Northwest Development Study

Adopted by the Ozarks Transportation Organization
June 16, 2005

Northwest Development Study

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Northwest Development Study

BACKGROUND COMPONENT

ADOPTED ACTIONS AND GUIDELINES

LONG RANGE PLAN COMPONENT

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EXECUTIVE SUMMARY

The Northwest Development Study is a product of the Ozarks Transportation Organization, which is the Metropolitan Planning Organization (MPO) for portions of Greene County and Christian County in Missouri. The purpose of the Northwest Development Study is to review the comprehensive plan and suggest any updates or amendment that might be needed for the area due to changes since 2001. This study is not intended to be adopted as a freestanding plan. Ideas developed in this study should be incorporated by amendment into the existing Springfield-Greene County Comprehensive Plan.

The boundaries of the Northwest Development Study Area (see Figures 1 & 2) are defined as:

North - Farm Road 94, Melville Road, Spring Creek Road
East - Highway 13/Kansas Expressway
South - Phelps, Mill, Water, Golden, Mt. Vernon, West By-Pass, Bennett, FR 115 & FR 148
West - Highway AB, FR 144, Highway MM.

In addition, the study area includes the area around the interchange at James River Freeway and Interstate 44. This area is shown in a circle just outside the area described above.

Objectives for the Northwest Development Study Area

A number of objectives for the Northwest Development Study area have been identified. The objectives are in line with the existing Comprehensive Plan that was developed in the 1990s as the result of a community-wide planning and visioning effort that involved hundreds of citizens for more than 18 months.

- The metropolitan area can avoid urban sprawl, promote efficiency in the use of public facilities such as roads and sewers and schools, and can minimize commutes and related pollution by pursuing a planned and balanced growth pattern.

- Activity Centers should serve as locations for significant business development and medium to high density housing development. Activity Centers should optimize transportation investments, promote citizen convenience and investor confidence, establish a compact growth pattern, and a sense of urban

excitement. Land in each activity center should be intensely and efficiently used.

- The City of Springfield and Greene County can help to improve the quality of life in the area by promoting good urban design in both the public sphere and in private development.

- The study area should be served by roads, transit services, and bicycle and pedestrian facilities that serve the people living and working in the study area as well as people passing through the area.

- The airport should be surrounded by land uses that do not interfere with the functioning of the Springfield-Branson Regional Airport. Approaches to the airport should be attractive and should offer a positive impression of Springfield, Greene County, and the Ozarks.

- Economic opportunities can be encouraged and protected by carefully planning development near the new airport terminal and the new airport road. Uses near the airport should not infringe on the functioning of the airport. They should also take advantage of opportunities created by airport expansion.

- The area should be served by a variety of parks, greenways, bike routes, and openspace facilities as outlined in Comprehensive Plan. Construction of the new Rutledge-Wilson Community Park will be important to the Northwest Development Study area. Residential and business areas should be connected to park, greenway, and bicycle facilities.

- The Northwest Development Study area should offer citizens a variety of attractive, affordable residential uses in attractive, compact, well defined neighborhoods. Diverse housing opportunities are necessary to a growing and increasingly diverse metropolitan area.

- Environmentally sensitive areas such as sinkholes, creeks, floodplains, steep slopes, and major forested areas should be protected and valued.

- The Missouri Department of Transportation (MoDOT), the City of Springfield, and Greene County will use technologies that mitigate noise from interstate highways, freeways, and expressways.

Proposed Actions for the Northwest Development Study Area

The following actions are specific to the Northwest Study Area and should be incorporated by amendment into the existing *Springfield-Greene County Comprehensive Plan* at the appropriate locations.

- Construct a new road to serve the new replacement terminal at the Springfield-Branson Regional Airport. This road should have limited access and should provide good access to residents of the Springfield metro area and to people traveling beyond the Springfield metro area.

- Provide an appropriate amount of neighborhood commercial uses. Increasing opportunities for neighborhood-scale shopping will increase the number of non-vehicle trips and shorten the length of the many vehicular trips. Neighborhood shopping areas conveniently provide goods and services to area residents. Neighborhood shopping facilities include: grocery stores, banks, doctor's and dentist's offices, drug stores, video stories, dry cleaners, Laundromats, gas stations, post offices, bookstores, small-scale clothing stores, hairdressers and barbers, hardware stores, and restaurants. Individual stores in neighborhood commercial areas should be small in scale. Big box retailers are not appropriate in neighborhood commercial areas.

- Explore the possibility of providing additional transit service to the Northwest Development Study area.

- Provide a continuous and well spaced network of bicycle routes in the Northwest Development Study area. The bicycle routes should offer connections to points of interest throughout the metro area. Wherever possible, residential development should provide connections to bicycle routes and greenways (which also provide biking facilities).

- Prepare for and prioritize the roads identified on the Major Thoroughfare Plan.

- Plan for future land uses that protect the airport from encroachment and that take advantage of the benefits of location near the airport. An area of Airport Influence should be developed surrounding the airport in order to ensure appropriate development with regard to land use and appearance to ensure development compatible with the Springfield-Branson Regional Airport.

- Rezone land in Activity Centers consistent with the recommendations of the Comprehensive Plan. This may entail development of an overlay zone.

- Amend local zoning ordinances to provide a Business Park Zoning Classification as suggested in the Comprehensive Plan. The Business Park Zone should be applied to the area south of the Springfield-Branson Regional Airport as shown on the future land use map in the existing Comprehensive Plan.

- Explore methods of protecting farmland on the rural-urban fringe.

- Implement the design guidelines found in the Comprehensive Plan and in the Southeast Development Study.

- Develop an airport/police/fire training facility to be utilized by personnel throughout the region.

- MoDOT, the City of Springfield, and Greene County will explore technologies which reduce the impact of highway noise. The first step would be to adopt a Highway Noise Abatement Policy. Mitigation techniques include, but are not limited to the following: construction of noise barriers (berms, fences, walls, landscaping, etc), selection of pavement types that reduce noise, attention to the location of new subdivisions and the siting of individual dwelling units. New development should mitigate existing road noise.

- Develop strategies to encourage air passengers and freight bound for Ft. Leonard Wood to fly in and out of the Springfield-Branson Regional Airport. Address related ground transportation issues.

- Complete the North/South Corridor Study that is one of the MPO's five priorities. The purpose of this study is to determine the best strategies for relieving pressure on north/south roadways in the Springfield area.

- Investigate and study possible realignment of Highway 13 between Farm Road 94 and I-44.

- Investigate and recommend new design guidelines for important gateways into the city, specifically West Division between Kansas Expressway and West Bypass.

Recommended Land Use Patterns

The "Recommended Future Land-Use Plan Amendment" Map (Figure 21) includes the following changes to the future land use map shown in the existing *Springfield-Greene County Comprehensive Plan*.

- On the western edge of the study area the existing plan shows the area outside the Urban Service Area boundary as "Urban Reserve". At the request of Greene County, this area would be changed to "Rural Area". This classification would permit uses such as farming and large lot residential uses. These areas are outside the City of Springfield's Urban Service Area and are not indicated for sewer extension within the next 20 years.

- At the following locations the Future Land Use Plan would show the classification "Activity Center":
  - I-44/Highway MM interchange
  - I-44/chestnut Expressway interchange
  - I-44/Kearney interchange
  - I-44 Kansas Expressway interchange

  This is only a mapping change, not a substantive change from the existing plan. Each of these areas is shown as an activity center in the existing *Springfield-Greene County Comprehensive Plan*.

- In two locations along the railroad tracks in the southwest portion of the study area the existing plan shows "Medium or High Density Housing" which will be changed to "Low-Density Housing" to reflect the existing land use pattern in the area.

- In the northeast quadrant of the intersection of Haseltine Road (FR 115) and Grand Street (FR 140) the existing plan shows "Low Density Housing". This would be changed to "Medium Intensity Retail, Office or Housing". This location could be used for a neighborhood commercial development. The remaining three quadrants of the intersection have very limited development potential because of sinkholes and floodways

- Where Haseltine Road (FR 115) meets the south boundary of the study area, the existing plan shows "Medium High Density Housing". This would be changed to "Low-Density Housing" to reflect the current development pattern in the area.

- On the south boundary of the study area the existing plan shows a generalized

area for a new "Park". Since the completion of the existing *Springfield-Greene County Comprehensive Plan* the exact location of the Rutledge-Wilson Community Park. The former location is to be shown as "Low-Density Housing" and the current park location is to be inserted.

- Where West Bypass intersects with Bennett/FR 146 the existing plan shows "Medium/High Density Housing". That would be changes to show a combination of "Light Industrial, Office and Office-Warehouse" and "Medium Intensity Retail, Office or Housing". This allows for the continuance of the existing light industrial uses in the area.

- Immediately below the activity center at the I-44/Chestnut interchange the existing plan shows a small area of "Low-Density Housing" which is to be shown as "Medium or High Density Housing". This would buffer existing residential areas from railroad activity.

- Several areas around the Springfield/Branson Regional Airport are now being show as "General Industry, Transportation and Utilities". Each of these areas has been bought by the airport since the completion of the existing *Springfield-Greene County Comprehensive Plan* or are in the process of being purchased by the airport.

- Some areas near the airport are now shown as "Rural Area". These areas are in the "airport zone" and under state law are only allowed to be developed for residences of 10 acres or larger.

- An area south of the rail road tracks and north of Chestnut Expressway are now shown as "Light Industrial, Office and Office-Warehouse". This area was previously shown as "Medium/High Density Housing". However, they are in the airport zone and would not be allowed to have residences on less than 10 acre lots. The airport zone allows some non-residential uses (see airport section in this document).

- Areas along portions of Chestnut Expressway and Kearney were previously shown as "Low Density Housing". These areas are now shown as "Medium Intensity Retail, Office or Housing". This better reflects existing development patterns, existing zoning patterns, the need to offer mixed uses along these corridors, and the inappropriateness of new single family housing on shallow lots along these major corridors.

- North of I-44 and east of US 160 the existing *Springfield-Greene County*

Comprehensive Plan shows “Medium Intensity Retail, Office, Housing” and “Medium/High Density Housing”. This would be changed to “Low-Density Housing” as a reflection of existing development patterns and the provision of medium and high density housing in other portions of the study area.

- Two Willard Schools will now be shown on the Future Land Use Plan. The existing plan did not show the location of these schools.

- Land west of West Bypass between Kearney and the rail road tracks was shown in the *Springfield-Greene County Comprehensive Plan* as “General Industry, Transportation & Utilities”. This has been changed to “Medium or High Density Housing” and “Medium Intensity Retail, Office or Housing”. This reflects the future land uses shown on the east side of West Bypass and attempts to preserve the West Bypass corridor in uses which will make it an attractive entrance to the community and will provide an opportunity to offer multi-family uses and additional community retail uses to this growing portion of the community. Land west of this land and east of I-44 is shown on the existing plan as “General Industry, Transportation & Utilities”. Because the area already has a surplus of industrial zoning (much of which has not been developed during past decades) and because there is already single-family development moving into the area, the suggestion is to show the area as “Low Density Housing”. This area boarders the Willard South Elementary School.

- South of Kearney near land already shown as “General Industry, Transportation & Utilities” an area shown as “Low-Density Housing” and “Medium/High Density Housing” would now be shown as “General Industry, Transportation & Utilities”. This change would reflect the existing development in the area.

BACKGROUND COMPONENT

NORTHWEST DEVELOPMENT STUDY

Northwest Development Study

Introduction

The Northwest Development Study is a product of the Ozarks Transportation Organization, which is the Metropolitan Planning Organization (MPO) for portions of Greene County and Christian County. The study area is located in the northwest portion of the Springfield metropolitan area and includes land inside the City of Springfield and in unincorporated Greene County (see Figure 1). A 1991 plan prepared by the MPO staff covered much of the study area. In addition, the Springfield - Greene County Comprehensive Plan (adopted by the City of Springfield in 2001 and currently under consideration by Greene County) covers the entire study area. ***The purpose of the Northwest Development Study is to review the Comprehensive Plan and suggest any updates or amendments that might be needed for the area due to changes since 2001***.

This study will focus on the following tasks:

- Existing Conditions: Explore the existing natural and man-made conditions and trends in the study area
- Policies: Review the policies in the Comprehensive Plan that apply to this area and propose new policies if needed
- Design Guidelines: Incorporate applicable design guidelines as suggested in the recent Southeast Springfield Development Study (which also addressed areas within the City of Springfield and unincorporated Greene County)
- Alternatives: Propose possible amendments to the existing Comprehensive Plan
- Implementation: Propose needed amendments to the Springfield-Greene County Comprehensive Plan, indicate responsibility for initiation of each action, indicate primary and secondary responsibility for implementing each action.

This study is not intended to be adopted as a freestanding plan. Ideas developed in this study should be incorporated by amendment into the existing Springfield-Greene County Comprehensive Plan. The MPO's Long Range Transportation Plan is one element of the Comprehensive Plan. The first step in implementation will be approval by the Ozarks Transportation Organization. Any proposed amendments to the Comprehensive Plan will then be reviewed by the Springfield Planning and Zoning Commission and the Greene County Planning Board and then approved by the Springfield City Council and the Greene County Commission.

Study Area Location

The boundaries of the Northwest Development Study Area (see Figures 1 & 2) are defined as:

- North - Farm Road 94, Melville Road, Spring Creek Road
- East - Highway 13/Kansas Expressway
- South - Phelps, Mill, Water, Golden, Mt. Vernon, West By-Pass, Bennett, FR 115 & FR 148
- West - Highway AB, FR 144, Highway MM.

In addition, the study area includes the area around the interchange at James River Freeway and Interstate 44. This area is shown in a circle just outside the area described above.

The study area includes the northwestern part of the City of Springfield and adjacent areas in Greene County. A small part of the City of Brookline in included in the study boundary. The total area for the Northwest Development Study is 23,478.24 acres. Of the total, 8,049.05 acres (37.91%) are in the City of Springfield, 12,784.6 acres (60.22%) are in unincorporated Greene County, 398.46 acres (1.68%) are in the City of Brookline, and 2.25 acres (0.01%) are in the City of Willard. The Northwest Development Study area makes up roughly 37 square miles. By comparison, the City of Springfield makes up roughly 80 square miles.

Area assets and challenges

A number of things are important when considering future growth and development in the Northwest Development Study area. The existing land use and existing zoning must be taken into consideration. Zoning changes for particular properties are seldom done except at the request of the property owner. However, changes in zoning can be initiated by City Council or the Greene County Commission. Any rezoning within the City must be reviewed by the Springfield Planning and Zoning Commission and approved by the Springfield City Council. Likewise, any rezoning in unincorporated Greene County must be reviewed by the County Zoning Board and approved by the Greene County Commission. Existing zoning and existing land uses will be discussed later in this document.

The existing Springfield-Greene County Comprehensive Plan, particularly the Transportation Element, should be used as a starting point for consideration of development in the study area. The recommendations made in the Comprehensive Plan are reviewed in several sections of this document. ***Later in this document there is a review of the actions from the Comprehensive Plan which apply to the Northwest Development Study area***. While the community is not tied to the recommendations in the plan, any deviations from the adopted Comprehensive Plan must be formalized by amendments to the plan.

Northwest Development Study - Area Assets

The Northwest Development Study area has a number of assets and a range of potentials. The assets found in the Northwest Development Study area are discussed below.

- The new Partnership Industrial Center West is one example of change in the study area. PIC West, a 410 acre industrial park, is a collaboration of the Springfield Area Chamber of Commerce, Springfield Business and Development Corporation, City of Springfield, City Utilities and Greene County. It has 24 lots, two of which have been developed. PIC West has interstate access, rail service, and is in close proximity to the Springfield-Branson Regional Airport
- The largest single impact on the study area may be the new airport road currently under design. The first phase of the road will connect the new airport terminal with the I-44/Chestnut Expressway interchange. According to the MPO's Major Thoroughfare plan the new road will eventually extend from the Highway MM / I-44 interchange north to the new terminal. To accommodate the new airport access road, MoDOT will alter the route of Highway 266/Chestnut so that it intersects I-44 with a well planned interchange. Portions of the new airport road will be constructed through previously underdeveloped property. The road will open up a new area for development. Signalized intersections will provide access to arterial and collector roads. It is likely that additional industrial or warehousing uses will develop adjacent to the new airport road.
- Expansion at the Springfield-Branson Regional Airport, one of the fastest growing airports in the nation, will have a profound effect on the central portion of the study area. A new and larger terminal will be built southwest of the existing terminal. The new terminal is being designed to accommodate additional growth in coming decades.
- After the new airport replacement terminal is completed (opening anticipated in 2009) there will be opportunities for reuse of the existing airport terminal.

Possibilities for reuse include use by Ozarks Technical Community College.

