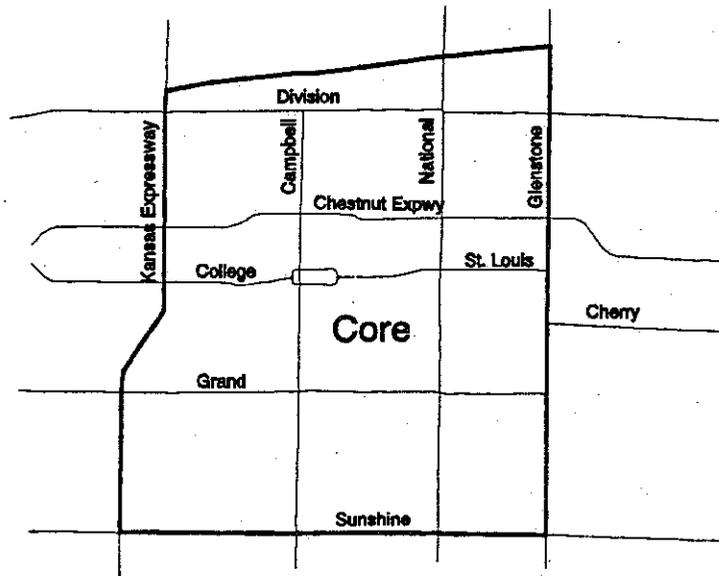
- Data Summary Subareas
- City of Springfield
- Study Area Outside of Springfield

Data Summary Subareas

The following summaries highlight some of the dominant activities of each of the thirteen Data Summary Subareas (Map 3).

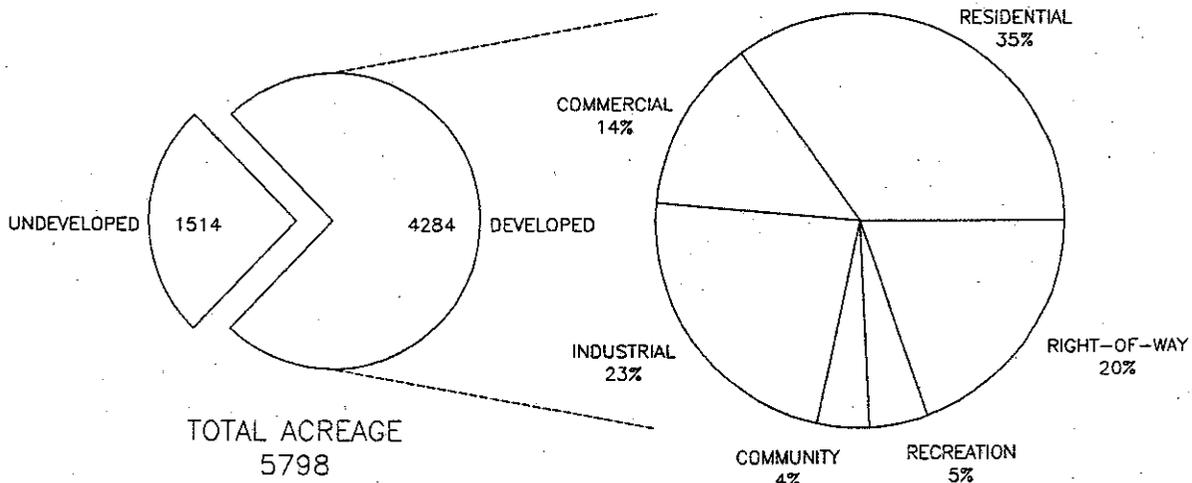
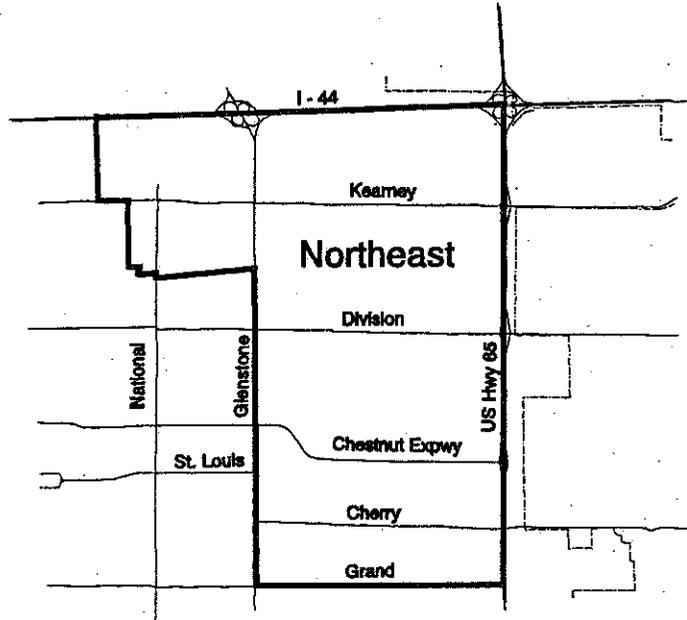
Core

The Core subarea is the most heavily developed subarea in the study area. The subarea is comprised of 6,051 acres of which 94% (5,671 acres) is developed and 6% (380 acres) is undeveloped. Residential development comprises 44% (2,496 acres) of the total developed land in the core. Single-family residential is the major constituent within the residential category with 2,168 developed acres. The community category comprises 13% (712 acres) of the total developed land in the core. Within the community category education is the major land use with 428 developed acres. Acreages for each land use category are shown on Table 4A.



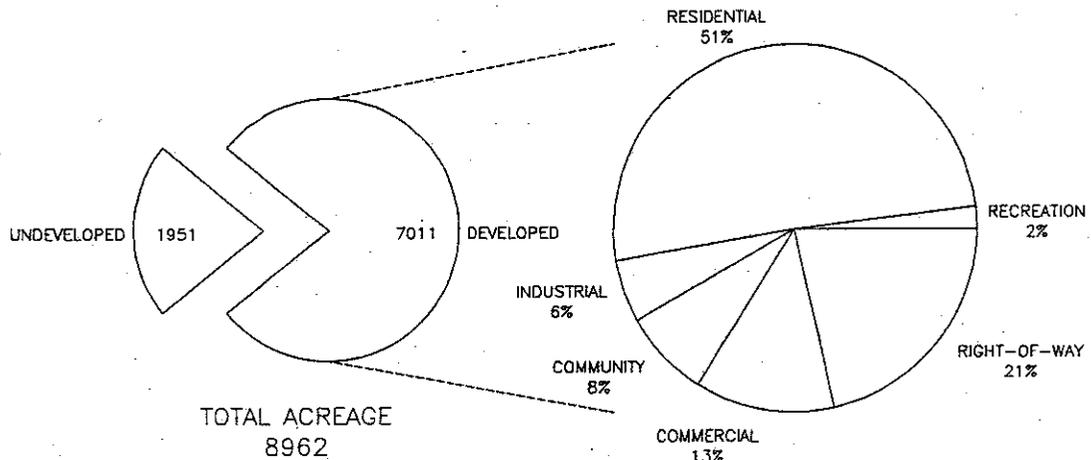
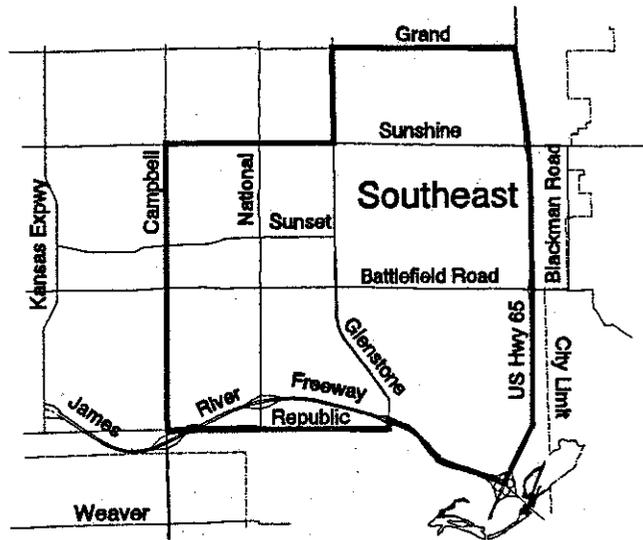
Northeast

The Northeast subarea is comprised of 5,798 acres and is 74% (4,284 acres) developed and 26% (1,514 acres) undeveloped. The majority of the developed portion of the subarea is in the residential category. Residential development comprises 35% (1,494 acres) of total developed land. Single-family is the major constituent of this category comprising 32% (1,357 acres) of its development. The industrial category comprises 23% (982 acres) of total developed land within the subarea with manufacturing as the major activity within the category. Acreages for each land use category are shown on Table 4A.



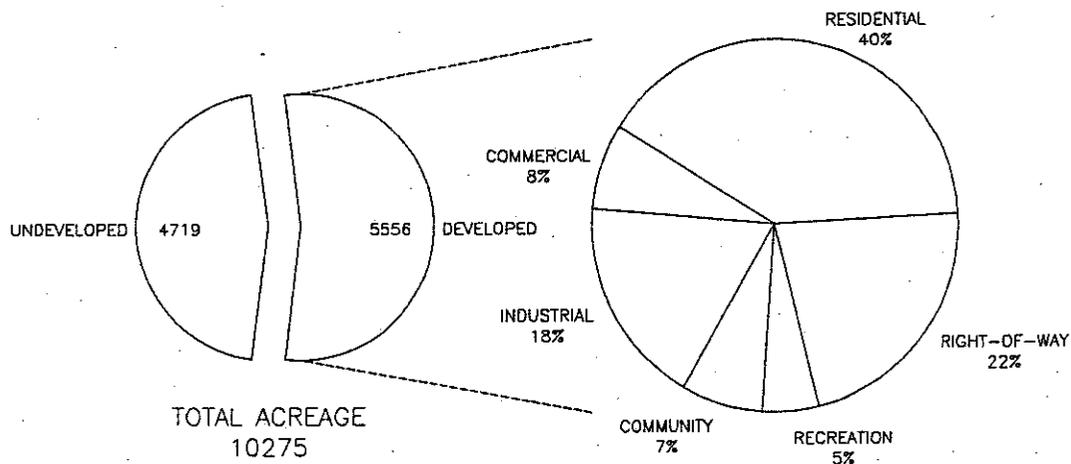
Southeast

The Southeast subarea is comprised of 8,962 acres of which 78% (7,011 acres) is developed and 22% (1,951 acres) is undeveloped. Residential activity comprises 51% (3,581 acres) of total developed land in the subarea. Single-family land use comprises 90% (3,223 acres) of the residential category. Commercial activities comprise 13% (888 acres) of the total developed land in the subarea. Most of the commercial activity is light commercial. Acreages for each land use category are shown on Table 4A.