- Adjacent to the Springfield-Branson Regional Airport is the Army National Guard facility. A major expansion is planned for the National Guard. Approximately 200 new jobs will be added on-site.
- In recent years there has been rapid development of new single family subdivisions south of Chestnut Expressway and north of Kearney Street. Other residential subdivisions have been developed throughout the study area. The Northwest Study Area will continue to see new residential subdivision.
- A somewhat smaller number of new multi-family developments are scattered around the study area. The area is underserved by multi-family uses, creating an opportunity for developers to provide additional housing opportunities.
- The Comprehensive Plan shows four Activity Centers within the Northwest Development Study area. The Activity Center at Kansas Expressway and I-44 is largely developed but has potential for additional growth north of I-44. The Activity Center at I-44 and West By-Pass is only partly developed and has potential for growth in the short term as the area continues to grow. The Activity Center at I-44 and Chestnut Expressway is mostly undeveloped and should be an important economic generator during the life of the Comprehensive Plan (to the year 2020). The Activity Center at Highway MM and I-44 is sparsely developed and also has development potential during the life of the adopted Comprehensive Plan (20 years). A mixture of commercial, office, and high intensity residential uses is considered appropriate for each of these activity centers.
- The Northwest Development Study area has the potential for increased industrial, warehouse, and research and development land uses because of multi-modal options for transportation. The area has rail service, air travel and air transport. The Northwest Development Study area has a number of facilities that simplify truck transport and automobile travel (interstate highway, expressways, major arterials).
- Historic Route 66 passes through the area. There is a movement nation-wide to revive awareness of historic route 66. Location in the study area provides an opportunity for identity and economic development. In addition, historic route 66 could provide an opportunity for a city gateway on Highway 266/Chestnut west of I-44.
- At his time, the City of Brookline is in merger talks with the City of Republic. If or when the City of Brookline receives sewer service, the land use pattern in Brookline is expected to change. Currently, Brookline is made up of large lot single family development. Much of Brookline is undeveloped. The City of Brookline expects to have urban density non-residential development near the interchange at I-44 and Highway MM/B. That development would impact traffic patterns in the Northwest Development Study area.

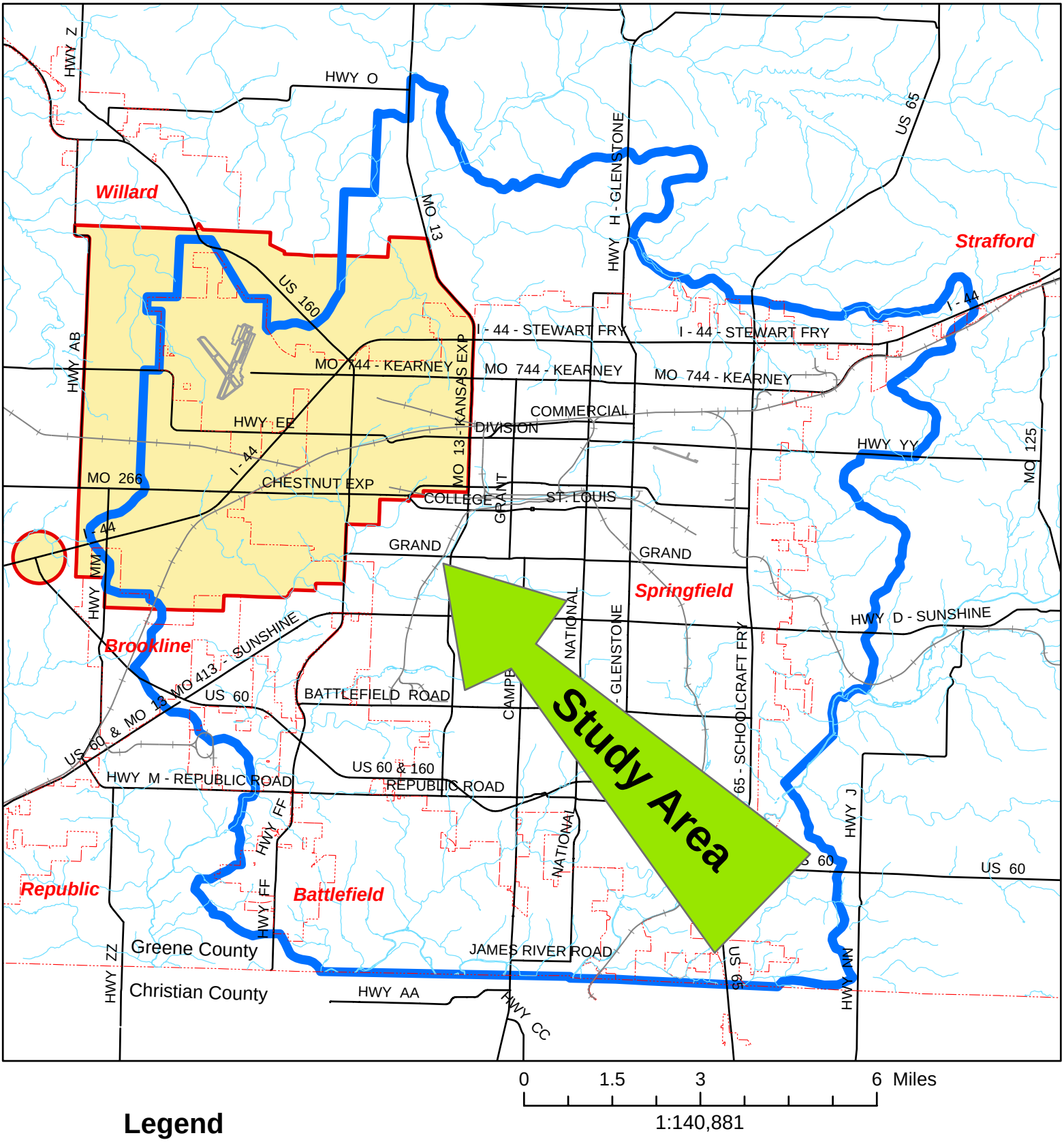
Northwest Development Study - Area Challenges

Like any partially developed area in the region, the Northwest Development Study area faces a number of challenges.

- Much of the area does not have sewer service. Portions of the study area outside the Urban Service Area should not expect to receive sewer service during the life of the Comprehensive Plan (to the year 2020). The older portions of the study area do have sewer service. Three new sewer lines are currently planned or under construction in the study area. There are plans to extend sewer in the northeastern corner of the area and also to the interchanges at I-44 / Chestnut and at I-44 / Highway MM. However, for the present, the absence of sewer service will impede development. Much of the area is outside the Urban Service Area (see Figure 7). These areas should not expect to receive sewer service within the next 20 years. However, should conditions within the community change, the City of Springfield and Greene County can consider amending the Urban Service Area boundary. For the present, the area outside the Urban Service Area boundary can only develop at rural intensities. These areas are best left in agricultural uses for the present. They may also be used for large lot residential uses (10 acres or larger).
- The expansion of industrial uses in the central part of the study must be handled with sensitivity to avoid negative impacts on surrounding properties and on the environment. Siting of industrial uses must be done after consideration of access issues, surrounding existing land uses (particularly residential uses), and environmental concerns such as sinkhole fields, areas of internal drainage, and losing streams.
- Expansion of the airport and runway expansion will create an additional impact on the surrounding areas. The Airport Zones (as defined in Missouri Legislation) will impose additional limits on nearby land uses and on the height and uses of buildings. These zones (discussed later in this document) are based on existing and planned runways and can be see on Figure 13.
- As discussed later in this document, sinkhole fields and large individual sinkholes (as seen on Figure 20) place additional constraints on future development. The choice of specific land uses is constrained for environmental reasons and development near sinkholes must be done in compliance with the City of Springfield and the Greene County Sinkhole Ordinances.
- The presence of rail lines in the area cannot be overlooked. While rail service

levels have fallen in recent decades, the use of these lines does impact the area. At-grade road crossings must be considered as development increases, particularly in the southwest portion of the study area where development of single family subdivisions is expected to continue. The existence of rail lines is a benefit to prospective industrial development but causes safety concerns for the growing residential population and the increased number of persons coming and going to places of employment.

- Increasingly high volumes of traffic on Highway 13 pose challenges in the study area. MoDOT is considering the need to relocate part of Highway 13.
- Higher density development in the City of Brookline (possible only after sewer service is extended) would impact traffic volumes in the study area.



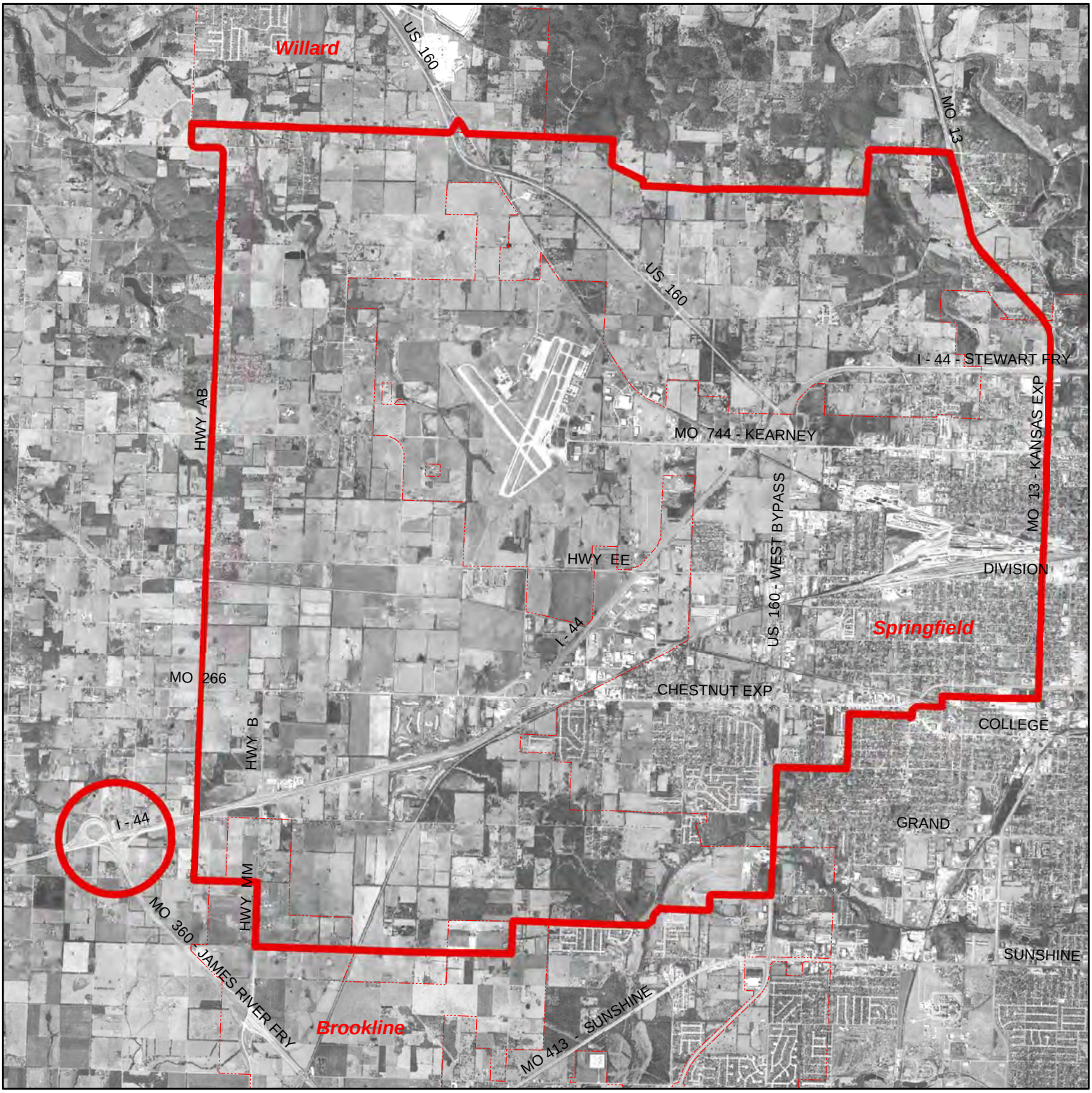
Legend

- Railroads
- Major Roads
- Urban Service Area Boundary
- Northwest Springfield Study Area

Figure 1

Northwest Springfield Development Study

Study Area Location



0 0.5 1 2 Miles

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Legend

City Limits to 7 August, 2004

Study Area Boundary

Figure 2

Aerial Photo of Study Area

Northwest Springfield Development Study

Existing Conditions

This section explores the existing conditions in the study area, both natural and man-made. These factors form the basis for consideration of changes need to be made to the adopted *Springfield - Greene County Comprehensive Plan.*

The existing conditions explored in this section of the Northwest Development Study are:

1. Population
2. Housing
3. Neighborhoods
4. Land Parcelization, Subdivisions, Annexation History
5. Annexation
6. Current Land Use Pattern
7. Zoning
8. Planned Land Use from Springfield-Greene County Comprehensive Plan
9. Road and Transit Systems
10. Bicycle and Pedestrian Systems
11. Rail and Trucking
12. Airport
13. Partnership Industrial Center West
14. Utilities
15. Parks, Open Space and Greenways
16. Community Facilities
17. Environmental Concerns

1. Population

Existing Conditions. In 2000, the Northwest Development Study area had a population of 18,602 persons. The 1990 population of the area was 16,258. Between 1990 and 2000 there is was a population increase of 14.4%, or an actual increase of 2,344 persons. The population outside of incorporated places grew 26%, from 2,650 persons in 1990 to 3,341 persons in 2000. According to the 2000 census, 16% of area residents live in unincorporated Greene County. Between 1990 and 2000, the fastest growing part of the study area was the unincorporated area. Currently, several subdivisions are under construction in the study area and significant population growth is expected to continue in the unincorporated areas.

Table ---- Population Change

	1990	2000	Number change 1990 - 2000	Percent Change 1990 - 2000
Study Area	16,258	18,602	2,344	14.4%
Inside incorporated places	13,608	15,261	1,653	12.1%
Outside incorporated area	2,650	3,341	691	26.1%
City of Springfield	140,494	151,580	11,086	7.8%
Greene County	207,949	240,391	32,442	15.6%

Source: 2000 Census

Analysis. The majority of the development during the last ten years has been in the unincorporated portion of the study area. That trend is expected to continue. The growth in the unincorporated areas has been due to a number of factors: the decreasing amount of vacant property within the City of Springfield, the steady increases in population within the metro area, the outward development pattern, the ease of developing raw land as opposed to redeveloping property within the City of Springfield, the provision of electricity and gas and water outside the city limits, the provision of city sewer service, and planned extension of sewer service. However, local jurisdictions require that development at urban densities have sewer service from an incorporated municipality. When the City of Springfield provides sewer services to a developing area it requires property owners to annex (if contiguous) or to sign an irrevocable consent to annex when the City has grown outward, making the property contiguous. As a result, the City of Springfield has acquired numerous irrevocable consent to annex petitions in this area that can be acted upon when the city has grown outward to touch the properties. In the future, areas developing at urban density are likely to become part of the City of Springfield as the result of either new consent annexations or the eventual annexation of properties with irrevocable annexation petitions on file. Population growth is most likely in the southwestern and northeastern portions of the study area. Sewer service is being extended (or is planned to be extended) into these areas. In addition, market demand indicates that growth in these areas is likely. The western and a portion of the north central portions of the study area are not likely to see significant growth over the course of the Comprehensive Plan because they are not in the Urban Service Area and are not planned for sewer service extension. Much of the west central portion of the study

area is taken up by the Springfield-Branson Regional Airport or the protected airport zones. Residential development and the associated population growth will not occur in the area of airport impact. The eastern portion of the study area is already developed at urban densities. With the exception of a few by-passed or underdeveloped properties, new residential development and associated population growth is not anticipated in the eastern portion of this study area.

2. Housing

Existing Conditions. The number of dwelling units in the Northwest Development Study area has increased rapidly in the last ten years. Between 1990 and 2000 the number of dwelling units in the study area increased 39.4% (from 5,567 to 7,763). By comparison, the number of dwelling units in the City of Springfield increased only 11.9% while the number of housing units in Greene County increased 26.6% in the same time period. In 1990 only 8.9% of the study area's dwelling units were in the unincorporated part of the study area; by 2000 the percentage had doubled to 16.5%, showing rapid residential growth in unincorporated parts of the study area.

Number of Dwelling Units 1990 & 2000

	1990	2000	1990 - 2000 Percent Change
Northwest Study Area Total	5,567	7,763	39.4%
In cities	5,070	6,480	27.8%
In County	497	1,283	158.0%
City of Springfield Total	62,472	69,877	11.9%
Unincorporated Greene County Total	25,438	34,640	26.6%

Source: 2000 Census

The number of single family homes in the study area increased 37.9%, from 4,862 to 6,707 between 1990 and 2000. During the same decade, the number of mobile homes in the study area grew 55%, from 409 to 634. Mobile homes currently make up 7.4 % of all dwelling units in the study area; by comparison, mobile homes make up only 2.8 % of dwelling units in the City of Springfield. Mobile homes have a significant

presence in the study area. The majority of the dwelling units in the study area, 61.5% are owner occupied. This is above the average for the City of Springfield (49.8% owner occupied) and for unincorporated Greene County (59.5% owner occupied). On the other hand, the study area has a proportionally small number of apartments. Only 5.3% of dwelling units in the study area are multi-family dwelling units; this compares to 28.5% in the City of Springfield. However, the number of multi-family dwelling units in the area did increase 55% (from 409 to 634) between 1990 and 2000. The majority of these multi-family units are in the City of Springfield portion of the study area. There are very few multi-family units in the unincorporated portion of the study area. However, the number of multi-family units is expected to increase in line with the recommendations of the adopted Comprehensive Plan.

Number of Housing Units by Type of Structure

	Study Area 1990	Study Area 2000	Percent Change
Single Family	4,862	6,707	37.9%
Multi-family	296	422	42.6%
Mobile Home	409	634	55.0%
TOTAL UNITS	5,567	7,763	39.4%

Source: 2000 Census

Housing Units by Location

	Percent Northwest Study Area		Percent of Springfield Portion of Study Area
Single Family	87.3%		68.7%
Multi-family	5.3%		28.5%
Mobile Home	7.4%		2.8%
TOTAL	100%		100%

Source: 2000 Census

Housing occupancy rates within the study area are similar to the general occupancy rates in Greene County as a whole and remained consistent between 1990 and 2000.

In 1990, 92.3% of housing units in the study area were occupied; 7.7% were vacant. County-wide in 2000, 92.7% were occupied and 7.3% were vacant. In 2000, 92.4% of units in the study area were occupied and 7.6% were vacant. County-wide in 2000, 93.6% were occupied and 6.4% were vacant.

In 1990 the rate of home ownership in the study area (61.5%) was slightly below the county-wide rate (63.4%). However, by 2000 the rate of home ownership in the study area had risen to 65.7% and was higher than the county-wide rate for the year 2000, 63.6%. In the Northwest Development Study area the percent of home ownership rose 3 percentage points and the percentage of renters fell 4 percentage points between 1990 and 2000.

1990 Housing Occupancy & Ownership

	Study Area	Percent for Study Area
Total Occupied	5,134	92.3%
Vacant Units	433	7.7%
Owner Occupied	3,422	61.5%
Renter Occupied	1,712	30.8%

Source: 2000 Census

2000 Housing Occupancy & Ownership

	Study Area	Percent
Total Occupied	7,742	92.4%
Vacant Units	589	7.6%
Owner Occupied	5,086	65.7%
Renter Occupied	2,967	26.7%

Source: 2000 Census

The study area has a significant amount of older dwelling units. Roughly half the dwelling units in the study area were constructed before 1960, roughly half after 1960. By comparison, county-wide only 28.4% were built before 1960 while 71.6% were constructed after 1960. During the last three decades, the majority of growth in the Springfield area has been to the south and southwest, with a growing amount of

growth in the east. The northwestern and northern portions of the Springfield area have lagged in construction of new homes and new multi-family uses. However, the rate of residential construction is increasing in the Northwest Development Study area. Roughly 17% of units in the study area were constructed between 1990 and 2000, as opposed to 9% in the previous decade.

Age of Housing Structures

Year Built	Number in Study Area	Percent in Study Area
Pre 1940	1,446	18.6%
1940-1949	912	11.8%
1950-1959	1,441	18.6%
1960-1969	952	12.3%
1970-1979	994	12.8%
1980-1989	710	9.0%
1990-2000	1,308	16.9%
Total	7,763	100%

Source: 2000 Census

Analysis. The data show that the number of residential units outside the incorporated portion of Springfield increased rapidly during the last decade. The rate of residential construction in the unincorporated portion of the study area outpaced growth within the City of Springfield and throughout Greene County. The data show that between 1990 and 2000, the number of dwelling units in the unincorporated part of the study area increased four times faster than the number of dwelling units in the city portion of the study area (an increase of 158% compared to 27.8%). This is partly due to the lack of vacant land zoned for residential uses in the City of Springfield portion of the area. As sewer service is extended, housing development will follow. This study area has a low percentage of multi-family dwelling units. However, the data show that the number of multi-family units in the area increased 55% (from 409 to 634) between 1990 and 2000. As the number of manufacturing jobs increases due to construction in the Partnership Industrial Center West and in the area of airport impact, an increase in the number of apartment units would be expected. An increase in the number of multi-family units would be in line with the recommendations of the adopted Comprehensive Plan. Home ownership is increasing in the study area, due in part to the development of a number of starter and moderately prices homes. By 2000 the rate of home ownership in the study area had risen to 65.7% and was higher than the

county-wide rate (63.6%). Between 1990 and 2000, the percent of home ownership in the study area rose 3 percentage points and the percentage of area residents renting their homes fell 4 percentage. Another concern is the high number of older housing units, most of which are in the incorporated portion of the study area. Roughly half the dwelling units in the study area were constructed before 1960, roughly half after 1960.

Currently, the rate of residential construction is increasing in the Northwest Development Study area. The construction is taking place primarily in the unincorporated portion of the study area. This trend is expected to continue. Roughly 17% of housing units in the study area were constructed between 1990 and 2000; only 9% were constructed between 1980 and 1990.

3. Neighborhoods

Existing Conditions. Four of the City of Springfield's Neighborhood Associations are wholly or partly within the Northwest Development Study area:

- Tom Watkins Neighborhood Association
- Heart of the Westside Neighborhood Association
- Westside Community Betterment Association
- Partners of NW Springfield Neighborhood Association

The Springfield Neighborhood Conservation Office has conducted Neighborhood Assessment Workshops in parts of the study area. At those meetings with residents the following concerns were raised:

- decline in many commercial areas (businesses leaving)
- abandoned homes (disrepair/boarded up)
- infrastructure in disrepair (streets, water/sewer, sidewalks)
- the Community Center at Watkins Park needs to be reopened
- more benches and picnic tables within Watkins Park are needed
- traffic congestion around the Wal-Mart Supercenter, on Kansas Expressway
- a right turn lane (southbound) on High Street west of Kansas Expressway on Atlantic Street is needed
- inoperable vehicles
- poor resurface High Street west of Kansas
- noise is a concern - enforce the noise ordinance
- poor code enforcement (proactive)
- annual trash cleanup day needed
- Thoman/Hilton drainage problem (standing water at intersection)

- a police substation needs to be added
- need for improvements at Watkins Park (benches, picnic tables, reopen community center)
- abandoned houses/buildings
- better pedestrian crossing on Kansas at Atlantic is needed
- hazardous intersection at Park and Kearney (Williams Elementary School)
- poor lighting on streets
- need for left turn lanes from West Avenue onto Chestnut Expressway
- need for community center in Nichols Park
- rat population
- impact of salvage yards on residential areas
- lack of jobs/businesses
- mosquito problems (poor drainage)
- lack of things of young people/families to do
- lack of bus shelters
- poor conditions in alleys
- poor property maintenance
- large trucks parking in residential neighborhoods
- lack of neighborhood shopping (e.g. grocery stores)
- dogs loose in neighborhood
- illegal drugs
- lack of sidewalks in some areas
- need for neighborhood health clinic
- speeding

Analysis. The information gathered by the City of Springfield's Neighborhood Conservation Office pertains to certain developed areas within the incorporated portion of the study area. In addition to residential areas, older commercial areas need attention. The City is currently taking steps to deal with both abandoned homes and homes in disrepair within the study area. These efforts should continue and should be applied to commercial structures as well. The City is also, as part of the Neighborhood Assessments, taking steps to address infrastructure problems in the study area. The City's Capital Improvements Program includes projects to address infrastructure problems in the City's neighborhoods. For information on neighborhood assessments and neighborhood improvement efforts call the City of Springfield Neighborhood Conservation Office at 417-864-1031.

4. Land Parcelization

Existing Conditions. The patterns of land parcelization and public roads are depicted

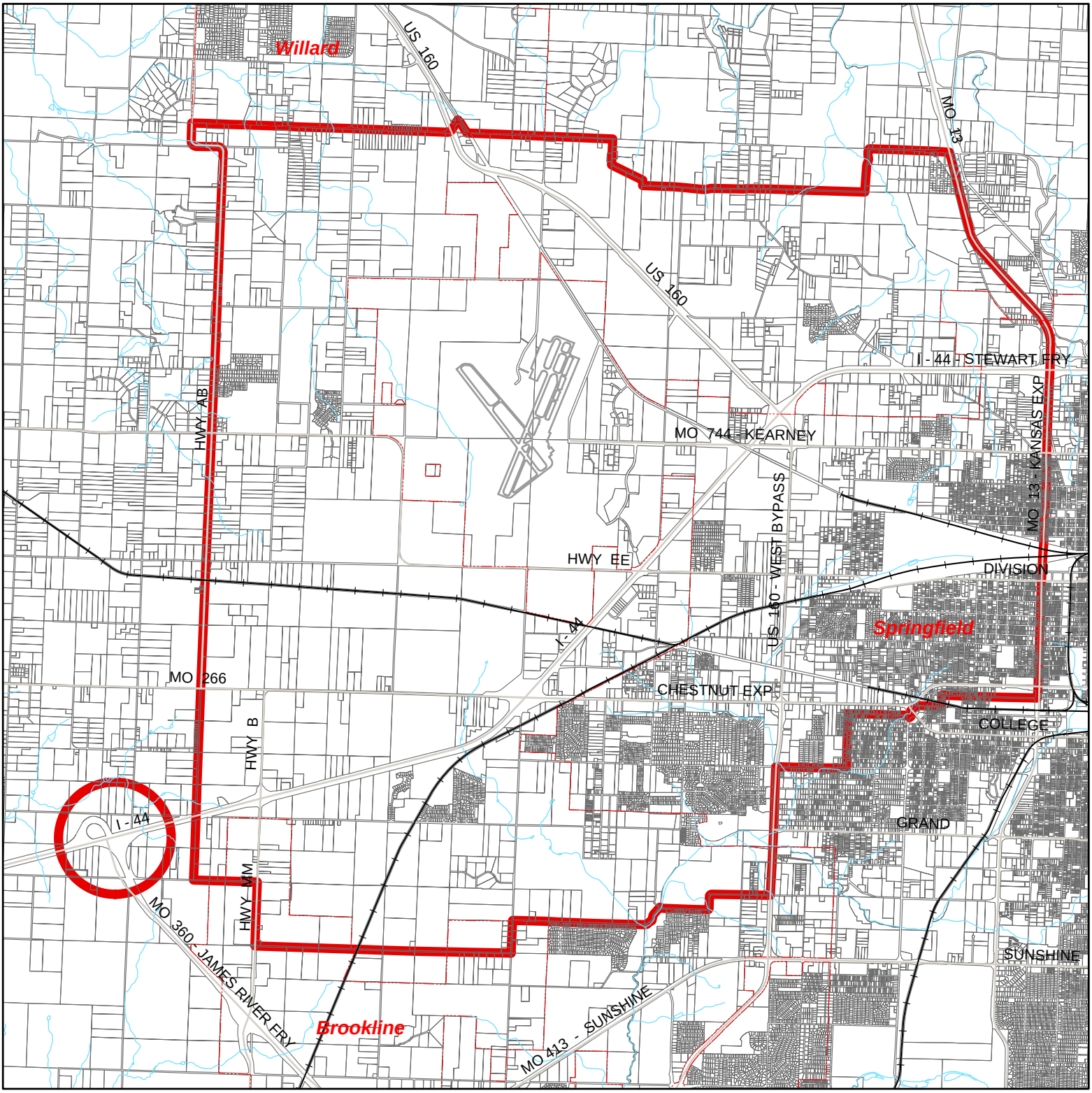
in Figure 3. Property in the east-central portion of the study area has been platted into urban-sized lots, usually about ¼ acre to 1/3 acre in size. Generally, these subdivisions are at the urban density that the Comprehensive Plan recommends for land within the Urban Service Area (the area which the City and County consider appropriate for sewer extension and urban type roads).

In some areas there are large lot developments (lots of 3 acres or more). Large lot subdivisions are occurring in the unincorporated portion of the study area, primarily in the south-southwest and the northern portion of the study area. These properties have the potential to redevelop at a higher density at an unknown future date. The City and the County have expressed concern that a significant number of large lot subdivisions will impede the outward expansion of urban-density development. This would be contrary to the compact and balanced land use pattern recommended by the adopted Springfield-Greene County Comprehensive Plan.

Much of the study area to the north, south, and west is undeveloped or in agricultural use. The adopted Comprehensive Plan calls for areas outside the Urban Service Area (see Figure 7) to remain in agricultural use for the foreseeable future.

Analysis. Large lot development (3 acres or greater) is occurring primarily in the south-southwest and the northern portion of the study area. These are areas that either lack sewer service or where a pattern of large lot subdivisions has developed. In some cases, large lot subdivisions abut subdivisions developed at urban densities. As stated earlier, there is concern that large lot development will impede the outward development of the City of Springfield at urban densities. Scattered large lot subdivisions pose little problem, but a significant area of large lot development or a ring of large lot subdivisions will discourage future development at urban densities. In addition, large lot subdivisions are more expensive for local governments to serve with utilities and with roads. Expanses of large lot subdivisions create more vehicle miles driven within the community.

Large lot subdivisions are discouraged by the existing Comprehensive Plan. These semi-rural lots are difficult to re-subdivide into urban-scale parcels and are difficult to serve with public sewer and water lines. The practice of platting five- and ten-acre lots around the perimeter of Springfield is costly to the whole community because it greatly increases the cost of roads, sewer lines, water lines, and the amount of driving time, and the need for school busing. Cost-effective urban development is greatly hindered by a pattern of large lot development.



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Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Greene County Parcels
- Study Area Boundary

Northwest Springfield Development Study

Figure 3

Land Parcelization

5. Annexation

Existing Conditions. About one-third of the Northwest Development Study area is within the Springfield city limits. Very small portions of the study area are within the City of Willard and the City of Brookline. The remainder of the study area is in unincorporated Greene County.

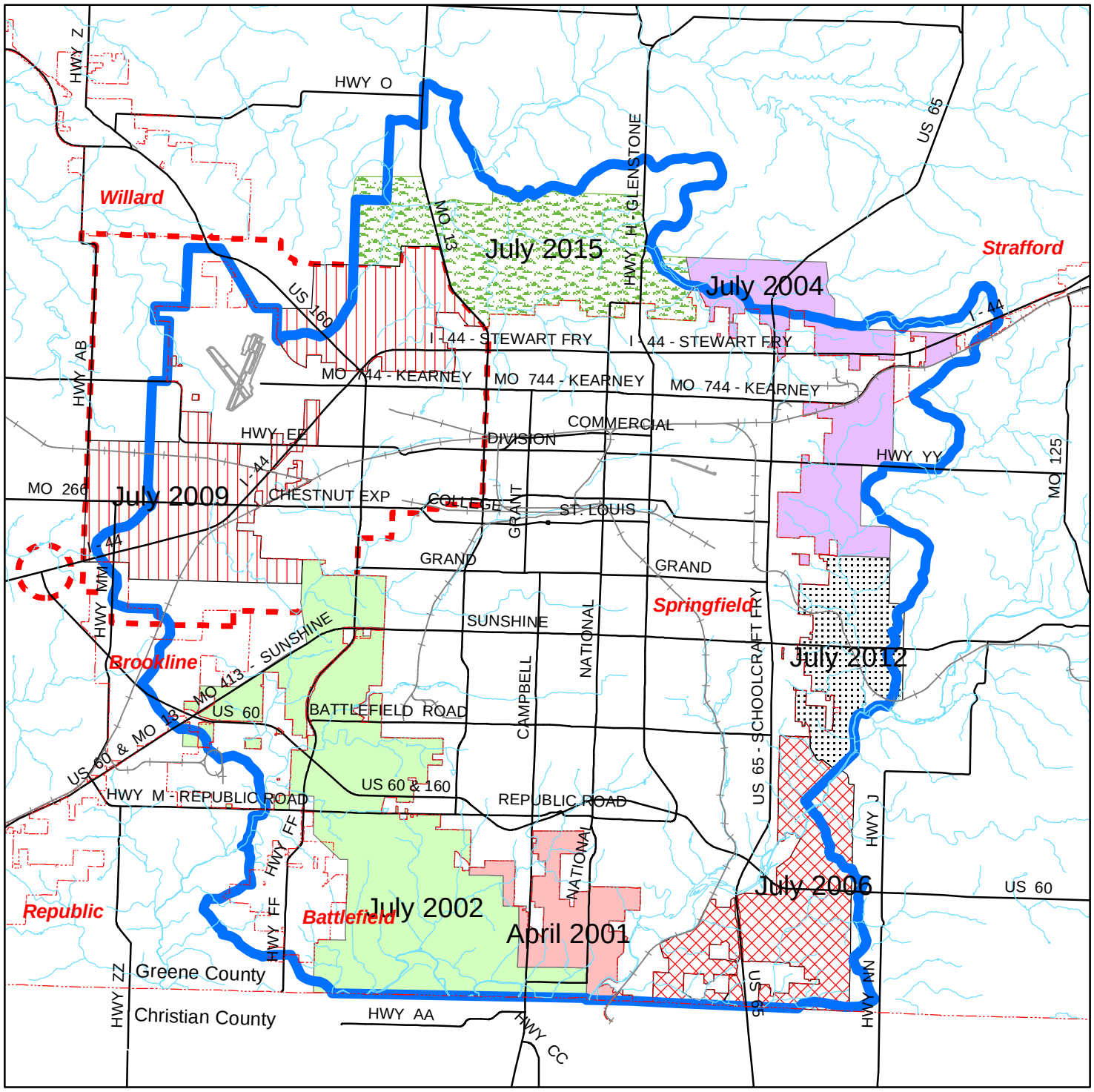
Cities in Missouri can annex in two ways. First, the owner of property adjacent to the city limits can request annexation by the city. The city can then annex the property if it chooses. Second, a city can initiate an annexation, but the annexation must go to a vote of the people. To be approved, a city initiated annexation must be approved by a majority of both the voters in the city and a majority of the voters in the area to be annexed. If that fails, the annexation can be approved in a second election by a 2/3 vote of the combined residents of both the city and the area to be annexed.