Southwest

The Southwest subarea is comprised of 10,275 acres of which 54% (5,556 acres) is developed and 46% (4,719 acres) is undeveloped. The residential category comprises 40% (2,235 acres) of total developed land within the Southwest subarea. The industrial category comprises 18% (999 acres) of total developed land with a major portion of this in utilities. Acreages for each land use category are shown on Table 4A.



Northwest

The Northwest subarea is comprised of 6,223 acres of which 79% (4,930 acres) is developed and 21% (1,293) is undeveloped. The major land use activity in the area is residential, comprising 49% (2,400 acres) of all developed land. The next major activity occupying the area is industrial with 601 acres in use, 12% of all developed land in the subarea. Acreages for each land use category are shown on Table 4A.

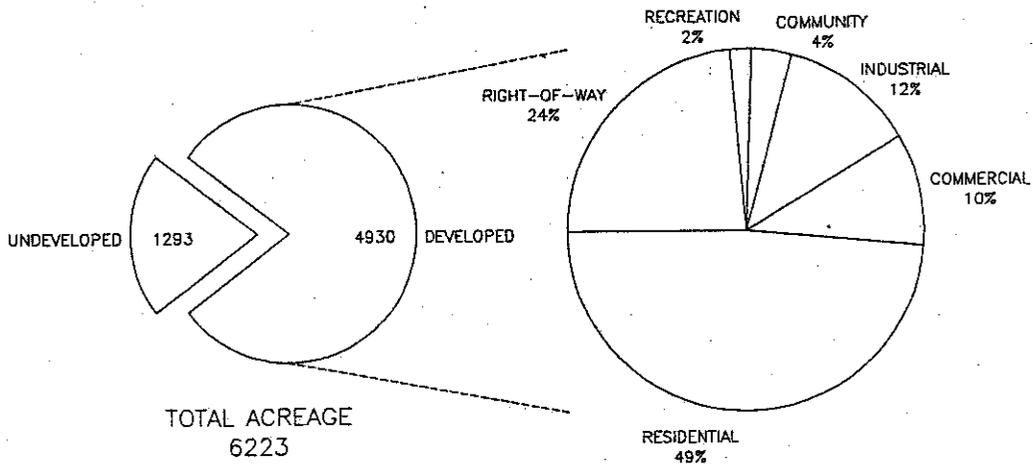
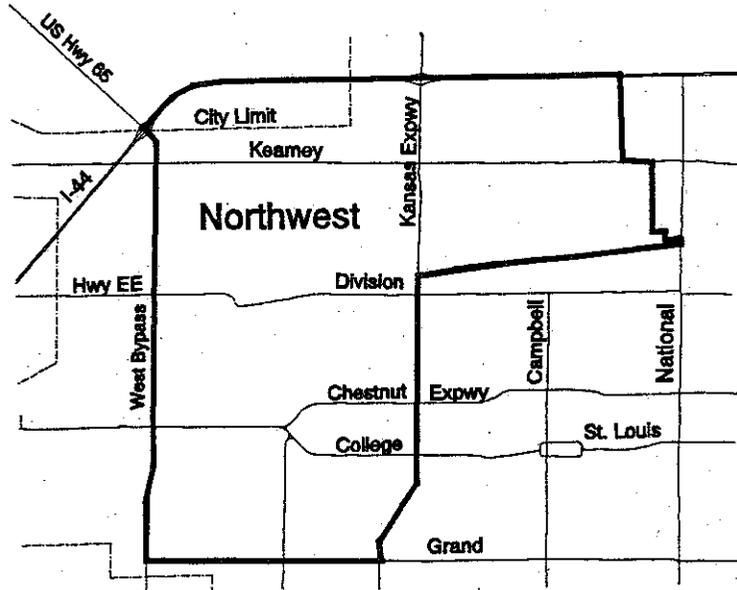
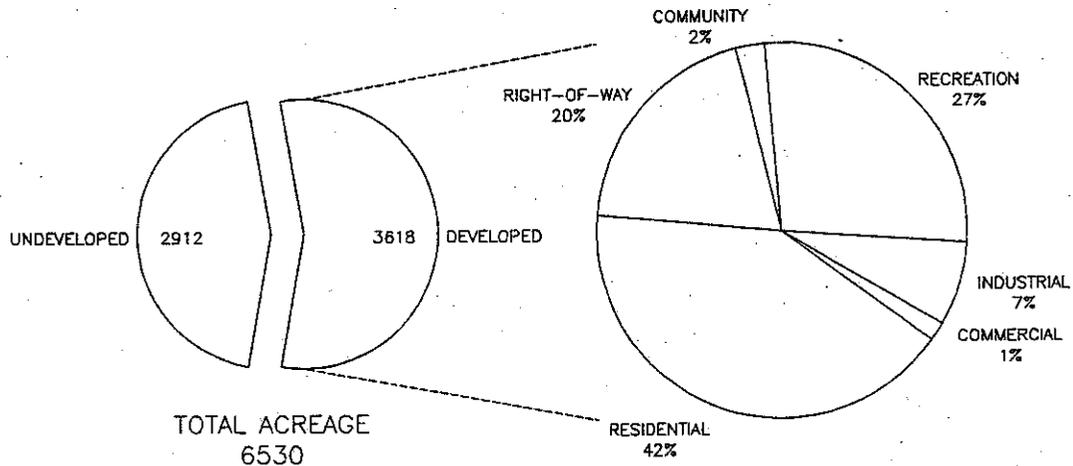
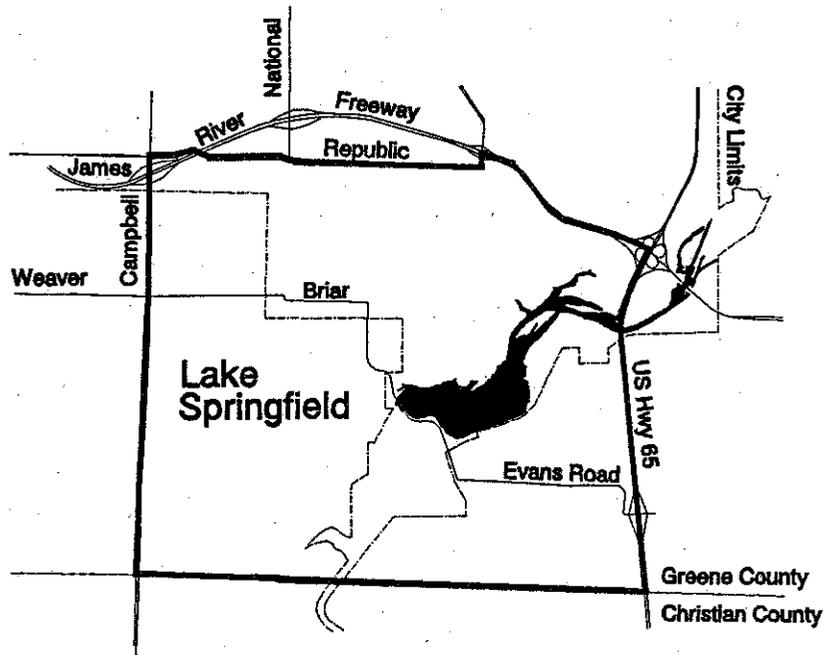


Table 4A
1990 Land Use Summary by Subarea

Land Use Category	Areas in Acres (Percent)									
	Core		Northeast		Southeast		Southwest		Northwest	
Total Residential	2496	(44.0)	1494	(34.9)	3581	(51.1)	2235	(40.2)	2400	(48.7)
One Family	2168	(38.2)	1357	(31.7)	3223	(46.0)	1978	(35.6)	2257	(45.8)
Two Family	95	(1.7)	36	(0.8)	113	(1.6)	87	(1.6)	19	(0.4)
Multi-family	215	(3.8)	71	(1.7)	183	(2.6)	52	(0.9)	42	(0.8)
Mobile Home Parks	0	(0.0)	22	(0.5)	50	(0.7)	117	(2.1)	67	(1.4)
Group Quarters	17	(0.3)	8	(0.2)	12	(0.2)	1	(0.0)	15	(0.3)
Total Commercial	568	(10.0)	590	(13.8)	888	(12.7)	422	(7.6)	485	(9.8)
Light Commercial	244	(4.3)	263	(6.1)	492	(7.0)	161	(2.9)	144	(2.9)
Heavy Commercial	235	(4.1)	228	(5.3)	106	(1.5)	221	(4.0)	330	(6.7)
Office	89	(1.6)	99	(2.3)	290	(4.2)	40	(0.7)	11	(0.2)
Total Industrial	346	(6.1)	982	(22.9)	394	(5.6)	999	(18.0)	601	(12.2)
Extractive	14	(0.2)	0	(0.0)	266	(3.8)	0	(0.0)	6	(0.1)
Warehousing and wholesaling	132	(2.3)	320	(7.5)	28	(0.4)	78	(1.4)	33	(0.7)
Transportation communications and utilities	77	(1.3)	266	(6.2)	9	(0.1)	736	(13.2)	381	(7.7)
Manufacturing	123	(2.2)	396	(9.2)	91	(1.3)	185	(3.3)	181	(3.7)
Total Community	712	(12.6)	186	(4.3)	535	(7.6)	406	(7.3)	179	(3.6)
Education	428	(7.5)	28	(0.6)	169	(2.4)	125	(2.2)	87	(1.8)
Public	132	(2.3)	96	(2.2)	87	(1.2)	206	(3.7)	9	(0.2)
Hospitals	25	(0.4)	25	(0.6)	123	(1.8)	3	(0.1)	17	(0.3)
Quasi-Public	127	(2.3)	37	(0.9)	156	(2.2)	72	(1.3)	66	(1.3)
Total Recreation	133	(2.3)	196	(4.6)	118	(1.7)	269	(4.8)	101	(2.0)
Right-of-Way	1416	(25.0)	837	(19.5)	1495	(21.3)	1225	(22.0)	1164	(23.6)
Total Developed	5671	(93.7)	4284	(73.9)	7011	(78.2)	5556	(54.1)	4930	(79.3)
Total Undeveloped	380	(6.3)	1514	(26.1)	1951	(21.8)	4719	(45.9)	1293	(20.7)
Total Acreage	6051	(100.0)	5798	(100.0)	8962	(100.0)	10275	(100.0)	6223	(100.0)