If a property owner outside the City of Springfield and not contiguous to the city wants to receive sewer service from the City, the property owner must sign an irrevocable consent to annex agreement. This obligates the owner to annex when the property is contiguous. Currently there are 11 irrevocable consent petitions within the study area.

The majority of study area property within the municipal boundary of the City of Springfield was annexed before the changes to the Missouri annexation laws in the 1970s. Since that time, annexations have been more difficult and have slowed considerably. Since 1970, study area annexations have been focused on properties in and around the Springfield-Branson Regional Airport and the Partnership Industrial Center West (PIC West).

Analysis. Missouri law makes it difficult for cities to annex. Some portions of the study area are likely to be annexed into the City of Springfield because they need sewer service. Springfield has an Urban Service Area (discussed later in this document) which indicates the area in which the City is willing to provide sewer by the year 2020. It is the City's intent to eventually annex the entire Urban Service Area. It is also possible that some portions of the study area will be annexed into Willard or Brookline, especially if Brookline merges with Republic and is able to offer sewer service. The City of Brookline and the City of Republic are currently discussing the possibility of a merger that would create a city of significant size immediately west of the City of Springfield. The merger would allow the existing City of Battlefield to receive sewer service from Republic, facilitating the development of large tracts of land in Brookline that have excellent access from I-44, James River Freeway, and Highway MM.

The adopted Comprehensive Plan lays out a timetable for large, city-initiated annexations. The first step in the process as set out in state law requires adoption of a plan of intent. City Council would then decide if the City could adequately serve the area and then would vote to initiate the annexation. Such city initiated annexations must to go a public vote (and be approved by both residents of the area to be annexed and residents of the city as a whole). The city initiated annexation must also go to a judge for a declaratory judgement that the city is able to provide city services to the area to be annexed within a reasonable time (3 years). The annexation dates in the Comprehensive Plan represent a goal, not a commitment.



Legend

- Railroads
- Major Roads
- Urban Service Area Boundary
- Northwest Springfield Study Area

Note: Dates represent approximate times to complete studies upon which the Springfield City Council may base decisions regarding City Initiated Annexations.

Sequence of Urban Development Staging

Figure 4

Timing For City-Initiated Annexation Studies

Source: Springfield Greene County Comprehensive Plan

Northwest Springfield Development Study

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6. Current Land Use Pattern

Existing Conditions. The Northwest Development Study area contains a wide variety of land uses. Part of the study area has been developed at urban densities over many decades. Other portions of the study area, primarily in the unincorporated part of the study area, are either underdeveloped or are developing. The generalized pattern of current land use in the Study Area, is illustrated by Figure 5. Approximately 40 percent of land in the study area is developed, including property developed for single family homes on large lots. Approximately 46% of the study area is classified as agricultural in use and 15% as vacant. It is important to remember that the western and north central portions of the study area are outside the Urban Service Area and are not expected to receive sewer service.

The eastern and southeastern portions of the study area are developed at urban density and are inside the City of Springfield. The northeastern portion of the study area is about 2/3 vacant or agricultural and about 1/3 single family development. The majority of that development is on large lots and is not on sewer. Commercial uses in the study area are clustered along the following arterial streets: Kearney, Kansas Expressway, Chestnut, and West By-Pass. Much of the existing commercial development has been in existence for decades and suffers from poor upkeep. Other parts of the study area have more viable commercial uses, particularly on the Kansas Expressway near I-44 and on segments of Chestnut Expressway and West By-Pass. In the more rural parts of the study area there are scattered commercial uses intended to serve only the immediate community.

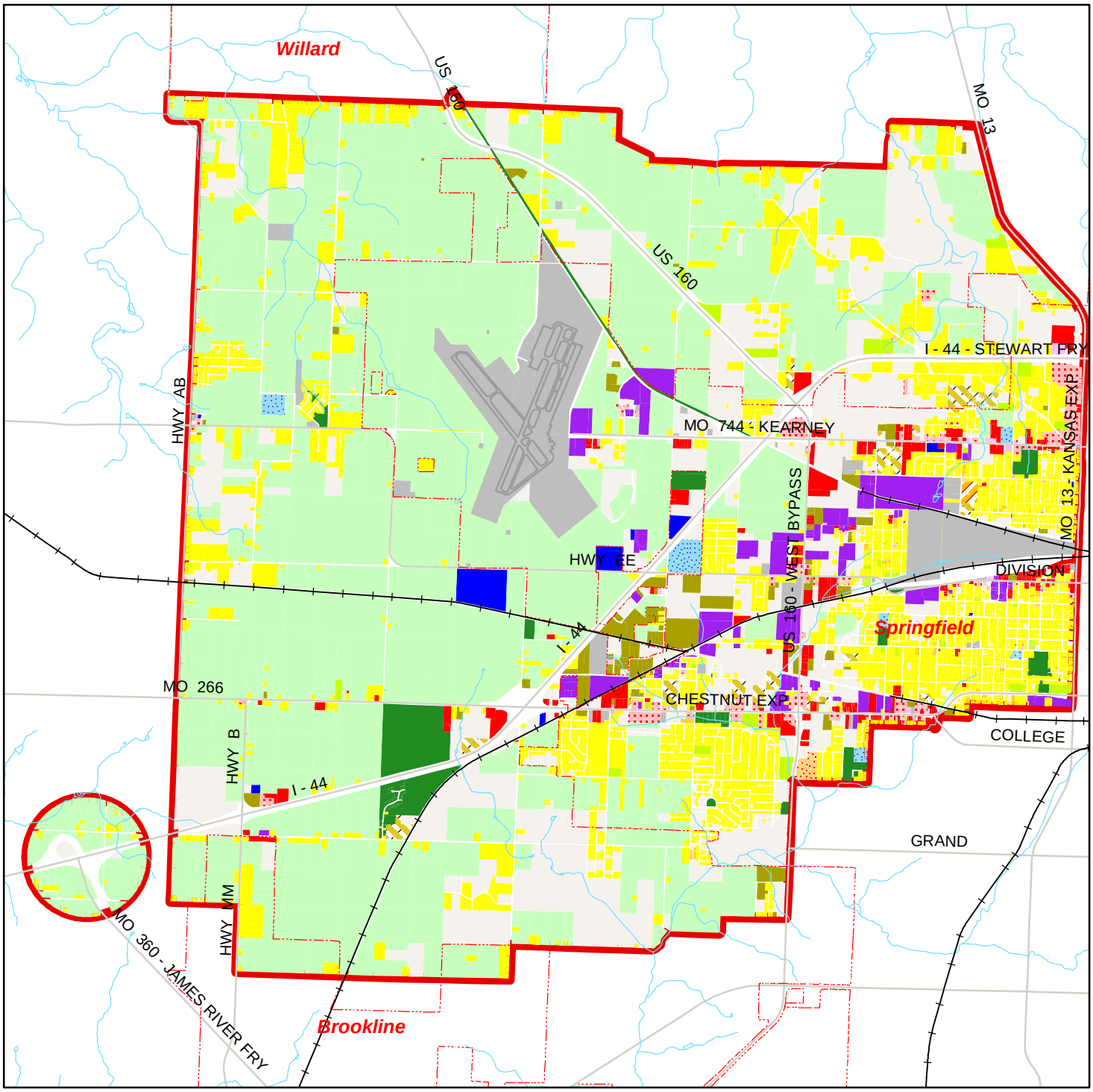
Two schools in the study area are part of the Willard School District: Willard Central Elementary and Willard Elementary South. The Springfield School District also has two school in the area: Westport Elementary and Bissett Elementary. Other community or public uses in the area included a number of churches, cemeteries, city parks, and the Deer Lake Golf Course (a semi-private 18 hole golf course with an open guest policy).

The northwestern portion of the study area is dominated by the Springfield-Branson Regional Airport and related uses. The airport owns approximately 2,631 acres. Adjacent to the airport is the Army National Guard facility. The Guard has a total of 93 acres and expects to expand it's facility within the next several years. The Guard AVCRAD unit performs aviation repairs for aircraft from fourteen states. In addition, to the National Guard facility, a number of industrial uses are clustered near the airport. The City of Springfield, Greene County, and City Utilities are developing the Partnership Industrial Center West (PIC West) immediately south of the airport.

The land use category “Transportation, Communication, and Utilities” has a strong impact on The Northwest Development Study area. In addition to the airport, railroads have a significant presence in the study area. Three rail lines cross the study area and come together in the east-central part of the study area to form a large triangle of rail lines.

The western half of the study area is mostly agricultural in use. Likewise, the northern-most part of the study area is primarily agricultural and large-lot single family uses. The western edge of the study area and the area northeast of the airport are outside the Urban Service Area boundary and therefore are not expected to receive sewer service or urban quality roads within the next 20 years. This lack of sewer service will limit development in these area. The area immediately surrounding the James River Freeway/I-44 interchange is also part of the study area. This area is a mix or agricultural and single family uses. Those uses are expected to continue for the foreseeable future due to a lack of access

Development is occurring in the study area. A significant number of new single family subdivisions have been built and are being built in the southern part of the study area. This is a trend that is likely to continue. Industrial uses are also being built in the areas around the airport. That is also a trend that is likely to continue.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

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Land-Use Classification

- Single-family
- Duplex
- Multi-family
- Mobile Home Park
- Group Quarters
- Light Commercial
- Heavy Commercial
- Office
- Quarries and Mining
- Warehousing,Storage, and Wholesale
- Transportation, Communications, and Utilities
- Manufacturing
- Educational and Cultural
- Public Buildings, Offices, and Social Services
- Hospitals
- Quasi Public (Churches, etc.)
- Parks and Recreation
- Agricultural and Grazing
- Vacant and Forest
- Rights-of-Way

Northwest Springfield Development Study

Figure 5

Existing Land Use 2001

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Existing Land Uses 2001

	Total Acres	Percent of Study Area	Percent of Use in Springfield	Percent of Use in Green County	Percent of use in Brookline &Willard
Single Family Residential	3,251.7	13.85 %	53.65 %	44.07 %	2.26 %
Multi-Family Residential (2+ DU)	51.87	0.22 %	85.37 %	14.63 %	0 %
Mobile Home	150.04	0.64 %	58.21 %	41.79 %	0 %
Retail	537.57	2.29 %	86.61 %	14.14 %	0.85 %
Office	16.77	0.07%	87.89 %	12.11 %	0 %
Industrial	475.77	2.03 %	87.39 %	12.61 %	0 %
Warehousing	299.2	1.27 %	33.24 %	66.67 %	0 %
Community/Public	110.01	0.46 %	6.06 %	93.94 %	0 %
Quasi-Public	127.91	0.54 %	57.84 %	42.16 %	0 %
Transportation, Communication, Utilities	1,135.18	4.84 %	95.3 %	4.7 %	0 %
Parks and Open Space	373.82	1.59 %	26.33 %	73.67 %	0 %
Right-of-way	2,404.73	10.24 %	55.32 %	44.30 %	.38 %
Vacant	3,624.61	15.44 %	56.37 %	41.66 %	1.97 %
Agricultural	10,922.08	46.52 %	21.73 %	76.19 %	2.08 %
Total	23,478.24	100.00 %	N/A	N/A	N/A

Source: City of Springfield Planning and Development Department

Analysis. The existing pattern of land use differs significantly between the City of Springfield portion of the study area and the unincorporated portion in Greene County. The land use inside the City is at urban densities and is served by city sewer. The Springfield-Branson Regional Airport, also within the City of Springfield, makes up a large portion the study area. This property, which is zoned for industrial uses, has a significant impact on the pattern of land uses. Large airport zones (defined by state

law) extend from both ends of the runways and limit the amount and type of development that is allowed. Because of the benefits of air, rail, and interstate access near the airport, a large area near the airport and planned airport access road is expected to develop for industrial, office, and warehousing uses and other associated uses. It is important to remember that the western and north central portions of the study area are outside the Urban Service Area and are not expected to receive sewer service in the next twenty years. The lack of sewer service will curtail development and will limit development to large lot development (to facilitate use septic systems).

Within the City of Springfield portion of the study area, a significant portion of the existing non-residential development (retail, industrial, and warehousing) has been in existence for decades and suffers from lack of upkeep. Other non-residential areas have more viable commercial uses. These uses are located along Kansas Expressway near I-44 and on segments of Chestnut Expressway and West By-Pass.

Significant changes in existing land uses may occur in the City of Brookline if the merger that is being discussed with the City of Republic actually occurs. The City of Republic would be in a position to extend sewer service at some time in the future. The City of Brookline feels that once sewer service is provided, development would be attracted to the area because of the access provided by the interchange at I-44 and Highway MM/Highway B. The nearby interchange at the James River Freeway (MO 360) and I-44 will not develop due to lack of access. That interchange does not, and according to MoDOT will not, provide access to abutting properties. Changes in the pattern of existing land use are most likely to occur in the northeast and south/southwest, where residential uses are anticipated, and around the Springfield-Branson Regional Airport were industrial uses and business park uses are likely to develop.

7. Zoning Pattern

Existing Conditions. The pattern of zoning in the Northwest Development Study area is illustrated by Figure 6 and includes zoning from both the City and the County. There is a great deal of similarity between the city and the county zoning categories. However, some differences do exist. When property is annexed into the City of Springfield, a property is placed into the comparable zoning category. The property owner is free to make an application for a different zoning category.

The largest zoning category in both the study area as a whole and in the unincorporated portion of the study area is A-1, Agriculture (totaling 8,125.95 acres or 34.61% of the study area). The Agriculture zoning category allows farming as well as housing on lots five acres or greater in size. The other large category of Greene County zoning is R-1, which allows housing on parcels as small as 10,000 square feet if they are served by public sewer and water.

The second largest zoning category in the study area as a whole is industrial/ manufacturing uses (totaling 5,490.38 acres or 23.38% of the study area). The property zoned for industrial uses includes the Springfield-Branson Airport and PIC West. If airport property is excluded from the total, the Northwest Development Study area still as 3,175 acres of industrial zoning. Areas zoned for industrial/manufacturing uses are primarily located east of the airport and between the railroad tracks that run through the center of the study area and meet near the intersection of Kansas Expressway and Division. Other manufacturing/industrial uses are located north of Chestnut Expressway.

The third largest zoning category in the study area as a whole is residential use (totaling 5,738.61 acres or 24.43% of the study area). Single family residential uses make up 5,290.09 acres or 22.53% of the study area; multi-family residential uses occupy 336.1 acres or 1.43%, and mobile home uses occupy 112.42 acres or 0.47% of the study area.

Property is zoned for commercial uses along several major roads: Kearney, Chestnut Expressway, West By-Pass, and Kansas Expressway. West By-Pass and Division have a mix of industrial and commercial zoning. The study area has very little office zoning, only 11.35 acres or 0.05% of the study area.

Most of the property in the unincorporated part of the county is zoned for agriculture or single family (R-1) uses. When such county property develops at urban density or in commercial or industrial uses, it is required to have city sewer service. At that time the property must either be annexed to the city, if contiguous, or the owner must sign

an irrevocable consent to annex petition and annex when the property becomes contiguous to the city.

EXISTING ZONING

	Total Acreage	Percent of Total	Zoning Districts
Single Family	5,290.09	22.53%	R-SF, A-R, R-1
Multi-Family	336.1	1.43%	R-TH, R-2, R-LD, R-MD, R-HD
Mobile Home	112.42	0.47%	R-MHC
Office	11.35	0.05%	O-1, O-2
Planned Development	711.18	3.10%	PAD, PD
Commercial	972.66	4.14%	GR, HC, CS, C-1, C-2, C-3, LB
Industrial	5,490.38	23.38%	RI, LI, GM, HM, IC, M-1, M-2
Agriculture	8,125.95	34.61%	A-1
Rights-Of-Way	2,031.83	8.64%	
City of Brookline	398.46	1.68%	
City of Willard	2.25	0.01%	
TOTAL	23,482.67	100%	

Source: Springfield Planning and Development Department

R-SF - Single-Family Residential District (City of Springfield)
A-R - Agricultural-Residence District (Greene County)
R-1 - Suburban Residence District (Greene County)
R-TH - Residential Townhouse District (City of Springfield)
R-2 - One and Two-Family Residence District (Greene County)
R-LD - Low-Density Multi-Family Residential District (City of Springfield)
R-MD - Medium-Density Multi-Family Residential District (City of Springfield)
R-HD - High-Density Multi-Family Residential District (City of Springfield)
R-MHC - Manufactured Home Community District (City of Springfield)
O-1 - Professional Office District (Greene County)
O-2 - General Office District (Greene County)

PAD/PD - Plot Assignment District (Greene County)/Planned Development (City of Springfield)
GR - General Retail District (City of Springfield)
HC - Highway Commercial District (City of Springfield)
CS -Commercial Service District (City of Springfield)
C-1 - Neighborhood Commercial District (Greene County)
C-2 - General Commercial District (Greene County)
C-3 - Rural Commercial District (Greene County)
LB - Limited Business District (City of Springfield)
RI - Restricted Industrial District (City of Springfield)
LI - Light Industrial District (City of Springfield)
GM - General Manufacturing District (City of Springfield)
HM - Heavy Manufacturing District (City of Springfield)
IC - Industrial Commercial District (City of Springfield)
M-1 - Light Manufacturing or Industrial District (Greene County)
M-2 - General Manufacturing or Industrial District (Greene County)
A-1 - Agriculture District (Greene County)

Analysis. It is worth taking a closer look at the amount of property in the Northwest Development Study area zoned for industrial uses. Within the study area, there are 5,490 industrial acres but 42% of that property is owned by the airport. If the airport property is subtracted from the total of industrially zoned property in the study area, there are only 3,175 acres left. Of those 3,175 industrial acres, 883 acres (27.8%) are vacant. This compares with city-wide totals of 11,144 industrially zoned acres with 8,828 acres remaining after the airport property is removed. City wide (after subtracting the airport property) 25% or 2,202 acres of industrially zoned land is vacant. After subtracting the airport property, the study area has 3,175 acres of industrially zoned land (28% vacant) and the City of Springfield as a whole has 8,828 acres of industrially zoned land (25% vacant). When the airport property is subtracted, the Northwest Development Study area has a percentage of industrially zoned property (3.8%) comparable to the city-wide percentage of industrially zoned property (4.3%). The impact of the airport on the Northwest Development Study area cannot be over-emphasized.

INDUSTRIALLY ZONED LAND

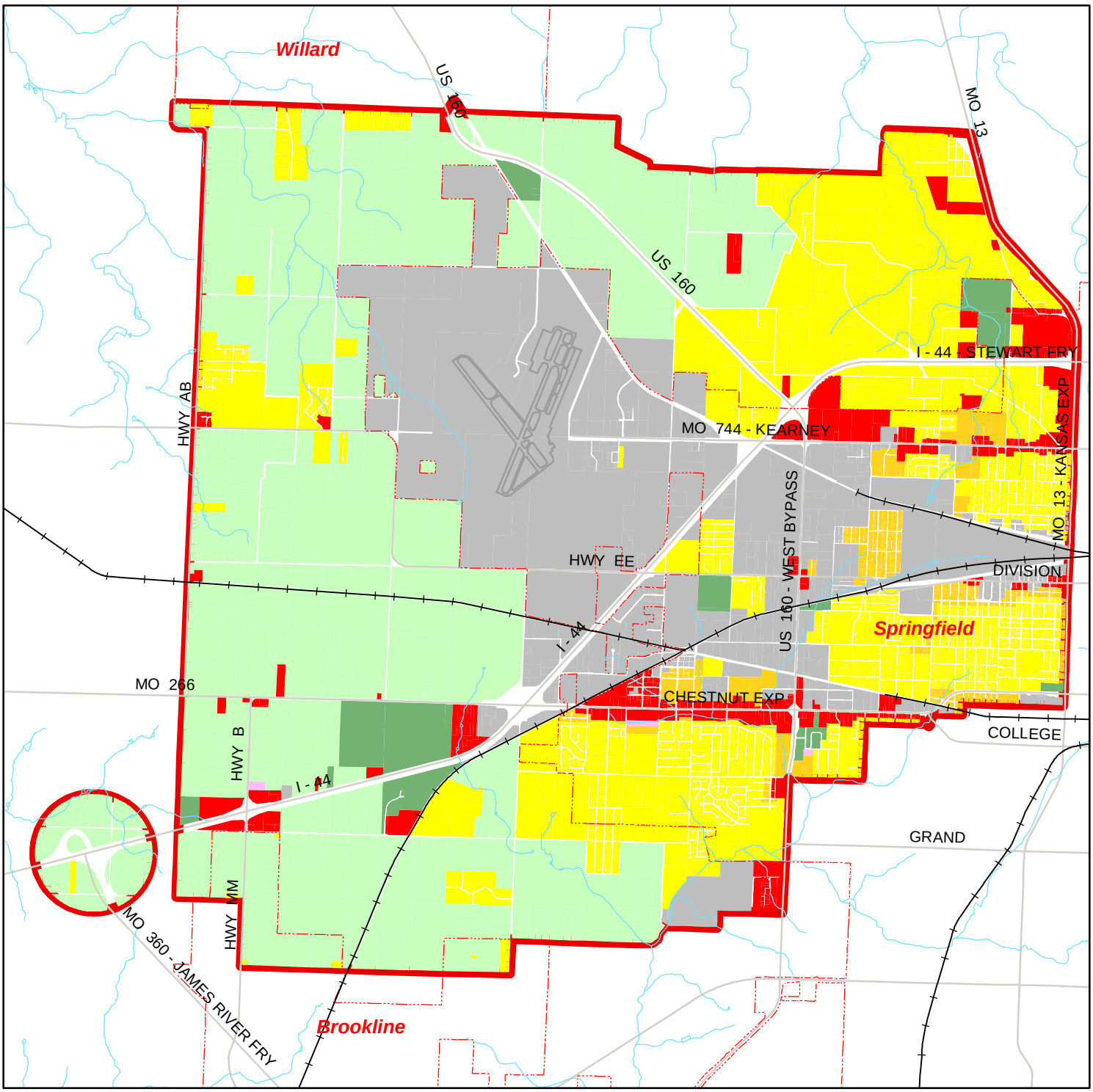
	In NW study area	In NW (excluding airport land)	In City of Springfield	In City of Springfield (excluding airport land)
Total industrial zoning	5,490 acre	3,175 acres	11,144 acres	8,829 acres
Total acreage vacant and zoned industrial	3,198 acres	883 acres	4,518 acres	2202 acres

Source: Springfield Planning and Development Department

Zoning Ordinances list zoning categories and describe the allowed uses and the requirement for each individual zoning category. Greene County and the City of Springfield have both adopted their own zoning ordinances and their own subdivision ordinances. Both Greene County and the City of Springfield have adopted zoning maps showing which zoning category is applied to each parcel of land within their jurisdiction. If a property owner wishes to change the zoning category of his property, he must go first to the jurisdiction's planning commission or planning board for a recommendation and then to the City Council or the County Commission for approval or denial of his request.

Zoning changes should be in line with the future land use map in the adopted Comprehensive Plan (see following section). When considering a rezoning request, decision makers will consider the objectives and actions in the adopted Comprehensive Plan and existing conditions and trends in the community as well as the future land use map. Changes in the zoning ordinances are made from time to time. Changes may be necessitated by concepts in the adopted Comprehensive Plan.

Additional acreage in the Northwest Development Study area is likely to be rezoned to residential uses as the outward growth of the City of Springfield continues. Additional commercial zoning will be needed to serve new residential areas. The study area could also make use of more property zoned for multi-family uses. The City should explore rezoning some industrial property to residential or commercial (retail or office) uses.



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Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

ZONING

- Agricultural A-1
- Single-Family R-1, R-SF, A-R
- Multi-Family R-2, R-3, R-4 R-MD, R-MHC, R-TH
- Commercial C-1, C-2 C-3, CS, GR, HC
- Office O-1, O-2
- Industrial M-1, M-2 GM, HM, IC, LB, LI
- Planned Developments PAD, PUD, PD

Figure 6

Existing Zoning 2004

Northwest Springfield Development Study

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8. Planned Land Use from Comprehensive Plan

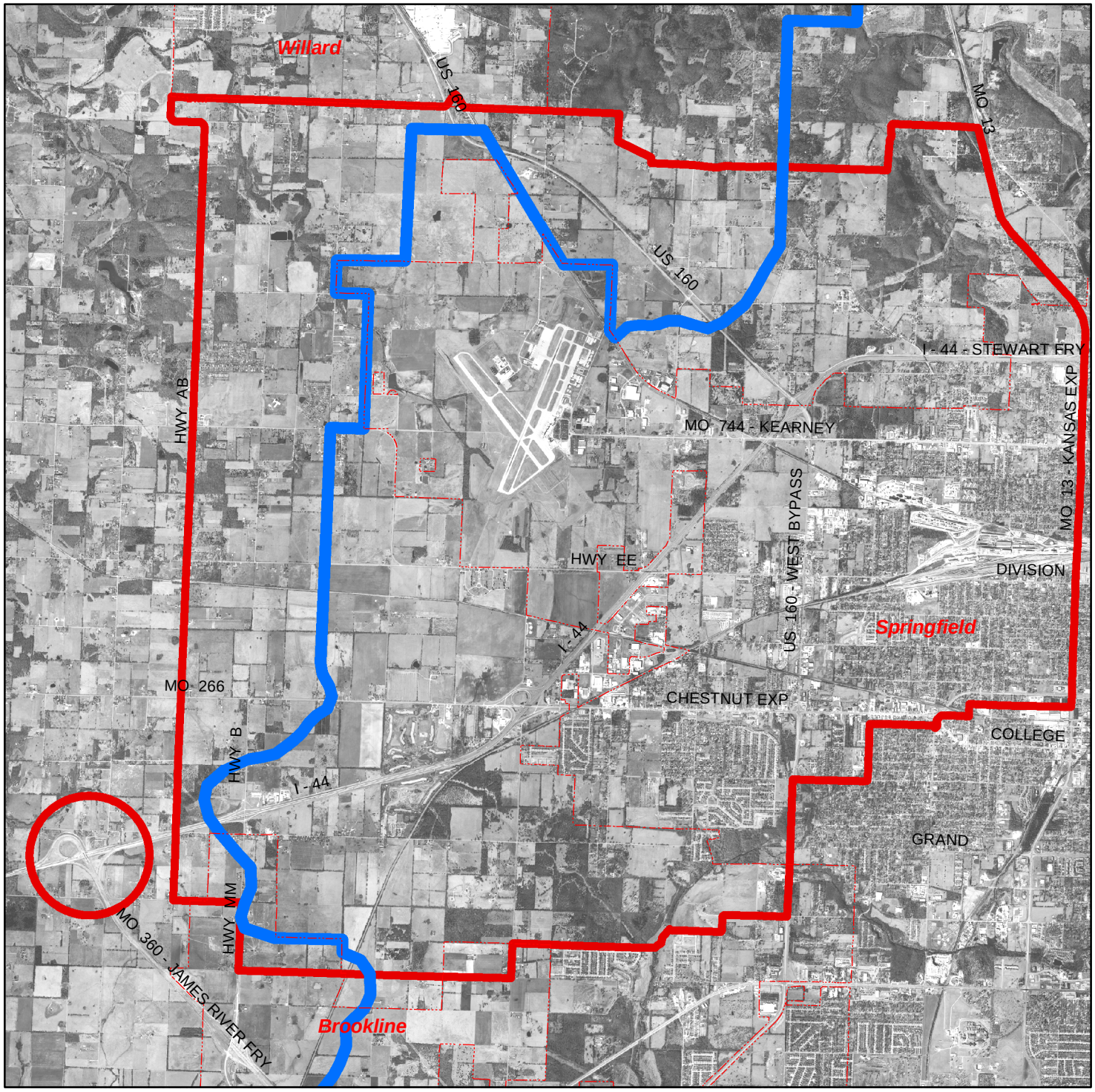
Existing Conditions. The City of Springfield has adopted the Springfield-Greene County Comprehensive Plan. The various elements of the plan were adopted between 1999 and 2001. The plan was the result of a public process in which over 350 people participated in 13 focus groups for over 18 months. City-wide surveys and major public events (drawing up to 1,000 participants) were used to gather additional citizen input for the Comprehensive Plan. Greene County has adopted parts of the Comprehensive Plan and is in the process of considering adoption of additional parts of the Comprehensive Plan.

There are four major elements from the *Growth Management and Land Use Plan Element* of the Comprehensive Plan that apply to the study area:

- The Urban Service Area
- The Activity Center concept
- The Land Use Plan map
- The Parks, Open Space and Greenway Plan

The Urban Service Area The City of Springfield and Greene County established the Urban Service Area in 1984. The Urban Service Area boundary (see Figure 7) delineates the area where the City of Springfield will consider providing sewer service and where Greene County will consider building urban roads. However, the Urban Service Area does not imply a timetable for providing these services. The boundary of the Urban Service Area can be expected to be revised periodically so that an adequate amount of developable land is provided to meet market needs without unduly increasing land prices. The Urban Service Area boundary might also be expanded to address environmental concerns by providing sewer service. A more complete description of the Urban Service Area can be found on pages 18-15 through 18-20 of the *Vision 20/20 Growth Management and Land Use Pla*n.

Most of the study area is within the Urban Service Area. Only the extreme western fringe of the study area and a portion of the northern part of the study area are outside the urban service area boundary. The areas outside the Urban Service Area lie in the following drainage basins: Little Sac River and Flint Hill Branch Basin, Clear Creek and Rainer Branch Basin, and the Sac River/Pond Creek Basin. More information on development in these basins can be found in the Springfield Urban Service Area Policy (revised 1999).