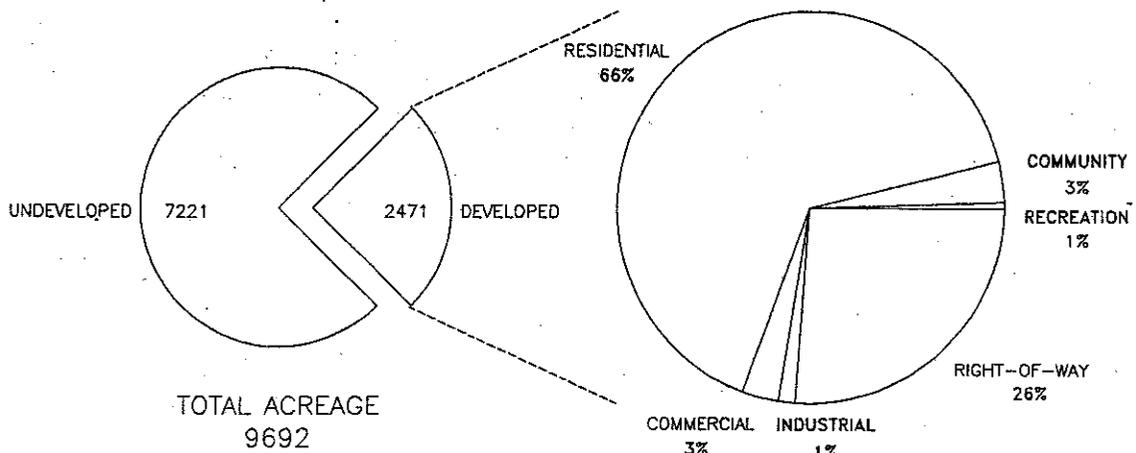
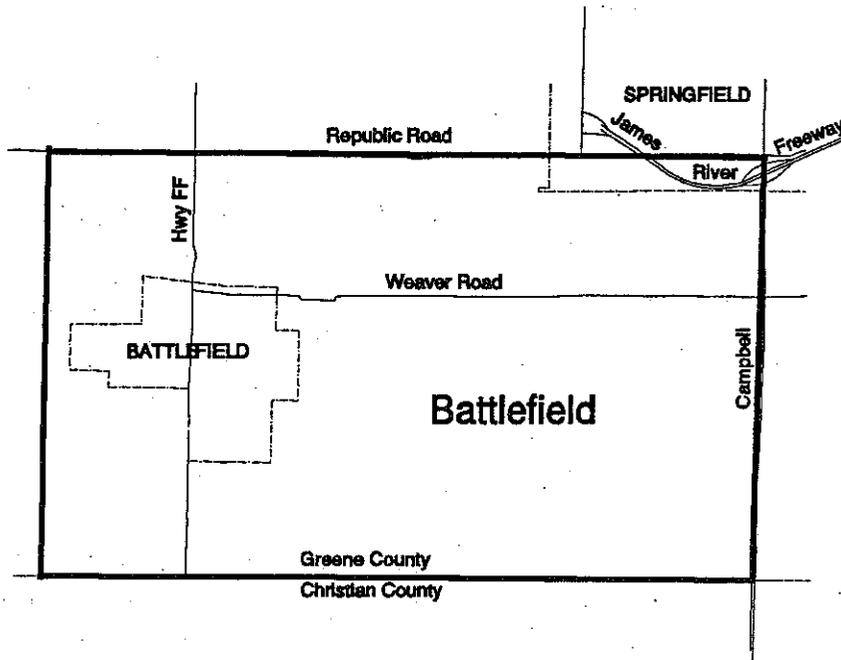
Lake Springfield

The Lake Springfield subarea consists of 6,530 acres of which 55% (3,618 acres) is developed and 45% (2,912 acres) is undeveloped. The major land use in the subarea is residential which comprises 42% (1,510 acres) of all developed land. The next predominant land use is industrial which makes up 7% (266 acres) of all developed land in the subarea. Acreages for each land use category are shown on Table 4B.



Battlefield

The Battlefield subarea consists of 9,692 acres of which 25% (2,471 acres) is developed and 75% (7,221 acres) is undeveloped. The major land use within the subarea is residential which comprises 66% (1,625 acres) of all developed land in the subarea. Community activity is the next most prominent land use in this area encompassing 3% (266 acres) of all developed land in the subarea. Acreages for each land use category are shown on Table 4B.



West

The West subarea is the least developed subarea within the study area. The total acreage for the subarea is 23,422 with only 19% (4,573 acres) of it developed and 81% (18,849 acres) undeveloped. The major activities of the area are residential, industrial and commercial. Residential land use comprises 36% (1,660 acres) of all developed land; industrial land use encompasses 6% (270 acres) of all developed land; and commercial use is 5% (212 acres) of all developed land within the subarea. Acreages for each land use category are shown on Table 4B.

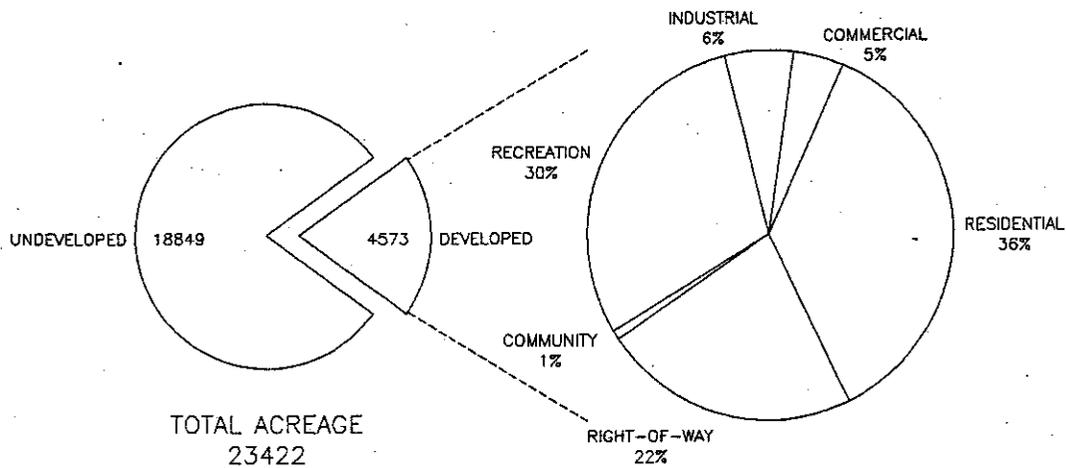
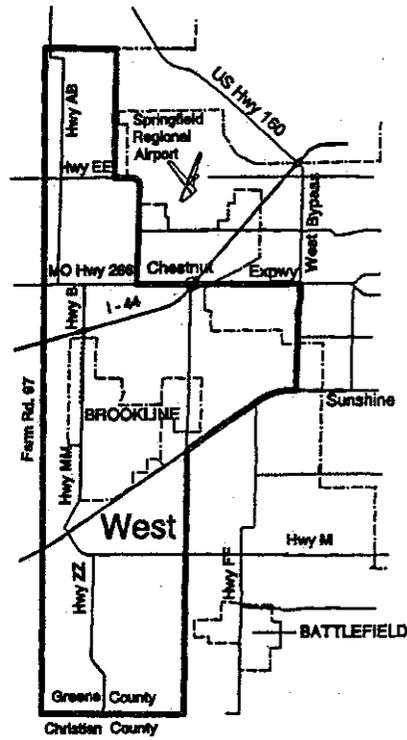
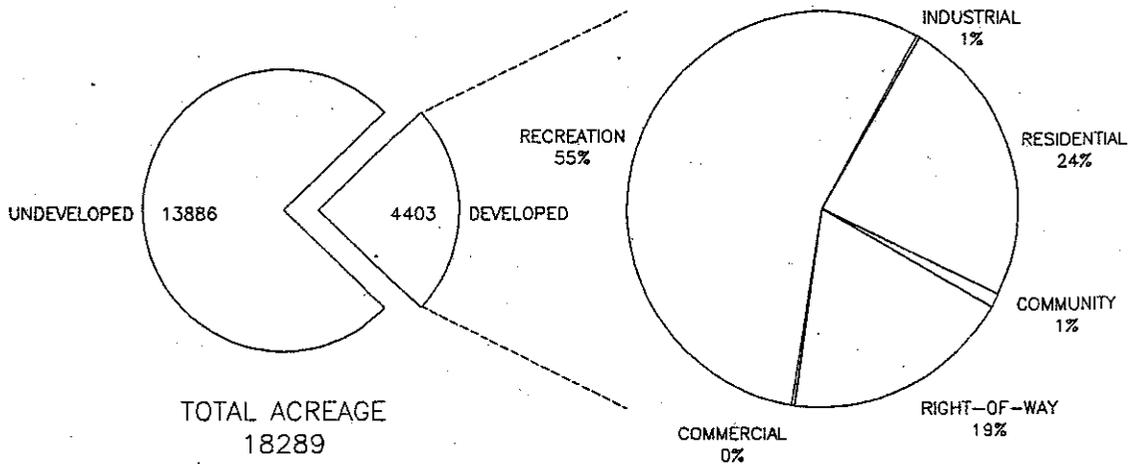
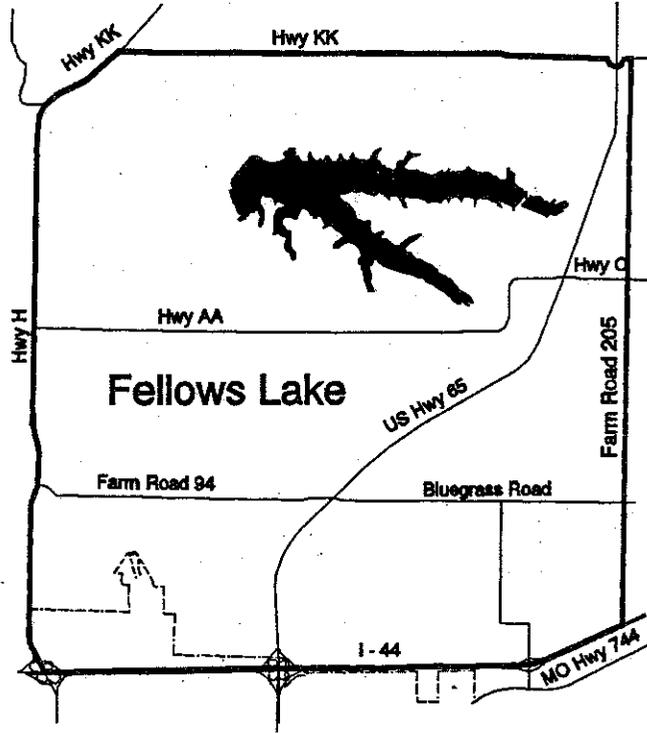


Table 4B
1990 Land Use Summary by Subarea

Land Use Category	Area in Acres (Percent)							
	East		Lake Springfield		Battlefield		West	
Total Residential	2987	(56.4)	1510	(41.7)	1625	(65.8)	1660	(36.3)
One Family	2917	(55.1)	1434	(39.6)	1602	(64.8)	1576	(34.5)
Two Family	13	(0.2)	41	(1.1)	15	(0.6)	4	(0.1)
Multi-family	34	(0.6)	10	(0.3)	8	(0.3)	0	(0.0)
Mobile Home Parks	22	(0.4)	13	(0.4)	0	(0.0)	80	(1.7)
Group Quarters	1	(0.0)	12	(0.3)	0	(0.0)	0	(0.0)
Total Commercial	168	(3.2)	44	(1.2)	74	(3.0)	212	(4.6)
Light Commercial	46	(0.9)	18	(0.5)	25	(1.0)	34	(0.7)
Heavy Commercial	114	(2.2)	21	(0.6)	39	(1.6)	178	(3.9)
Office	8	(0.1)	5	(0.1)	10	(0.4)	0	(0.0)
Total Industrial	363	(6.8)	266	(7.3)	31	(1.3)	270	(5.9)
Extractive	75	(1.4)	0	(0.0)	0	(0.0)	0	(0.0)
Warehousing and wholesaling	26	(0.5)	1	(0.0)	8	(0.3)	29	(0.6)
Transportation communications and utilities	165	(3.1)	265	(7.3)	15	(0.6)	238	(5.2)
Manufacturing	97	(1.8)	0	(0.0)	8	(0.3)	3	(0.1)
Total Community	67	(1.3)	90	(2.5)	80	(3.2)	43	(0.9)
Education	30	(0.6)	25	(0.7)	18	(0.7)	0	(0.0)
Public	3	(0.1)	2	(0.1)	5	(0.2)	10	(0.2)
Hospitals	0	(0.0)	1	(0.0)	0	(0.0)	0	(0.0)
Quasi-Public	34	(0.6)	62	(1.7)	57	(2.3)	33	(0.7)
Total Recreation	551	(10.4)	991	(27.4)	13	(0.5)	1362	(29.8)
Right-of-Way	1163	(21.9)	717	(19.8)	648	(26.2)	1026	(22.4)
Total Developed	5299	(25.2)	3618	(55.4)	2471	(25.5)	4573	(19.5)
Total Undeveloped	15720	(74.8)	2912	(44.6)	7221	(74.5)	18849	(80.5)
Total Acreage	21019	(100.0)	6530	(100.0)	9692	(100.0)	23422	(100.0)

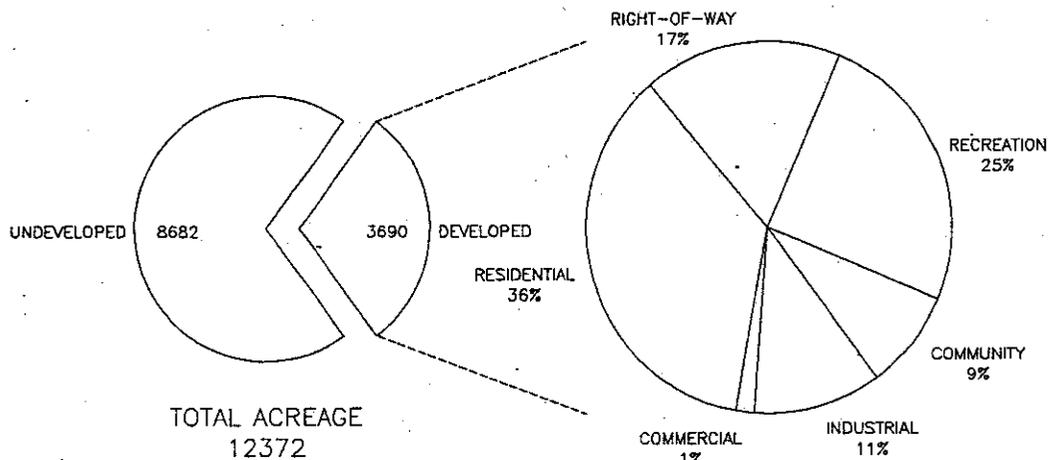
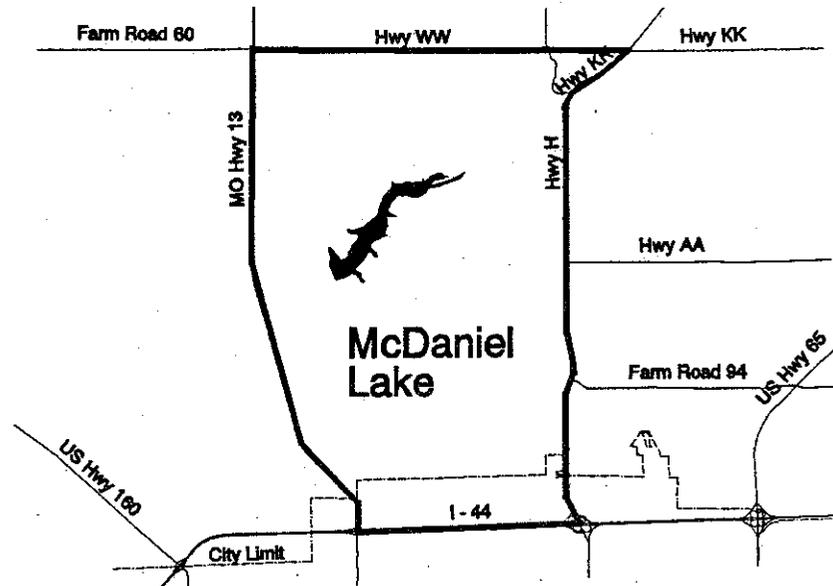
Fellows Lake

Fellows Lake subarea consists of 18,289 acres of which 24% (4,403 acres) is developed and 76% (13,886 acres) is undeveloped. The largest portion of developed land is in recreation which comprises 55% (2,426 acres) of all developed land in the subarea. The next major land use is residential comprising 24% (1,050 acres) of all developed land in the area. Acreages for each land use category are shown on Table 4C.



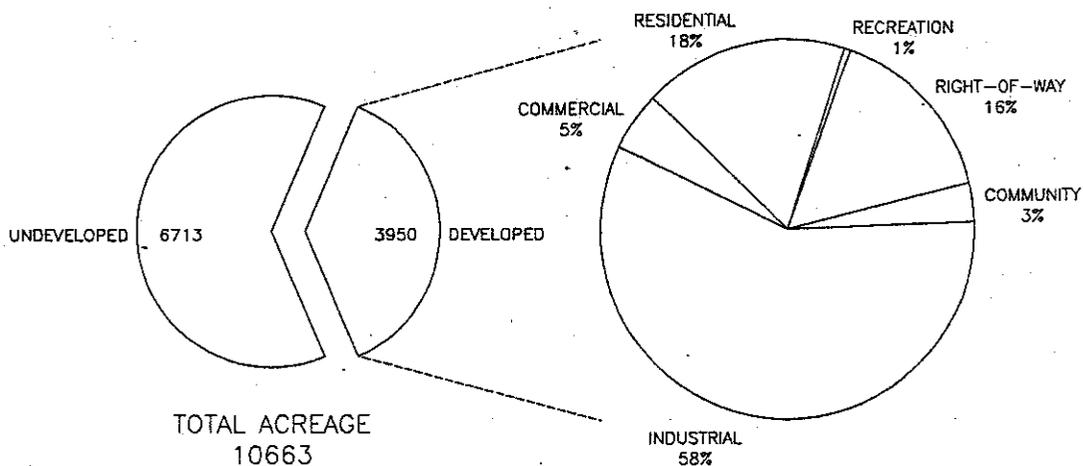
McDaniel Lake

The total acreage for the McDaniel Lake subarea is 12,372 acres of which 30% (3,690 acres) is developed and 70% (8,682 acres) is undeveloped. Residential development comprises the largest portion of developed land at 36% (1,337 acres). Recreation is the next predominant land use at 25% (934 acres) of all developed land. Acreages for each land use category are shown on Table 4C.



Airport

The Airport subarea consists of 10,663 acres of which 37% (3,950 acres) is developed and 63% (6,713 acres) is undeveloped. The industrial development area is the major land use in the subarea comprising 58% (2,274 acres) of all developed land. This figure can be somewhat misleading in that 99% of that (2,246 acres) is for municipal airport use. Acreages for each land use category are shown on Table 4C.



Willard

The Willard subarea is another area that has very little development. The total acreage for the subarea is 16,327 and only 20% (3,229 acres) is developed and 80% (13,098 acres) is undeveloped. The major land use activity in the area is residential comprising 30% (963 acres) of all the developed land. Industrial activity is also a dominant land use comprising 24% (758 acres) of all developed land. Acreages for each land use category are shown on Table 4C.

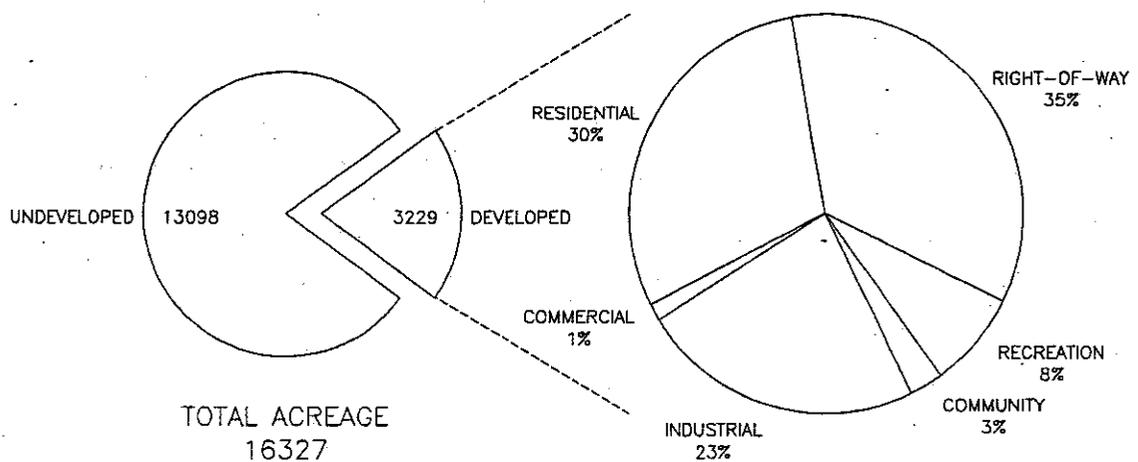
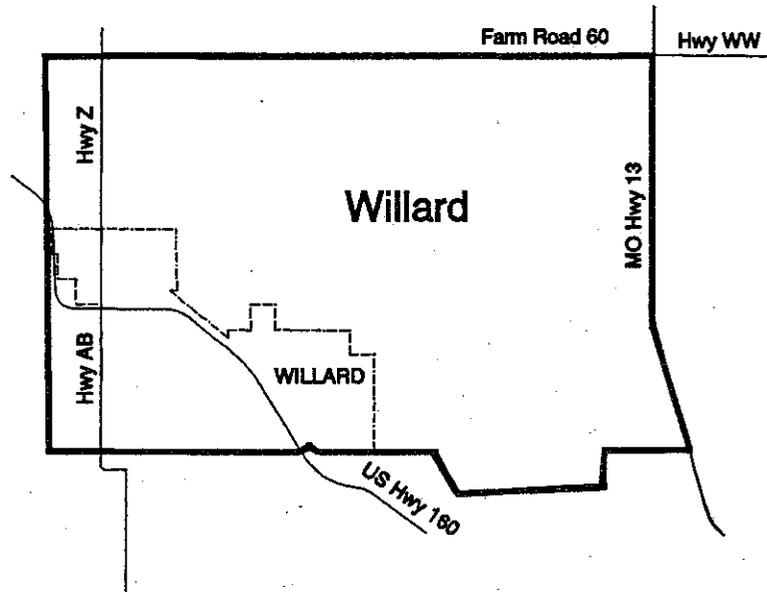