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Legend

City Limits to 1 January, 2005

Study Area Boundary

Urban Service Boundary

Figure 7

Aerial Photo with Urban Service Area

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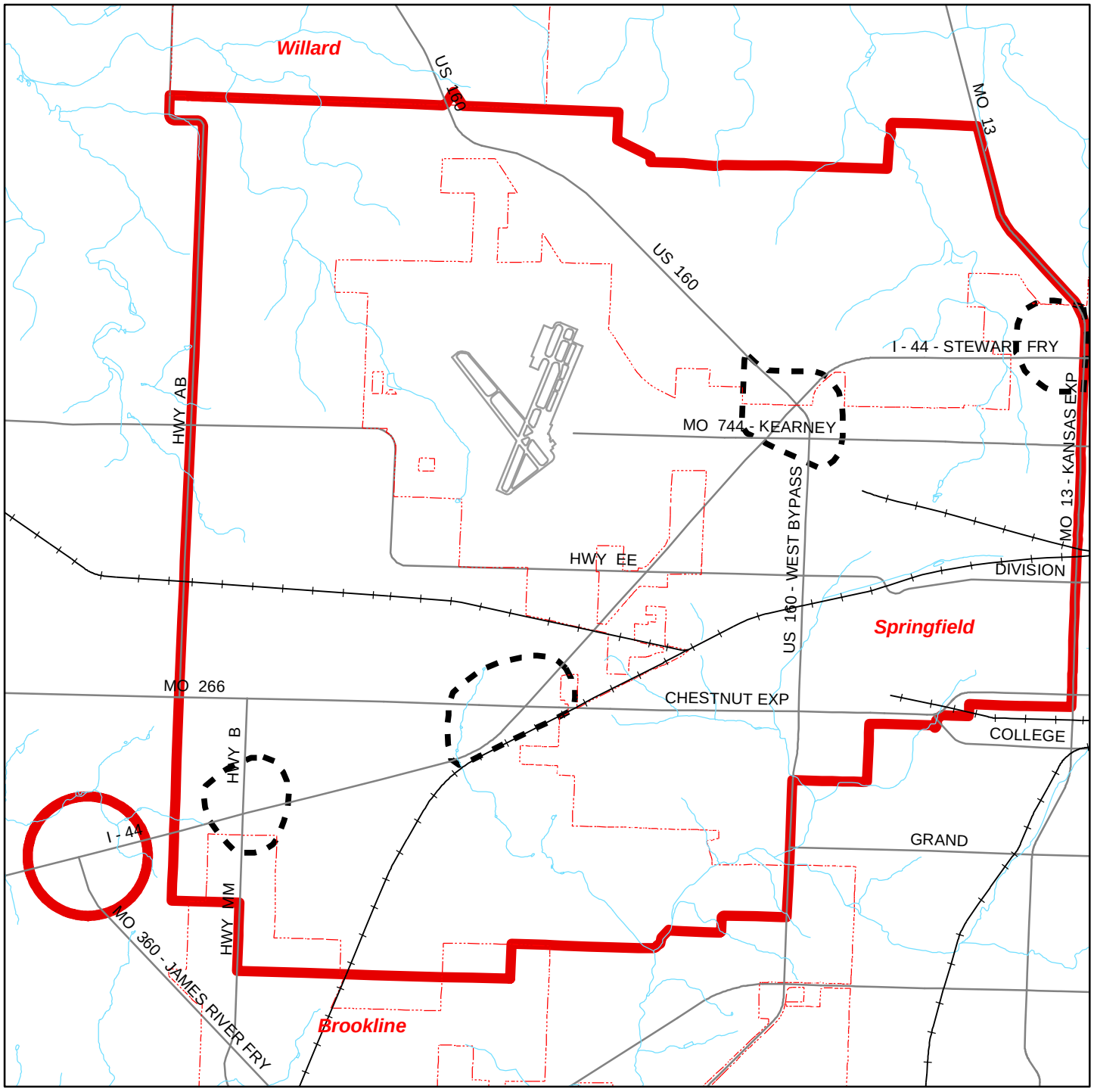
Northwest Springfield Development Study

The Activity Center Concept The *Springfield-Greene County Comprehensive Plan* proposes four Activity Centers in the Northwest Development Study area: (1) I-44 and Highway MM, (2) I-44 and Chestnut Expressway, (3) I-44 and Highway 160/West By-Pass, and (4) I-44 and Kansas Expressway. The *Vision 20/20 Growth Management and Land Use Plan* describes Activity Centers as follows: Activity Centers, whether existing or potential, will be locations of significant business and high-density housing development. It is intended that additional high intensity retail, office, and residential development be concentrated in and around the Activity Centers so as to optimize transportation investments, citizen convenience, investor confidence, a compact growth pattern, and a sense of urban excitement. Land in each Activity Center would be intensively and efficiently used. The Comprehensive Plan states that it should be the policy of the City and County to promote relatively dense and diverse concentrations of retail, office and multi-family residential, and other land uses in order to create positive synergy within the Activity Centers. However, Activity Centers will not be the only locations in Springfield and Greene County for businesses or multiple-family housing. Activity centers should have well planned auto, transit, bicycle, and pedestrian access. This combination of access, density and diversity should allow the Activity Centers to grow into community focal points.

The Comprehensive Plan states that the elements of Activity Centers will vary, but that each should include, at a minimum, retail and office buildings, and some combination of the following: multi-family housing, restaurants, hotels, entertainment, community facilities such as churches, public agencies, libraries, parks, etc. All Activity Centers should be important locations for development, investment, jobs and services. They should be diverse, should be served by all major and alternative transportation modes, and should be focal points of public investment. Activity Centers should epitomize many of the desirable design principles of a town or city, but accomplish them on a smaller scale. Therefore, the following design principles should be observed when preparing or reviewing plans for an Activity Center:

- each should have a diversity of uses and users
- each should have attractive and useable public space toward which the private development is oriented
- each should accommodate the pedestrian, the bicyclist and the transit user
- each should have a link, either direct or indirect, to the regional open space network
- each should have a definable center and edge.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Activity Centers

Figure 8

Activity Centers

Source: Springfield Greene County Comprehensive Plan

Northwest Springfield Development Study

The Comprehensive Plan specifically addresses the following activity centers located in the Northwest Development Study area:

- *I-44 and Highway MM.* This interchanges has significant future potential as a Major Activity Center when the State improves MM from James River Freeway to I-44 and if the airport terminal facility is relocated to the southwest side of the airport.
- *I-44 and Chestnut Expressway.* Development in this area may increase as sanitary sewer becomes available. This could serve as an Activity Area for residents in west Springfield.
- *I-44 and Highway 160/West By-Pass*. The proximity to the airport and available vacant land make this interchange a possible future Activity Center.
- *I-44 and Kansas Expressway.* This interchange already functions as an activity center for north Springfield with the retail activities located south of I-44 and north of I-44. The proximity of Dickerson Park Zoo and the Fairgrounds provide unique regional attractions and activities.

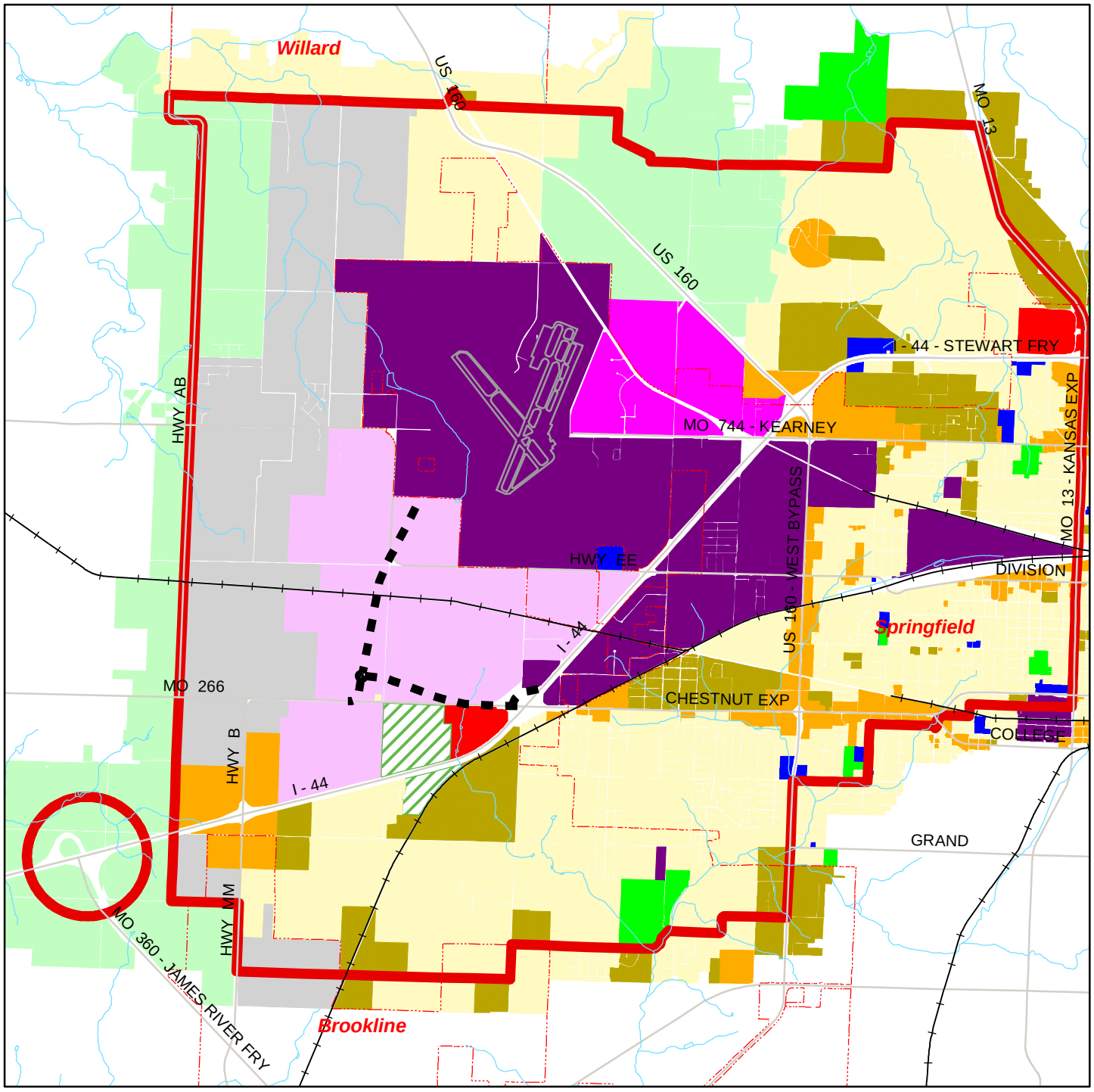
The *VISION 20/20* Land Use Plan Map. The portion of the *Vision 20/20* land use plan map which covers the Northwest Development Study area is shown by Figure 9. Much of the area is shown on the Future Land Use Plan as industrial uses. This reflects, for the most part, the existing zoning in the area. The areas shown for industrial uses include the Springfield-Branson Regional Airport, a large amount of surrounding land that would profit from location near the airport, and the existing Partnership Industrial Center West. The land shown for industrial use also includes property between and near the rail lines that cross the study area. In addition, industrial uses are also shown for property adjacent to I-44.

Roughly the same amount of land is shown for residential uses. Most of the residential land is set aside for single family detached uses. In addition to the existing subdivisions, the residential areas extend on the east side of the study area north to Farm Road 94. The plan shows the spread of single family subdivisions across the southern portion of the study area west to the edge of the Urban Service Area. The four activity centers (discussed above) are included in the Future Land Use Plan. Along major road corridors (Kearney, West By-Pass/160, and Chestnut/266) the plan shows medium or high density housing as well as medium intensity retail/office/housing. In addition, small areas of multi-family are shown scattered around the study area.

The areas in the western and northern portions of the study area that are outside the Urban Service Area (discussed earlier) are shown as the Urban Reserve Area.

Protection of the Urban Reserve Area is intended to ensure that growth occurs in a cost-effective and logical manner. The Urban Reserve is a broad ring of land just outside the Urban Service Area in which residential development densities are very low and future arterial road alignments are unobstructed. The Springfield-Greene County Comprehensive Plan states that the allowable density in the Urban Reserve is 4 houses per 40 acres. The minimum lot size is 3 acres (a sufficient size to meet Country septic system and water well requirements). Rural clustering is an option for this area.

Analysis. The intent of this section of the Northwest Development Study is to discuss how the adopted Comprehensive Plan shows anticipated future land uses. Later sections of this document will suggest changes to the future land use map in the Comprehensive Plan and will suggest new actions to be included in the plan. The Northwest Development Study is intended to be used to amend the adopted Springfield-Greene County Comprehensive Plan. Citizen input will be gathered in public meeting(s) and the study will be taken separately to the Springfield Planning and Zoning Commission and to the Greene County Planning Board. Any amendments to the adopted Comprehensive Plan will have to be approved separately by the Springfield City Council and the Greene County Commission.



Legend

- Proposed Airport Road
- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

0 0.5 1 2 Miles

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Land-Use Classifications

- General Industry Transportation & Utilities
- Low-Density Housing
- Medium / High Density Housing
- Park
- Medium Intensity Retail, Office, Housing
- High Intensity Retail, Office, Housing
- Business Park
- Light Industrial Warehousing, Office
- School
- Golf
- Community-Public
- Urban Reserve Area
- Rural Area

Figure 9

Future Land-Use 2020

Source: Springfield Greene County Comprehensive Plan

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Northwest Springfield Development Study

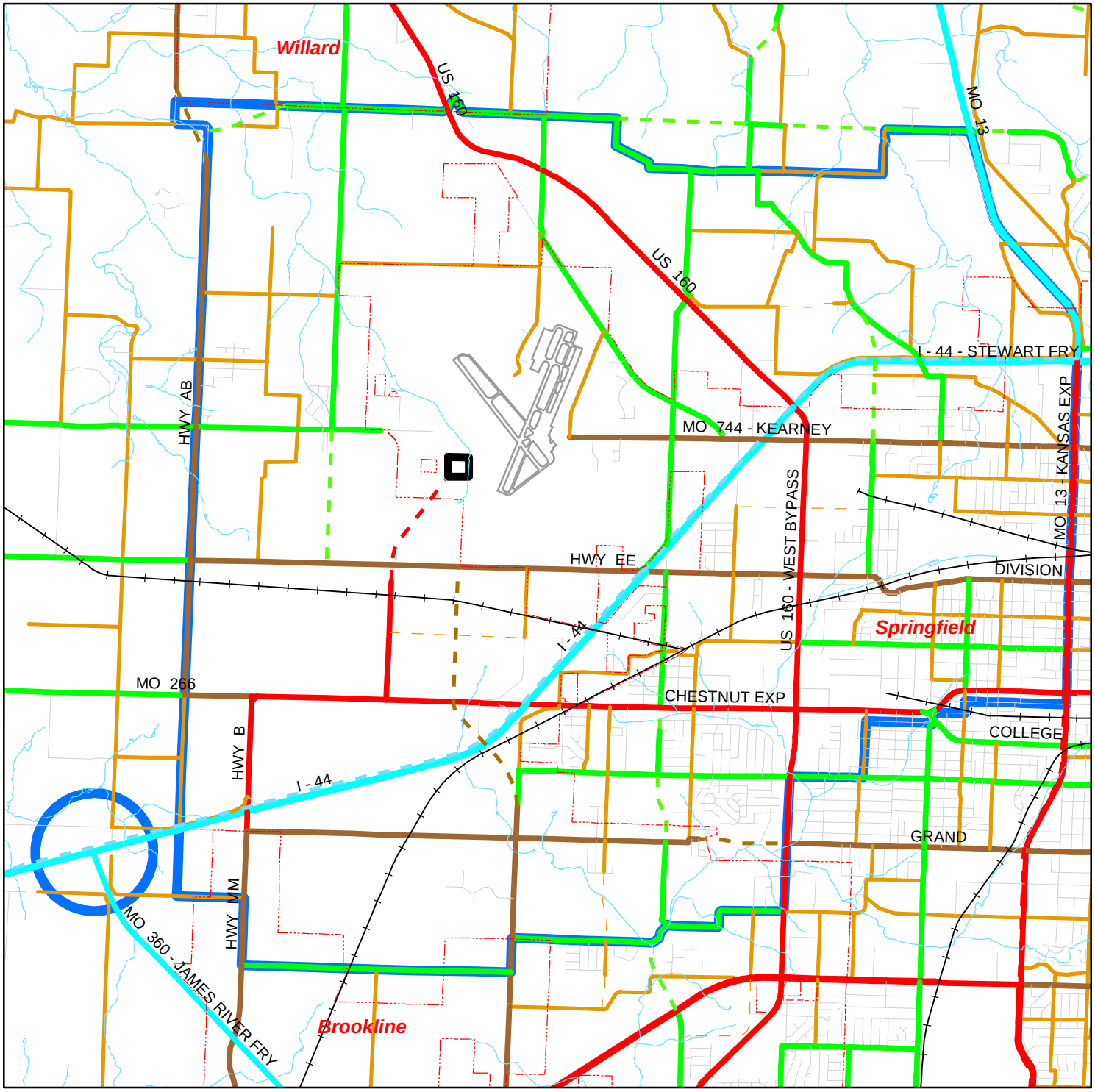
9. Road and Transit Systems

Existing Conditions. Road System. The MPO's Major Thoroughfare Plan Map covers the Northwest Development Study area and is illustrated by Figure 10. There are four expressways or freeways in the study area: Interstate-44, US 160/West By-Pass, Kansas Expressway/Highway 13, and Chestnut Expressway. Primary arterials in the study area include: Haseltine/FR 115, Highway B, Highway AB, Kearney/744, Division/EE, Chestnut/266, and Grand Street. Secondary arterials include: West Avenue, Fulbright Avenue, Golden Avenue, Westgate Avenue, FR 103, FR 94/New Melville Road, Willard Road, Division/EE, Nicholas, Mt. Vernon, and Yale Road.

Roadways within the study area are in the jurisdiction of the Missouri Department of Transportation, the City of Springfield, Greene County, the City of Brookline, and the City of Willard. MoDOT facilities include: Interstate-44, Kansas Expressway/Highway 13, West By-Pass/Highway 160, Kearney, Division/EE, Chestnut Expressway/266, and Highway AB. The roadways called "farm roads" are in the jurisdiction of Greene County. Other roadways are under the jurisdiction of the municipalities.