Table 4C
1990 Land Use Summary by Subarea

Land Use Category	Area in Acres (Percent)							
	Fellows Lake		McDaniel Lake		Airport		Willard	
Total Residential	1050	(23.8)	1337	(36.2)	713	(18.0)	963	(29.8)
One Family	1041	(23.6)	1265	(34.3)	679	(17.2)	948	(29.3)
Two Family	0	(0.0)	10	(0.2)	1	(0.0)	0	(0.0)
Multi-family	0	(0.0)	45	(1.2)	2	(0.1)	9	(0.3)
Mobile Home Parks	9	(0.2)	6	(0.2)	30	(0.7)	6	(0.2)
Group Quarters	0	(0.0)	11	(0.3)	0	(0.0)	0	(0.0)
Total Commercial	13	(0.3)	55	(1.5)	187	(4.7)	40	(1.2)
Light Commercial	5	(0.1)	29	(0.8)	18	(0.4)	25	(0.8)
Heavy Commercial	8	(0.2)	18	(0.5)	164	(4.2)	8	(0.2)
Office	0	(0.0)	8	(0.2)	5	(0.1)	7	(0.2)
Total Industrial	30	(0.7)	405	(11.0)	2274	(57.6)	758	(23.5)
Extractive	14	(0.4)	0	(0.0)	0	(0.0)	351	(10.9)
Warehousing and wholesaling	1	(0.0)	3	(0.1)	34	(0.9)	23	(0.7)
Transportation communications and utilities	0	(0.0)	388	(10.5)	2153	(54.5)	380	(11.8)
Manufacturing	15	(0.3)	14	(0.4)	87	(2.2)	4	(0.1)
Total Community	50	(1.1)	321	(8.7)	136	(3.4)	84	(2.6)
Education	24	(0.5)	163	(4.4)	35	(0.9)	54	(1.7)
Public	17	(0.4)	101	(2.7)	80	(2.0)	10	(0.3)
Hospitals	0	(0.0)	19	(0.5)	0	(0.0)	0	(0.0)
Quasi-Public	9	(0.2)	38	(1.1)	21	(0.5)	20	(0.6)
Total Recreation	2426	(55.1)	934	(25.3)	22	(0.6)	258	(8.0)
Right-of-Way	834	(18.9)	638	(17.3)	618	(15.6)	1126	(34.9)
Total Developed	4403	(24.1)	3690	(29.8)	3950	(37.0)	3229	(19.8)
Total Undeveloped	13886	(75.9)	8682	(70.2)	6713	(63.0)	13098	(80.2)
Total Acreage	18289	(100.0)	12372	(100.0)	10663	(100.0)	16327	(100.0)

City of Springfield

The City of Springfield has grown from 41,229 acres in 1980 to 43,123 acres in 1990. This is a growth of 5% (1,894 acres), a majority of which is due to the annexation of 1,046 acres for the Springfield Regional Airport. Another large portion of the growth is due to the annexation of several developments which were located outside the city limits in 1980.

Springfield's developed land increased from 28,427 acres in 1980 to 33,122 acres in 1990, an increase of 16.5%. Concurrently, the amount of undeveloped land in Springfield decreased from 12,802 acres in 1980 to 10,001 acres in 1990. The percentage of undeveloped land in Springfield dropped from 31.1% to 23.2%.

By comparing the following categories from 1980-1990 a view of the increase and decline in specific land use categories can be examined. For a more thorough illustration see Figures 14 and 15 and Table 7.

Residential

Residential development within the City of Springfield comprised about 12,068 acres of total developed land in 1980 as compared to 13,207 acres in 1990. Currently, single-family residential comprises the largest portion of development throughout the City of Springfield with 11,910 acres developed.

Industrial

Industrial activity experienced the greatest change over the past ten years with 1,578 more acres in 1990 -- a 42% increase in industrial land since 1980. The largest portion of industrial development is in the transportation and communication category. The transportation and communication category consists of 3,307 acres in 1990, 62% of the total acreage within the category.

Commercial

Springfield's commercial acreage has increased by 44% since 1980. The total acreage for this category in 1990 is 3,209 acres. The largest portion of development is in light commercial which in 1990 comprises 42% (1,373 acres) of the entire category's acreage. The light commercial category is followed by heavy commercial with 1,293 acres (40% of the commercial land use in 1990).

Table 5
Comparative Land Use Trends: 1980-1990
City of Springfield

Land Use Category	Survey Year				Change 1980-1990	
	1980		1990		Land Use	
	Acres	% of Total	Acres	% of Total	Acres	% Change
Residential	12,068	(29.3%)	13,207	(30.6%)	1,139	9.4%
Commercial	2,228	(5.4%)	3,209	(7.4%)	981	44.0%
Industrial	3,725	(9.0%)	5,303	(12.3%)	1,578	42.4%
Community and Recreation	3,645	(8.8%)	4,410	(10.2%)	765	21.0%
Right-of-Way	6,761	(16.4%)	6,993	(16.2%)	232	3.4%
Developed Land	28,427	(68.9%)	33,122	(76.8%)	4,695	16.5%
Undeveloped Land	12,802	(31.1%)	10,001	(23.2%)	-2,801	-21.9%
Totals	41,229 Acres 64.42 Sq. Mi.		43,123 Acres 67.38 Sq. Mi.		4.6%	

Figure 29. City of Springfield 1980 Land Use Data

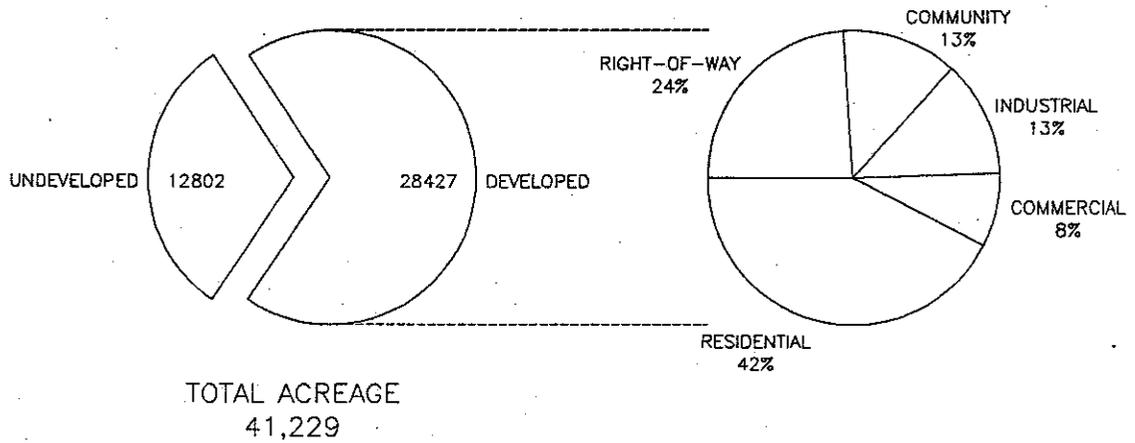
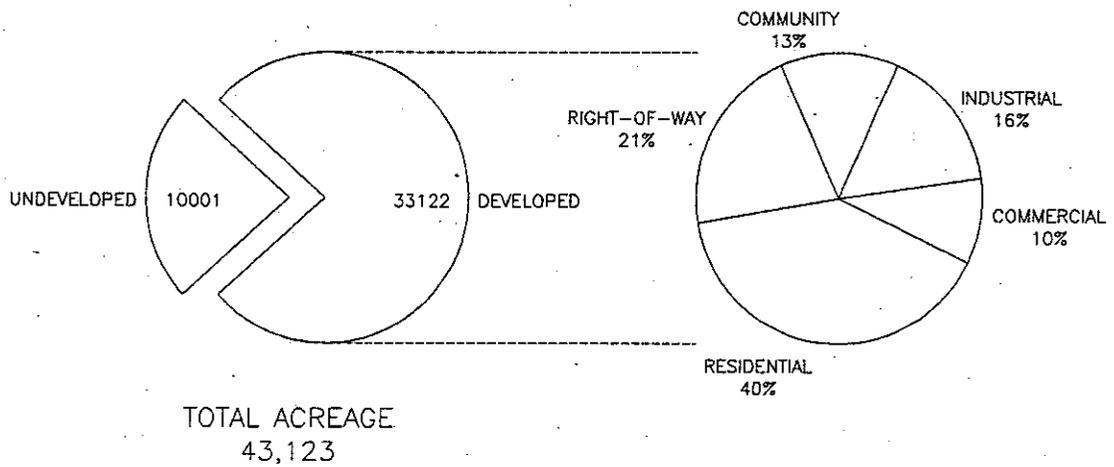


Figure 30. City of Springfield 1990 Land Use Data



Community/Recreation

Community and recreation has grown from 3,645 acres in 1980 to 4,410 acres in 1990, an increase of 21%. The majority of the acreage in this category is in recreation which comprises 42% (2,123 acres) of the total acreage within the community/recreation category. The next major constituent is in the education category. Education now comprises 1,026 acres of the community/recreation category.

Study Area Outside of Springfield

The portion of the study area outside the Springfield corporate limits was comprised of 115,663 acres in 1980 and 112,503 acres in 1990, a decrease of 3% (3,160 acres). The reason for the decrease in acreage from 1980 to 1990 is due to the annexations that have occurred within the City of Springfield during the past ten years.

This area, for 1990, is comprised of 25,566 acres of developed land and 86,937 acres of undeveloped land. The amount of developed land in the study area outside of Springfield has increased by 31% (6,081 acres) since 1980. Concurrently, the amount of undeveloped land in the area has decreased by 10% (9,241 acres) since 1980.

The following categories have been briefly examined to show what types of activities are occurring in the study area. For a more thorough illustration of the occurrences in the area see Figures ¹⁶ and ³¹ ~~17~~ and Table 8. ⁶ ₃₂

Residential

The total amount of acreage for 1990 within the residential category is 10,843 acres, an increase of 71% (4,493 acres) since 1980. The overwhelming majority of this growth has been seen in the single-family category which has expanded to 10,535 acres since 1980.

Commercial

Commercial activity has increased from 293 acres in 1980 to 537 acres in 1990, an increase of 83%. The major portion of commercial activity is seen in the heavy commercial category, with 377 acres developed. This category's major constituent is light commercial which has 132 acres developed. Office activity comprises the least amount of acreage for all commercial activities.

Industrial

Industrial acreage for 1980 was 1,752 and by 1990 expanded to 2,417 acres, showing an increase of 38%. The recent trends in industrial activities show that the transportation and communication category is

at the top of the category with 1,766 acres developed. The extractive category is the next major activity with 440 acres developed.

Community/Recreation

The community and recreation activities have increased from 5,453 acres in 1980 to 5,852 acres in 1990. The largest portion of the activities are in recreation. Recreation provides 5,249 acres in the remainder of the study area. The rest of the acreage is spread rather equally through the categories of education, public, and quasi-public.

Figure 31. Remainder of Study Area 1980 Land Use Data

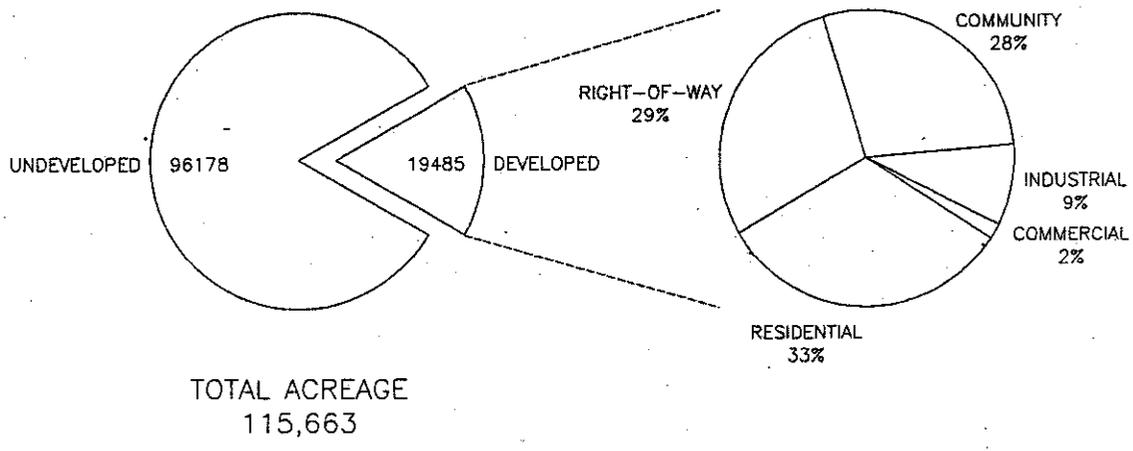
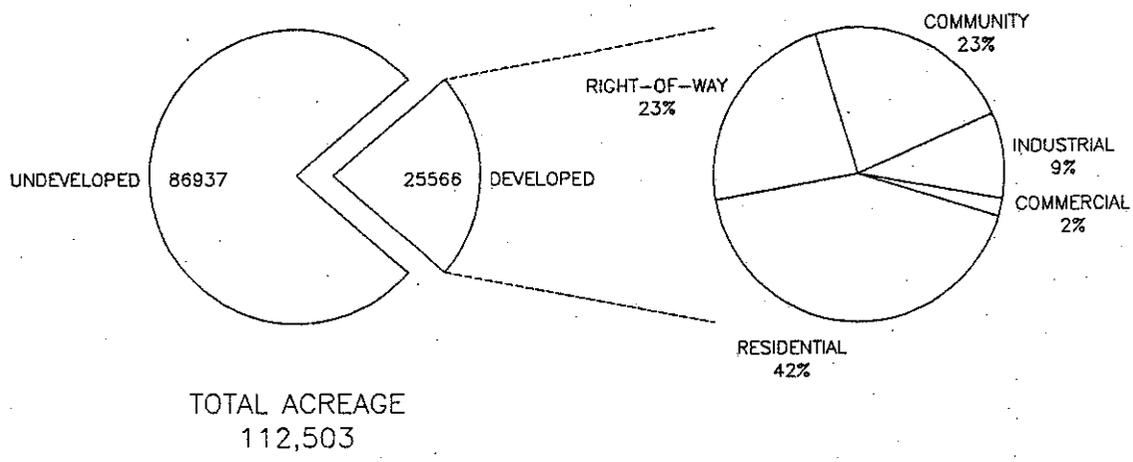


Figure 32. Remainder of Study Area 1990 Land Use Data



*Table 6
Comparative Land Use Trends: 1980-1990
Study Area Outside of Springfield*

Land Use Category	Survey Year				Change 1980-1990	
	1980		1990		Land Use Acres	% Change
	Acres	% of Total	Acres	% of Total		
Residential	6,350	(5.5%)	10,843	(9.6%)	4,493	70.8%
Commercial	293	(0.3%)	537	(0.5%)	244	83.3%
Industrial	1,752	(1.5%)	2,417	(2.1%)	665	38.0%
Community and Recreation	5,453	(4.7%)	5,852	(5.2%)	399	7.3%
Right-of-Way	5,637	(4.9%)	5,916	(5.3%)	279	4.9%
Developed Land	19,485	(16.9%)	25,566	(22.7%)	6,081	31.2%
Undeveloped Land	96,178	(83.1%)	86,937	(77.3%)	-9,241	-9.6%
Totals	115,663 Acres 180.7 Sq. Mi.		112,503 Acres 175.8 Sq. Mi.			-2.7%

Appendix A

Land Use Classification System

Category

Subcategories and Examples

Residential

Single-Family: Detached single-family houses; mobile homes on individual lots.

Two-Family: Duplexes.

Multi-Family: Apartments containing three or more dwelling units.

Mobile Home Park: Mobile homes located in mobile home parks. Mobile homes on individual lots are classified as single-family.

Group Quarters: Boarding houses; fraternities; dormitories; retirement homes; residential hotels; juvenile homes; nursing homes; religious quarters.

Commercial

Light Commercial: Retail and wholesale establishments selling: dairy products, auto parts, clothing, shoes, furniture, appliances, food, drugs, liquor, hardware, sporting goods, books, jewelry, luggage, etc.; bakeries, photographic studios and labs; beauty and barber shops; shoe repair; funeral homes; health clubs; repair services for appliances and watches; theatres; bowling alleys; hotels and motels; blueprint and photo copy services; restaurants.

Heavy Commercial: Motor vehicle sales and services; service stations; motorcycle sales and service; laundries and dry cleaners; carpet and upholstery cleaners; motor vehicle renting and leasing; car washes; building materials; lawn and garden shops; mobile home dealers; equipment rentals; commercial parking structures; agricultural products.

Office: Banks and banking services; credit agencies; insurance agents; real estate sales; title and abstract offices; investment agencies; detective agencies, doctors and dentists offices; medical and dental laboratories; services such as: legal, architectural, engineering, surveying, accounting, tourist agencies, advertising, data processing, management.

Industrial

Extractive: Mining; crude oil and natural gas production; quarrying; cement plants; and related services.

Wholesaling, Storage and Warehousing: Truck terminals; truck warehouses; warehouses; wholesale trade establishments; automobile auctions.

Transportation, Communication, and Utilities: Railroad stations and yards; airports; transit services such as: airline, bus lines, taxi, school buses; transit maintenance services; telephone; telegraph; radio and television broadcasting; electric, gas, water, and sanitary sewer services.

Manufacturing: Production of new or reconditioned products such as: food and kindred products; textiles; apparel; lumber and wood products; paper products; chemicals and allied products; petroleum refining; rubber and plastics; glass and concrete products; metal products; machinery; equipment; instruments; medical goods.

Community

Educational and Cultural: All public and private schools, universities and educational services; museums; art galleries; zoos; historic sites.

Public: Social service agencies; job services; halfway houses; community action agencies; government offices; public health services; post offices; libraries; cemeteries.

Hospitals: Nursing homes; convalescent homes; hospitals; mental hospitals; medical rehabilitation centers; nursing homes sharing sites with hospitals.

Quasi-Public: Churches; business associations; labor unions; civic organizations; political organizations.

Recreational: Parks; golf courses; tennis courts; playgrounds; gymnasiums; fairgrounds; campgrounds; open space not available for development such as land around lakes.

Street and Railroad Rights-of-Way

Public and private streets, railroads, and rights-of-way.

Vacant

Vacant lots; vacant buildings; rural land not in residential, farm or pasture use.

Agricultural Land

Farmland (crops or trees); pastures; orchards.

Appendix B

Land Use Acreages by Census Tract

The following land use data are aggregated by census tract and are presented in two parts. The first part contains data for land uses from "Single-family" through "Warehouse." The second part contains data for land uses from "Utilities" to "Rights-of-Way." The land use data for the census tracts along the edge of the study area are only for the portions of the census tracts within the study area.