In addition to classifying streets and road, the Transportation Plan sets out design standards that apply to all of the Northwest Development Study area. The current design standards and generalized characteristics for each type of street classification are listed in Table 20-1 and Table 20-2 of the adopted *Transportation Plan Element* of the *Vision 20/20 Comprehensive Plan*. The standards describe the required number of lanes, amount of right-of-way, pavement width, parking limitations, medians, signalization, driveway spacing and sidewalk requirements for each of the roadway classifications.

The existing Major Thoroughfare Plan lists planned roadways. The following table summarizes the new roads that are currently planned for the Northwest Development Study area. For a full listing of roadways within the Northwest Development Study area see Appendix A.



0 0.5 1 2 Miles

1:67,000

Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

Classification

- LOCAL
- COLLECTOR
- EXPRESSWAY
- FREEWAY
- FUTURE ARTERIAL
- FUTURE COLLECTOR
- FUTURE EXPRESSWAY
- FUTURE FREEWAY
- FUTURE SECONDARY
- NEW TERMINAL BLGD
- PRIMARY ARTERIAL
- SECONDARY ARTERIAL

Figure 10

Major Thoroughfare Plan

Source: Springfield Greene County Comprehensive Plan

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Northwest Springfield Development Study

Major Thoroughfare Plan
Planned Roads to the Year 2002

Classification	Road	From - To
Planned Principal Arterial	New Road	Hwy EE to Haseltine/115
Planned Secondary Arterials	New Melville Road	Hwy AB to Miller
	Melville/Fulbright (new)	Melville to Fulbright
	Golden/Melville (new)	Melville to Golden
	FR 103	Hwy EE to EE/Division
	Westgate (new)	Chestnut Expressway to La Siesta
		Mt. Vernon to Grand
Planned Secondary Arterials	New Melville Road	Hwy AB to Miller
	Melville/Fulbright (new)	Melville to Fulbright
	Golden/Melville (new)	Melville to Golden
	FR 103	Hwy EE to EE/Division
	Westgate (new)	Chestnut Expressway to La Siesta
		Mt. Vernon to Grand
Planned Collectors	FR 106	Fr 125 to Melville Road
	Miller	Loren to Bennett
	Atlantic	Eldon to Golden

Existing Conditions. Transit Service. The eastern portion of the Northwest Development Study area is served by transit. Fixed-route transit service in Springfield is provided by City Utilities and focuses on four principal destinations: downtown, Southwest Missouri State University, the library center and Battlefield Mall, none of which are in the Northwest Development Study area. However, six City Utilities bus routes do operate in or on the edge of the study area:

- Line 1 - North Grant. This line touches the eastern edge of the study area. It runs south down Grant Avenue, connecting with the transfer facility. This line runs Monday through Saturday. Between 7:10 and 3:10 on school days, this route extends to Hillcrest High School. It does not run Sunday or at night.

- Line 3 - Mt. Vernon. This line touches the southern edge of the study area. It runs east-west between West By-Pass and the Transfer Facility. It loops on Grand. This line runs Monday through Friday only. Monday through Friday this line goes to the Sheltered Workshop at 3:05. It does not run on Sunday or at night.

- Line 6 - College. This line touches the southeastern edge of the study area. It makes a small loop, connecting with the Transfer Facility. Monday though Friday this line goes to the Sheltered Workshop at 7:05 a.m., 7:35 a.m., and 3:35 p.m. It runs seven days a week and at night.

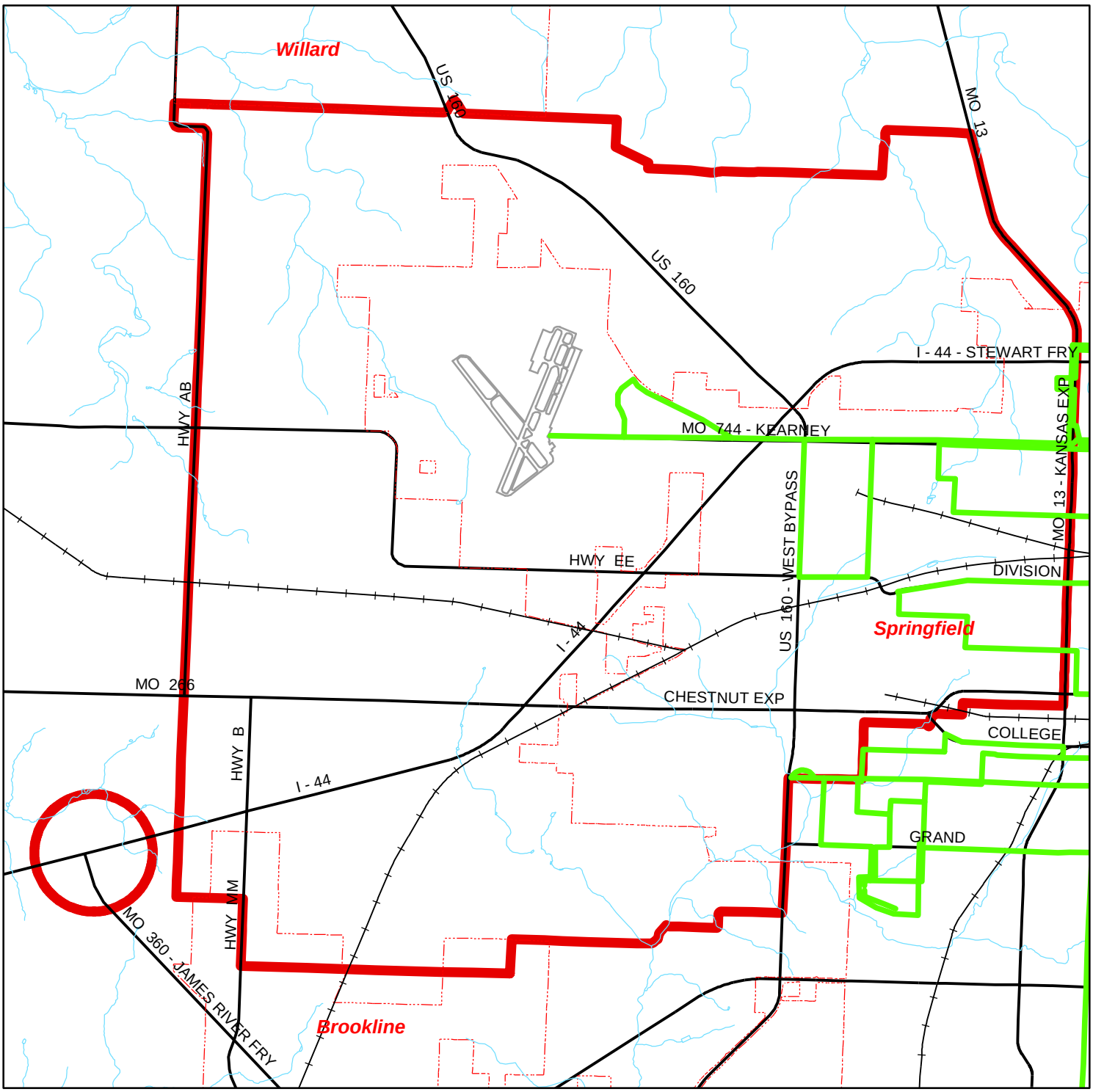
- Line 8 - Norton / West Kearney. Monday through Friday this line runs east-west connecting the Airport with North Town Mall. On Saturday, this line only operates between Kansas Expressway and North Town Mall. This line does not go to the Transfer Facility. It does not run on Sunday or at night.

- Line 13 - Nichols and Broadway. This line makes a loop through the easternmost portion of the study area, connecting with the Transfer Facility. It runs Monday through Saturday. It does not run on Sunday or at night.

- Line 14 - West Atlantic. This line makes a loop through the eastern portion of the study area, connecting with the Transfer Facility. It runs Monday through Saturday. It does not run on Sunday or at night.

Five of these routes connect with the Park Central Transfer Facility, allowing full access to Springfield's transit system. The transit system operates on a 'pulse' basis with most buses arriving and departing at the same time. City Utilities also operates a complementary demand-responsive curb-to-curb para- transit service consisting of five vans for the disabled.

Currently these are the only transit services within the study area. The City Charter prohibits City Utilities from providing service outside the city limits of Springfield. However, the MPO has recognized the need for transit service that goes beyond the city boundary. The MPO plans to investigate the possibility for expansion of transit services. That idea is supported by the adopted Springfield-Greene County Comprehensive Plan. It is found in the Transportation Element (which serves as the MPO's Long Range Transportation Plan).



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- City Utilities Bus Routes

Figure 11

Existing Transit

Northwest Springfield Development Study

Analysis. The adopted Major Thoroughfare Plan is one part of the adopted *Springfield-Greene County Comprehensive Plan.* The Major Thoroughfare Plan is kept up-to-date through regular amendments which are adopted by the Metropolitan Planning Organization (MPO) and also by the Springfield City Council and the Greene County Commission. The current Major Thoroughfare Plan (MTP) was adopted by the MPO and City Council in 2001. Suggested changes to the Major Thoroughfare Plan will be made in the plan section of this document. Most notable, a new Airport Access Road will be proposed. In 2003 the MPO adopted a MTP amendment to show the following:

- State Highway B from I-44 to State Highway 266 as an expressway
- State Highway 266 from State Highway B to Farm Road 107 as an expressway
- Farm Road 107 for State Highway 266 to State Highway EE as an expressway
- A new expressway road from the intersection of State Highway EE running north/northwest to the new Airport Replacement Terminal.

These changes to the Major Thoroughfare Plan were intended to provide the needed access to the new Airport Replacement Terminal. These changes can occur in phases as needed by the community. There is no time line for completion of this series of roadway improvements. The first phase will focus on providing initial access to the new airport terminal. The improvements on State Highway B, State Highway 266 west of Farm Rad 107 can occur at a later date. Those improvements, as approved in the 2003 amendment to the Major Thoroughfare Plan, are intended to provide improved access to south Springfield and Greene County and to encourage economic development. The amendment was intended to show a generalized area for roadway improvements, not a specific road corridor. Further engineering will be necessary to determine the best possible location of the roadway.

The need for the new Airport Access Road corridor, as adopted by the MPO in 2003, was based on an expectation of 1.8 million passengers in the 2032 design year. It was expected that the new airport terminal would generate about 9,400 average daily trips from the mid-field terminal to the surrounding roadway network. It was determined that 70% of airport passengers have trip origins within Springfield proper, primarily south of Chestnut Expressway and east of the West By-Pass. About 10% of trips originate west of Springfield and/or would access the airport from I-44 to the west of the airport. Careful study by the Consultant hired to work on the location of the new airport road showed that the best location for an airport access corridor would be from Chestnut Expressway beginning at its intersection with I-44. The MPO voted to include State Highway B in the roadway improvements in order to handle future volumes of traffic that would access the airport from the west. However, this part of the road improvement can occur at a later date as needed. Further investigation has shown that the existing State Highway 266/Chestnut corridor cannot handle the traffic volumes that will be generated by the new terminal and projected growth in traffic

volumes both from an expanded airport facility and from local traffic growth as the area of airport impact develops and as the community grows. It has been recommended that Chestnut Expressway be upgraded to an expressway and that the right-of-way standard for the entire airport access road be established at 220 feet.

10. Bicycle and Pedestrian Systems

Existing Conditions. The adopted Transportation Plan sets out requirements for bicycle and pedestrian facilities. Guidelines for bikeway location and design are found on page 20-89 of the *Transportation Plan Element* of the *Vision 20/20 Comprehensive Plan*. The existing plan calls on the City of Springfield and Greene County to create a system of bicycle routes that are direct, convenient, safe, and easy to use; that minimize potential conflicts with pedestrians and motor vehicles; and that can be maintained so they do not present hazards to safe bicycling.

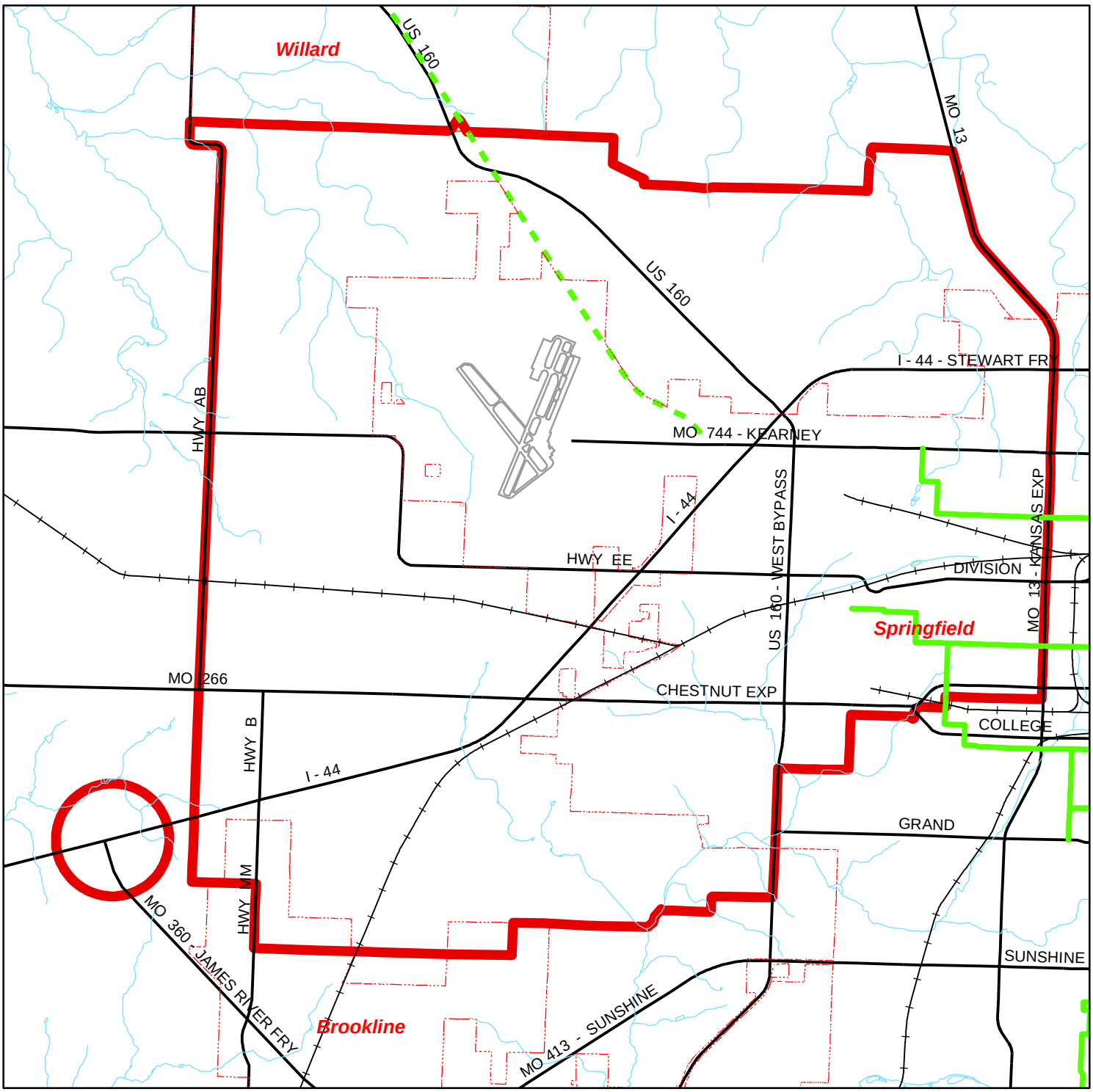
Bicycle facilities are of four types: streets, bike routes, bicycle paths, and recreational paths. All streets allow bicycle traffic and the City of Springfield has a series of recommended bicycle routes. Bicycle routes are streets that the City Traffic Engineer has deemed suitable for bicycle traffic and that provide access to major destinations as well as continuity to travel across several neighborhoods. There are currently approximately 45 miles of streets designated as bike routes within the City of Springfield. Bicycle routes located in the study area are found along Kansas Expressway, Atlantic Street, Clifton Avenue, High Street, Fulbright Avenue, Calhoun Street, West Avenue, and Nichols Street. The MPO is currently preparing a new bicycle plan which will increase the number of bicycle routes and will improve the conditions of bicycle routes in the area. In addition, the City is providing striped bicycle lanes on some roadways. Bicycle paths are corridors specifically set aside for bicyclists. The SMSU campus has provided dedicated bicycle paths on campus. Recreational bicycle paths are being developed by Ozark Greenways and the Springfield/Greene County Parks Department for joint use for bicycling, roller-blading, running, and walking. The Frisco Highline trail is open from Willard to Walnut Grove and the Sac River Trail. It is accessed from a point in the study area.