Census Tract	Single-Family	Two-Family	Multi-Family	Mobile Home Parks	Group Quarters	Light Commercial	Heavy Commercial	Office	Extraction	Warehouse
1.00	8.4	2.3	26.1	0.0	0.4	57.5	20.4	21.3	0.0	4.5
2.00	9.7	3.5	34.1	0.0	1.6	3.5	0.0	1.2	0.0	0.0
3.00	351.7	3.0	3.8	0.0	0.5	7.9	0.0	4.1	0.0	0.0
4.00	286.4	22.4	27.2	0.0	0.0	32.2	23.2	7.5	0.0	1.9
5.00	251.3	23.9	52.6	0.0	0.2	12.9	20.1	1.8	0.0	3.3
6.00	147.0	4.5	4.7	0.0	2.6	18.4	15.5	6.0	0.0	19.6
7.00	175.5	14.5	25.3	0.0	2.9	27.8	37.2	12.0	0.0	38.1
8.00	220.1	5.2	1.7	0.3	0.0	19.8	51.7	3.3	0.0	14.2
9.00	242.8	7.0	41.8	0.0	9.1	43.9	40.8	10.8	13.7	7.4
10.00	319.6	2.6	0.0	0.0	0.0	19.0	1.1	20.7	0.0	0.0
11.00	251.3	6.0	16.0	0.0	5.9	130.9	8.4	43.5	0.0	0.0
12.00	369.5	12.0	8.8	0.0	0.0	29.6	12.7	6.1	0.0	0.0
13.01	133.1	10.3	10.1	0.0	0.0	29.9	1.5	7.3	0.0	0.0
13.02	81.0	0.0	26.7	0.0	0.0	26.6	7.2	29.7	0.0	0.0
14.00	171.6	11.6	21.1	0.0	0.0	57.2	1.5	9.9	0.0	8.0
15.00	453.2	14.9	7.0	0.0	0.0	53.9	11.2	7.6	0.0	1.6
16.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
17.00	246.4	3.3	17.3	0.0	15.1	19.5	37.8	3.8	0.0	8.8
18.01	172.1	1.6	0.9	0.0	0.0	3.8	24.4	0.3	0.0	0.2
18.02	155.1	3.6	1.5	0.0	0.0	2.7	24.5	0.0	0.0	42.7
19.00	246.9	4.6	8.4	0.0	0.0	15.8	22.1	1.4	0.0	7.5
20.00	139.6	4.4	1.7	0.0	0.0	1.4	7.3	0.0	0.0	2.3
21.00	185.7	6.0	0.3	0.0	0.4	25.2	21.5	1.8	0.0	0.5
22.00	431.3	9.6	21.1	21.0	6.5	171.2	146.8	54.4	0.0	207.9
23.00	484.6	18.3	27.7	0.0	0.0	27.7	50.0	40.7	0.0	111.9
24.00	558.3	20.6	49.2	0.0	0.0	44.6	21.0	65.8	0.0	26.6
25.00	689.3	25.4	40.3	0.0	0.0	46.3	10.6	22.8	0.0	0.3
26.00	663.8	8.5	11.3	0.0	0.0	73.9	9.7	12.8	0.0	0.8
27.00	111.0	14.9	16.6	47.6	5.9	56.2	22.3	68.7	0.0	0.0
28.00	116.5	15.3	4.6	0.0	0.0	30.7	6.1	31.8	0.0	0.0
29.00	409.1	11.2	5.8	0.0	0.0	11.8	21.2	10.7	0.0	0.0
30.00	491.1	32.2	17.9	75.7	0.6	37.4	166.2	9.5	0.0	65.4
31.00	349.1	0.0	0.0	0.0	0.0	14.8	32.0	0.1	0.0	0.0
32.01	174.0	1.8	0.0	11.9	0.0	17.6	35.7	0.0	0.0	0.0
32.02	207.6	1.1	0.0	0.2	0.0	2.5	19.5	0.0	0.0	0.5

Census Tract	Single-Family	Two-Family	Multi-Family	Mobile Home Parks	Group Quarters	Light Commercial	Heavy Commercial	Office	Extraction	Warehouse
33.00	311.6	2.5	11.5	16.6	0.0	10.6	113.5	0.2	0.0	11.4
34.00	192.8	0.0	2.0	37.5	0.0	36.0	19.1	3.5	0.0	0.0
35.00	216.8	0.0	0.0	0.5	0.0	21.4	18.5	1.4	5.5	4.3
36.00	260.5	1.8	21.4	0.5	0.7	38.6	9.2	1.5	0.0	0.0
37.00	1,423.0	12.7	23.7	22.1	0.5	22.6	75.1	5.5	75.0	26.1
38.00	1,478.4	0.0	10.5	0.0	0.0	23.0	38.9	2.4	0.0	0.0
39.00	249.3	0.0	2.0	6.1	0.0	23.4	6.0	0.0	265.9	0.0
40.00	1,433.7	40.9	10.4	12.8	11.9	18.3	20.5	4.6	0.0	1.4
41.00	1,602.8	14.8	8.2	0.0	0.0	25.4	39.4	9.6	0.0	8.0
42.00	544.9	17.1	0.0	41.3	0.0	1.8	20.7	1.8	0.0	1.3
43.01	423.1	3.1	0.0	8.7	0.0	15.9	32.1	0.0	0.0	11.1
43.02	672.6	1.4	1.6	30.3	0.0	17.7	164.2	4.8	0.0	33.5
44.00	652.4	9.5	44.6	6.2	11.4	23.6	10.4	6.8	0.0	0.8
45.00	419.8	0.0	0.0	6.8	0.0	1.9	4.0	0.0	0.0	0.0
46.00	58.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.6	0.0
47.00	15.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
48.00	663.1	0.0	0.0	46.4	0.0	9.3	114.0	0.0	0.0	18.1
49.00	489.9	0.4	0.0	24.7	0.0	8.3	32.1	0.0	0.0	0.0
50.00	391.8	0.0	8.9	1.2	0.0	11.6	6.5	6.9	0.0	3.5
51.00	562.5	0.0	0.0	4.3	0.0	13.2	0.9	0.0	350.8	19.1
52.00	1,175.1	0.0	0.0	0.0	0.0	7.6	11.6	1.3	0.0	1.0
Totals	22,544.1	431.9	678.4	424.0	76.8	1,506.5	1,670.2	569.7	724.8	716.2

Census Tract	Utilities	Manufacturing	Education	Public	Hospitals	Quasi-Public	Outdoor Recreation	Agriculture	Vacant	Rights-of-way
1.00	6.0	3.4	19.3	24.9	3.8	10.8	0.8	0.0	12.0	83.8
2.00	0.7	0.0	137.8	9.4	0.0	0.0	0.0	0.0	1.5	35.4
3.00	0.0	0.0	21.5	5.4	0.0	45.5	33.5	0.0	10.1	172.9
4.00	5.7	0.0	52.8	11.8	0.0	0.7	27.7	7.0	177.0	132.3
5.00	0.2	5.8	1.2	6.1	1.4	3.0	16.2	0.0	31.0	140.1
6.00	12.1	47.8	9.8	25.7	0.0	14.7	13.3	0.0	36.0	165.4
7.00	11.4	24.1	70.4	17.2	19.5	24.5	25.6	0.0	25.2	0.0
8.00	10.0	18.5	106.1	6.5	0.0	29.6	14.9	0.0	42.3	129.9
9.00	1.5	14.4	4.1	8.7	0.0	2.9	0.3	0.0	13.1	79.5
10.00	0.0	0.0	4.3	8.0	0.0	0.0	0.0	0.0	5.6	113.4
11.00	0.0	0.0	0.0	7.2	59.0	76.2	44.2	0.0	11.7	102.0
12.00	0.2	0.0	8.5	8.1	1.3	0.9	0.8	0.0	58.8	131.9
13.01	0.4	0.0	11.7	0.0	0.0	0.0	0.0	0.0	67.1	71.9
13.02	0.0	0.3	0.0	0.0	6.6	0.0	1.4	0.0	60.2	68.6
14.00	0.0	0.0	0.0	12.2	2.6	0.0	0.0	0.0	310.3	110.7
15.00	0.7	0.0	10.1	5.3	0.0	0.6	0.2	0.0	44.9	156.3
16.00	0.0	0.0	90.6	0.0	0.0	200.9	58.6	21.3	0.0	56.3
17.00	14.0	13.9	5.9	12.1	0.0	7.8	10.3	0.0	50.8	148.1
18.01	1.0	29.6	3.1	8.0	0.0	0.0	16.1	0.0	24.2	91.6
18.02	29.0	8.4	0.0	2.7	0.0	0.0	0.0	0.0	17.6	138.3
19.00	0.0	4.0	8.7	6.3	0.0	0.4	0.0	0.0	3.9	191.5
20.00	50.1	0.2	27.7	4.3	0.0	0.0	4.3	0.0	2.4	87.0
21.00	2.2	3.6	5.5	10.7	0.0	2.9	0.0	0.0	35.9	91.0
22.00	255.6	372.6	2.5	7.2	0.0	68.0	191.2	215.4	929.0	383.7
23.00	7.9	10.7	9.3	12.3	0.0	23.7	4.4	0.0	263.5	239.9
24.00	0.9	80.1	8.0	44.1	0.0	4.1	11.0	0.0	163.7	202.8
25.00	1.1	0.6	61.0	16.1	0.0	1.9	13.3	0.0	142.7	250.1
26.00	2.5	0.0	12.5	41.2	0.0	2.2	6.1	0.0	253.0	268.0
27.00	2.5	0.0	22.0	12.4	0.0	0.0	18.7	0.0	435.8	183.0
28.00	0.0	0.0	39.4	3.2	56.9	0.9	8.6	0.0	187.4	184.1
29.00	0.3	0.0	10.0	12.3	0.0	0.4	1.5	16.9	107.4	190.7
30.00	56.7	181.8	13.4	35.1	0.0	4.1	201.0	186.1	1,474.9	260.5
31.00	0.8	0.0	10.2	3.7	17.0	0.0	14.4	0.0	91.1	125.3
32.01	9.7	38.7	5.4	1.0	0.0	0.0	0.0	56.2	165.5	72.9
32.02	2.7	4.8	0.0	2.6	0.0	0.3	0.0	0.0	21.4	75.5

Census Tract	Utilities	Manufacturing	Education	Public	Hospitals	Quasi-Public	Outdoor Recreation	Agriculture	Vacant	Rights-of-way
33.00	302.4	82.5	0.0	7.8	0.0	0.2	18.3	0.0	332.9	138.2
34.00	0.0	6.7	6.5	11.7	0.0	0.0	0.0	0.0	372.3	119.7
35.00	0.0	0.0	18.8	8.6	0.0	0.0	37.1	0.0	169.6	114.0
36.00	0.0	9.3	10.3	6.8	25.2	0.8	0.0	0.0	71.0	122.2
37.00	59.6	96.5	20.2	26.1	0.0	1.0	198.6	4,094.1	2,332.0	554.7
38.00	105.2	0.6	9.9	8.0	0.0	2.3	352.0	5,220.5	3,996.3	601.3
39.00	0.6	9.4	6.0	2.7	0.0	20.5	13.3	115.2	450.8	32.9
40.00	265.2	0.0	24.5	62.4	0.6	1.5	991.0	951.6	1,960.4	716.8
41.00	15.0	8.0	18.3	53.6	0.0	7.8	12.9	2,644.3	4,576.9	648.4
42.00	678.2	3.2	0.4	7.1	0.0	0.0	7.2	1,177.9	1,228.9	449.7
43.01	5.6	0.7	0.0	6.5	0.0	0.0	0.8	1,414.0	980.6	206.3
43.02	2,153.1	87.0	34.8	21.2	0.0	79.8	21.9	4,556.7	2,069.3	618.2
44.00	166.4	13.9	162.7	36.1	18.7	100.6	75.4	620.1	1,187.5	211.9
45.00	0.0	0.0	0.0	1.9	0.0	0.0	202.3	2,845.8	1,233.7	74.1
46.00	0.0	0.0	0.0	0.0	0.0	0.0	294.0	1,114.3	868.3	231.2
47.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.3	19.3	6.7
48.00	217.6	0.0	0.0	24.9	0.0	10.4	1,128.8	9,122.8	1,604.8	558.7
49.00	15.2	2.1	0.0	1.4	0.0	0.0	232.2	3,881.5	1,844.0	260.9
50.00	8.6	4.1	54.2	19.6	0.0	10.2	18.2	3,437.7	673.3	333.7
51.00	371.6	0.0	0.0	0.0	0.0	0.0	239.6	4,489.7	4,584.7	792.6
52.00	221.8	15.3	23.8	10.9	0.0	17.4	2,788.1	11,105.9	3,596.8	955.1
TOTALS	5,074.2	1,204.3	1,184.9	711.4	213.0	781.1	7,372.1	57,352.3	39,432.7	12,684.0

Note:

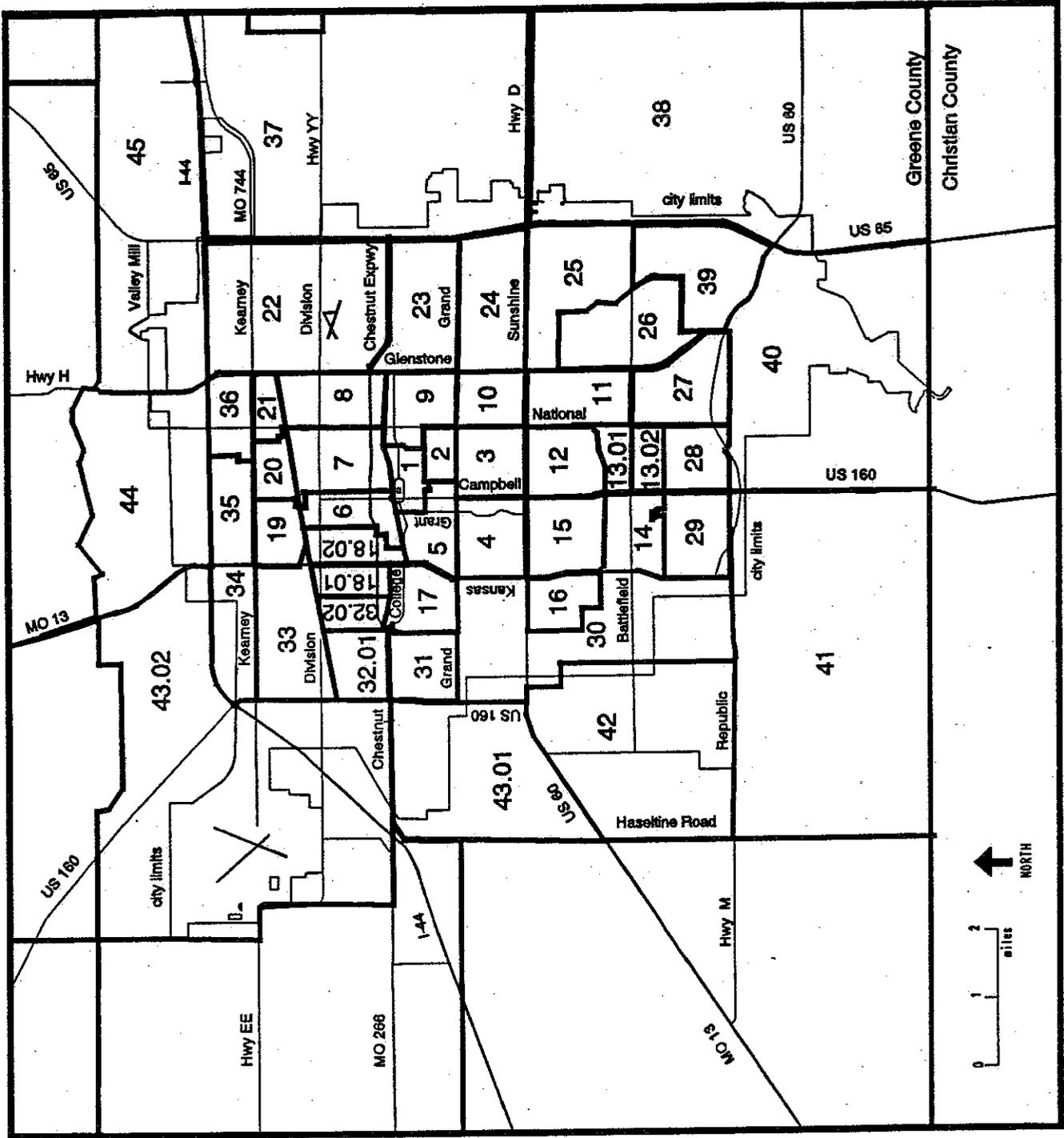
Appendix C has been omitted from this digital document. Appendix C in the original, paper document distributed land-use acres into the study area's Transportation Analysis Zones (TAZs), of which there were 282. Many of the TAZs were small and hence were only legible when viewed on the large map that accompanied the paper document. The current document is not designed to accommodate large maps. As their name implies, transportation analysis zones are mainly of interest to transportation planners wanting to analyze the effect of land-use changes on an area's transportation network.

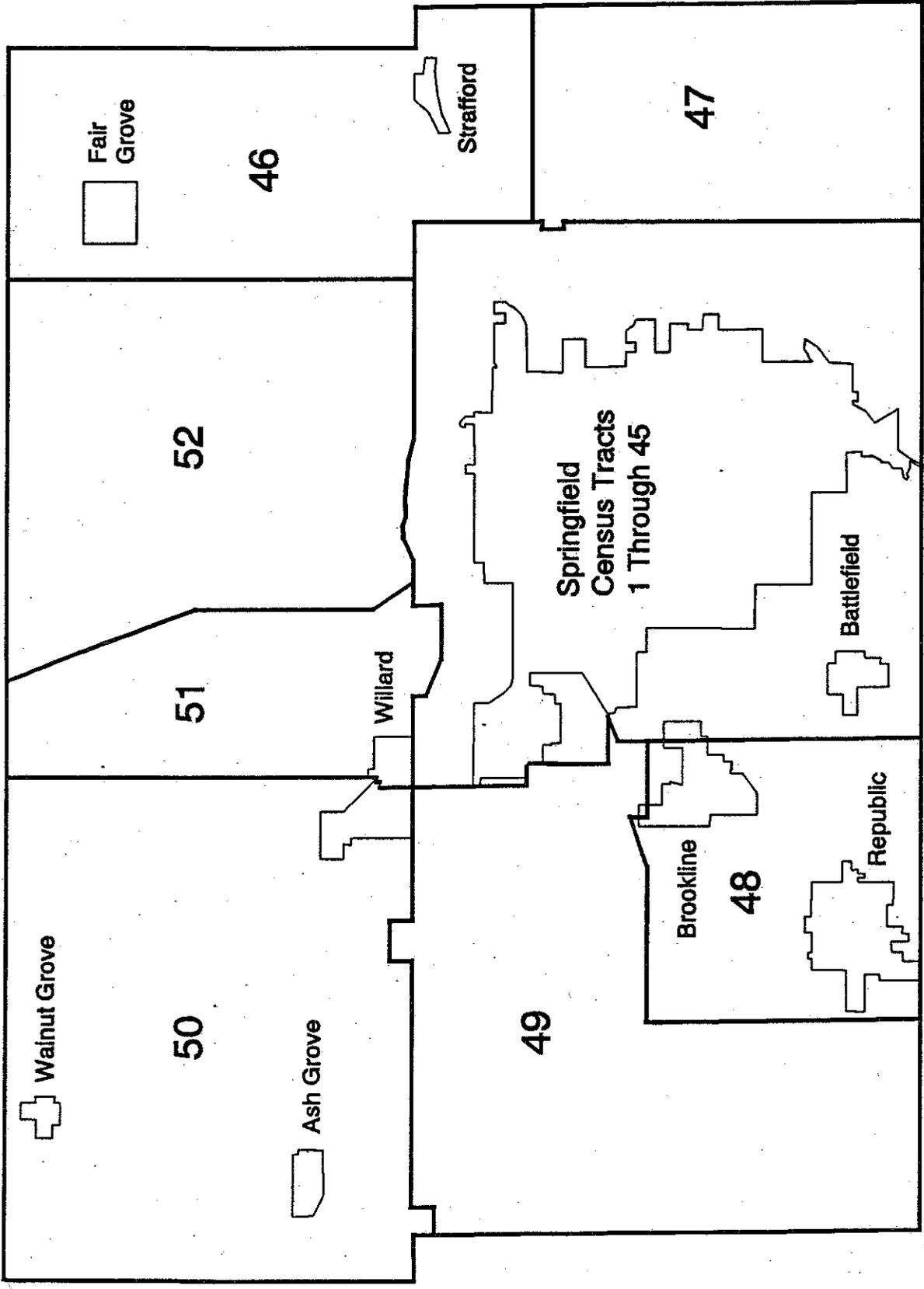


Appendix D

1990 Census Population and Housing Counts by Census Tract

The following data, aggregated by census tract, are from the 1990 Census performed by the U.S. Census Bureau. The data for the census tracts along the edge of the study area are totals for the census tracts which extend outside the study area.





1990 Census Tract Number	1990 Total Population	1990 Total Housing Units
1	1,903	918
2	4,277	865
3	3,640	1,751
4	3,646	1,752
5	5,953	3,302
6	2,750	1,393
7	4,014	1,618
8	3,645	1,274
9	5,036	2,557
10	2,283	1,161
11	3,381	1,717
12	3,970	1,882
13.01	2,240	1,074
13.02	2,468	1,509
14	2,428	1,151
15	5,227	2,234
16	1,010	16
17	3,176	1,457
18.01	1,822	780
18.02	1,787	821
19	3,252	1,448
20	2,232	864
21	2,391	1,157
22	4,160	1,846
23	5,558	2,498
24	6,524	3,280
25	6,057	3,087
26	4,712	2,067
27	2,053	1,060
28	1,483	566
29	4,155	1,662
30	5,343	2,273
31	2,969	1,109
32.01	1,399	539
32.02	2,008	859
33	3,895	1,618
34	928	450
35	1,757	782
36	2,925	1,227
37	4,712	1,811
38	2,755	1,034
39	1,465	604
40	8,918	3,367
41	7,702	2,689
42	4,269	1,664

1990 Census Tract Number	1990 Total Population	1990 Total Housing Units
43.01	2,047	847
43.02	2,570	1,044
44	5,716	2,123
45	1,852	652
46	4,898	1,913
47	4,119	1,573
48	9,198	3,580
49	4,403	1,655
50	7,148	2,814
51	2,013	768
52	5,702	2,148
TOTAL	207,949	87,910