The existing Transportation Plan also has requirements and regulations for pedestrian facilities which apply to the Northwest Development Study area. The goal is to establish an on- and off-street, safe, high-quality, continuous, barrier-free pedestrian system that functions as an integral part of metropolitan area transportation system. The on-street pedestrian system usually consists of sidewalks or multi-modal paths adjacent to the street system. The off-street pedestrian system is a series of paths that

accommodate both pedestrians and bicyclists. Greenway paths are discussed in another part of this report. It will be important for the City and County to see that pedestrian connections are made from both residential areas and commercial/industrial areas to greenway. The Comprehensive Plan recognizes the importance of pedestrian movement and access. The adopted plan recommends sidewalks on frontage roads along interstate highways, on both sides of primary arterials, on both sides of secondary arterials, on both sides of collector streets, and on both sides of local streets. The *Community Physical Image and Character Element* of the Comprehensive Plan states that "sidewalks are an essential element for circulation and provide opportunities for socializing, playing and exploring a neighborhood on foot" (p. 19-29). The adopted plan sets the minimum width of sidewalks at 5 feet so that two adults can walk comfortably.

Analysis. Although all streets can be used by bicyclists, bicyclists should be aware of the character of traffic and roadway conditions on each street. The most suitable streets for bicycle traffic have wide outside lanes, low traffic speed, low traffic volumes, and have few high-volume cross streets and driveways. Bicycle facilities should capitalize on the roadway network and also include a series of trail linkages in addition to linking business centers and neighborhoods. Bicycle parking needs must also be met by the community as set forth in recent amendments to the zoning ordinance. Bicycle facilities need to be expanded within this study area.

Springfield and Greene County need to implement the bicycle and pedestrian requirements in the adopted Comprehensive Plan. New greenways are being planned within the study area. During plat review both the City and the County need to provide for connections to greenway, particularly from new residential subdivisions. Where connections between commercial development and greenways are possible, they should be provided. Wherever possible, pedestrian connections like the path connecting The Meadows Subdivision and the Willard Central Elementary School should be built.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Existing bike routes
- Frisco Highline Trail

Figure 12

Existing Bicycle Routes

Northwest Springfield Development Study

11. Rail and Trucking

Existing Conditions. The adopted *Transportation Element* of the Comprehensive Plan requires grade separation between rail lines and freeways and strongly encourages grade separation between rail lines and expressways such as the new airport road. Gates and signals are required where principal arterials, secondary arterials, collectors, and local roads cross rail lines. The Northwest Development Study area has several railroad facilities and much of the industrial land use and the industrially zoned property exists because of the presence of the rail lines. Rail lines serve the new PIC West industrial park and other industrial areas. One rail line runs diagonally across the study area from the southwest to the north east and three other rail lines cross parts of the study area. Within the Northwest Development Study area, railroad lines have at-grade crossings on the following streets: County Highway AB south of Division/EE, Kaylor Road south of Division/EE, Haseltine/FR 115 south of Division/EE, Westgate Avenue near Junction Street, Junction Street west of Orchard Crest, Eldon Avenue south of Division/EE Division Street near Golden Avenue, West Avenue, south of Chestnut Expressway, Haseltine/115 south of I-44, Grand Avenue/140 at Deer Run Subdivision, and Yale Road at the Brookline City Limits.

Railroad property from a point east of West By-Pass running north toward the City of Willard has been abandoned. In addition, the rail corridor north of Kearney and west of I-44 has been converted to trails. Additional rail lines have been removed in the cental part of the study area (running east and west of West By-Pass).

Trucking has a strong presence in Springfield and Greene County. Trucking has a significant impact in the Northwest Development Study area due to the presence of the airport, PIC West and other industrial areas, Interstate-44, Highway 13, and Highway 160. Today, multi-modal delivery of freight is increasingly important to the national and local economies. Eighteen "truckload carriers" do business in the Springfield area and 14 of them are headquartered in the area. In addition, 10 "less than truckload carriers" do business in the area. Interstate-44 caries a large number of trucks. The airport and the businesses located in the vicinity of the airport generate truck traffic. As PIC West builds out, the truck traffic in the Northwest Development Study area will increase. Springfield is and will continue to be an important trucking center for the region.

Analysis. The Northwest Development Study area is crossed by rail lines. Rail traffic in Springfield and in the Northwest study area decreased during the 1980s and remained low during the 1990s. Rail service to individual business in Springfield remains below the level of two or more decades ago. However, the number of trains passing through Springfield has increased since 2000. That trend is expected to

continue.

Rail transport still impacts traffic and safety in the study area. At-grade crossings still exist in the study area and safety issues need to be addressed, particularly as the population of the study area increases. The new airport road is being designed to bridge over existing rail lines, reducing the number of at-grade crossings in the study area by one. As road improvements are made, the City and County should address the safety issue of at-grade crossings.

Truck traffic in the area is expected to increase as PIC West builds out and as additional industrial and warehousing uses develop around the airport. It is a fact that an increasingly large percentage of the national movement of goods is being carried by trucks. Multi-modal transport now allows rail cars to be removed from trains and to be carried by trucks to their final destination. Truck traffic on Highway 13, Highway 160, and State Highway MM/B is expected to increase during the life of the adopted Comprehensive Plan.

12. Airport

Existing Conditions. The Springfield-Branson Regional Airport is the main air facility in Southwest Missouri and is an important link to future national and international markets. It is located on approximately 3,000 acres in the Northwest Development Study area. The 200,000 square foot terminal building was expanded in 2001 and offers gates for ten aircraft with loading from second-level boarding bridges as well as at ground-level. Currently, the airport offers non-stop service to eight hub cities around the country: Chicago, Cincinnati, Dallas/Ft. Worth, Denver, Detroit, Memphis, Minneapolis, and St. Louis.

The existing terminal encompasses a 22,000 square foot "Intermodal Facility" integrating the transfer of airline passengers and tour groups to motor coaches. The facility can simultaneously accommodate seven motor coaches inside, and has two gates for charter aircraft. The terminal handles approximately 112,000 aircraft arrivals and departures each year serving more than 700,000 passengers. Passenger travel has risen in recent years and is expected to continue to increase. The Springfield-Branson Regional Airport is owned by the City of Springfield and operated by an administrative board which has the power to acquire property.

Construction on associated taxiways in addition to the runways, and additional improvements added up to $32 million in airfield enhancements completed in 2001.

The next major project for Springfield Branson Regional Airport will be a Midfield Terminal replacement building. The airport terminal is land locked on its existing site, and a replacement building is in the design phase. The new Midfield project is being designed to meet the aviation needs of Southwest Missouri for the next fifty years, and is anticipated to be completed in 2008.

The Springfield-Branson Regional Airport also functions as a major general aviation facility. There is a separate general aviation terminal that accommodates the general aviation passengers and aircraft. Future airport planning should continue to minimize any conflicts between the general aviation facility and the air carrier traffic. The General Aviation Terminal Building is a state-of-the-art facility for corporate and private aviation use with twenty-four hour fueling, and DTN weather system. The main terminal apron and the general aviation apron provide hangar and tie-down space for private aircraft.

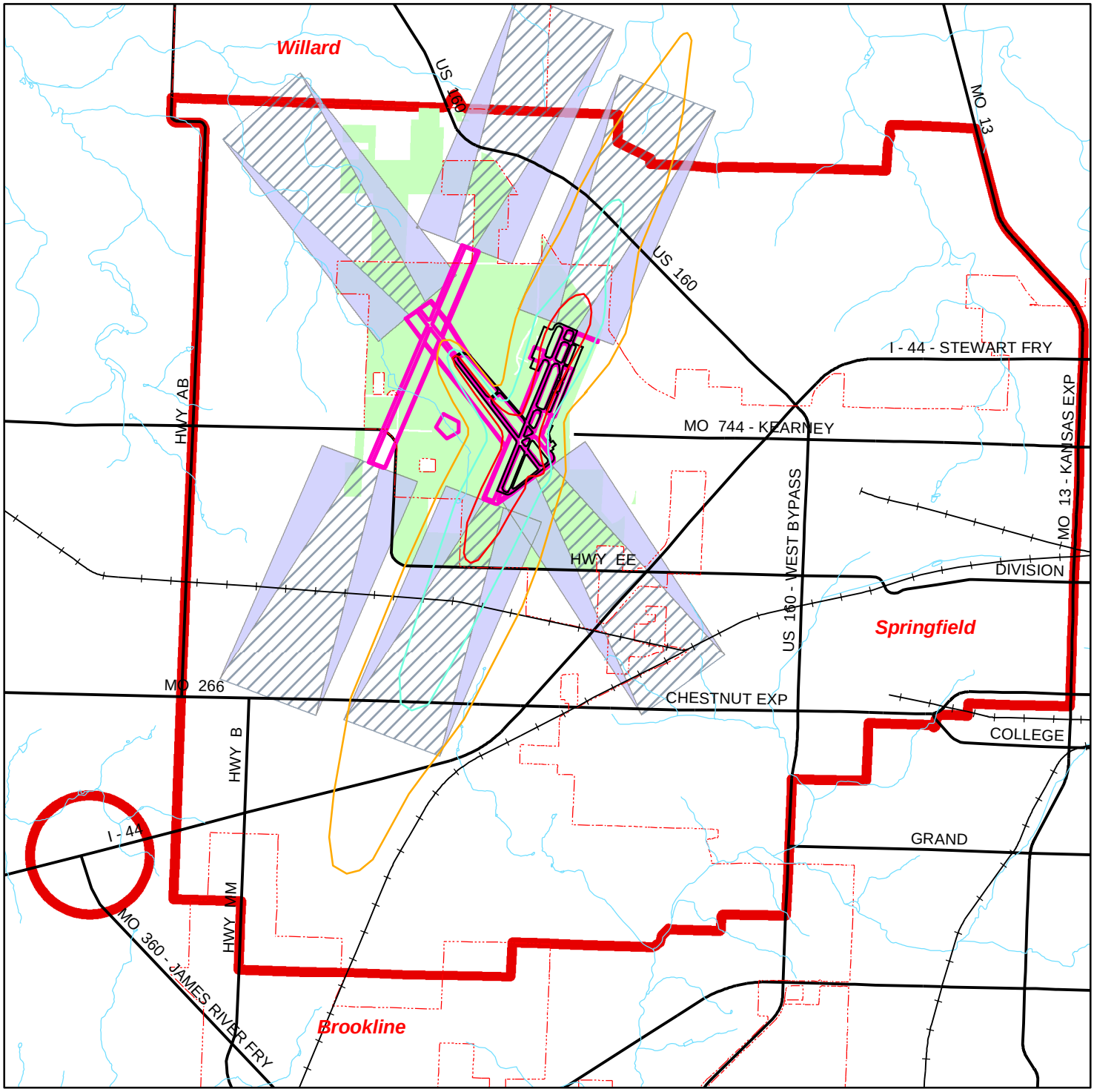
More than 20 million pounds of freight move through airport each year. It is a United States Port of Entry and serves as a regional shipping hub. The airport is only minutes from Interstate 44 and is only minutes away from rail service.

Air Centre Industrial Park, a 250-acre industrial park, offers runway access aprons for public and private business, including several nationwide freight carriers and the U.S. Customs office and National Guard Aviation Repair Depot facilities, which depend on the close proximity of Airport services.

Army National Guard facilities are located at the end of Lester Jones Avenue. This facility, an aviation classification and repair activity depot, has been in existence since the 1960s. It has about 220 persons deployed, some full time, and some part-time. It serves 14 states as a repair facility for aircraft. In roughly four to six years the Guard expects to break ground on a new and much larger building located west of the existing building. Employment on-site is expected to increase dramatically. The Guard owns an additional 93 acres northwest of its existing facility and the expansion is badly needed. The Guard intends to build a new hanger facility. The facility is currently reached by taking Kearney or Highway 160 to Lester Jones Avenue.

Existing land use within the vicinity of the Springfield-Branson Regional Airport is mostly rural in nature. There are a few urban-density residential subdivisions west and east of the airport. Directly east of the airport along Kearney Street are scattered commercial and industrial uses, with a few residential uses close to Interstate-44. To the southeast of the airport property are scattered residential units, and a cemetery. Southeast of Interstate-44 is an elementary school and a residential subdivision.

Directly south of the airport is a cemetery and scattered residential units. Farther to the south are commercial and industrial uses along the interstate highway. To the southwest are mostly agricultural uses and scattered residential uses. The area to the west of the airport includes scattered residential and agricultural uses, with a few residential subdivisions. To the north and northwest are scattered residential and agricultural uses, with the same type of uses to the northeast.



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Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

Noise Contours

- 65 Ldn
- 70 Ldn
- 75 Ldn
- Existing Runway Pattern
- Proposed Future Runway Pattern

Air Zone (Height Limitations)

- 100 feet
- 150 feet
- Airport Property (2004)

Figure 13

Springfield / Branson Regional Airport Detail

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Northwest Springfield Development Study

The generalized existing zoning within the vicinity of the Springfield-Branson Regional Airport includes a significant amount of agricultural zoning to the north, northwest, and northeast of the airport, outside the city limits. The area to the west of the airport, also outside the city limits, is zoned for residential and agricultural uses, with agricultural zoning to the southwest of the airport, beyond the city limits. There is one small area of Greene County residential zoning to the southwest of the airport. The area to the south and southeast, beyond the city limits, is zoned for agricultural and manufacturing uses. The area beyond the city limits to the east and northeast of the airport is zoned for manufacturing, agricultural, and residential uses.

The area within the city limits, which surrounds the airport terminal and runways on all sides except for the northwest, is zoned for manufacturing uses. The small area to the northwest within the city limits is zoned for agricultural uses. To the east of the airport, the zoning within the city is for manufacturing and residential uses, with some commercial uses to the southeast.

Noise from aircraft have a negative impact on the surrounding land uses. The Day Noise Level scale is established by the Federal Aviation Administration (FAA) and the Environmental Protection Agency (EPA). Noise contours are provided for Ldn 65, 70, 75. Within the noise contours certain land uses must provide mitigation of airport noise (see City of Springfield Zoning Ordinance). The Airport Overlay (AO) District regulates the development of noise-sensitive land uses to promote compatibility between the airport and surrounding land uses to protect the airport from incompatible development and to promote the health, safety and general welfare of citizens. Zone AO-1 is defined by the 65 through 69 DNL (Day Night Level; the average noise level for a 24 hour period) contour. AO-2 is defined by the 70 DNL and greater contour. These districts are subject to significant noise from aircraft. AO-3 begins at each runway end and extends 500 feet perpendicular on either side of the centerline, then extends 10,000 feet to a width of 4,000 feet. Restrictions, such as height restrictions, are set for each Airport Overlay District.

The City and County address the issue of compatible land uses through zoning policies. Greene County has adopted an airport zone in accordance with Missouri Revised Statutes Chapter 305, sections 305.400 and 305.405. The statute and the zoning regulations prohibit the development of residential structures with the exception of single family homes on lots of 10 acres or more within the Airport Zone. In addition, hospitals, health institutions, clinics, sanitariums, nursing homes, convalescent homes, institutional homes, schools, libraries, sports arenas, daycare centers, churches, auditoriums, theaters or other similar facilities are prohibited within the airport zones.

No structure can be taller that 50 feet in height within the Airport Zone or more than 100 feet in height within a designated area located outside of the airport zone (but within an area 2,000 feet parallel to and on each side of the centerline of the runway extended 10,000 feet from the end of the runway). These regulation apply to both existing and proposed runways. The complete airport zone is (4,000 feet) in width, and extends 10,000 feet from the end of each runway. These zones are illustrated in Figure 13, Airport Zoning Boundary.

Analysis. The new Airport Replacement Terminal is expected to be completed in 2009. It will be located in the southeastern portion of the airport property. This new location will impact much of the Northwest Development Study area. Air traffic will increase, as will vehicle volumes on roadways. A new airport access road is planned. The new airport road will open up an area currently in agricultural use for new uses. The adopted Comprehensive Plan and the Northwest Development Study both discuss the need for a new designation of 'Business Park' to be applied to a large area south of the airport. That issue will be addressed later in this document. As properties near the airport develop, the requirements and prohibitions of the airport zones must be met. Continued development of Airport property will allow development of a combined airport/police/fire training facility. This new facility can be utilized by personnel throughout the region.

USES ***NOT*** PERMITTED IN AIRPORT ZONE

City Prohibits

1. Dwelling except SF on 10 acres
2. Hospital
3. Clinic
4. Community Center
5. Day care home
6. Group home
7. School/college
8. Library/museum
9. Outdoor carnival/circus
10. Day Care Centers/preschool
11. Church
12. Auditorium
13. Concert Hall
14. Ballfield, stadium
15. Drive-In Theater

County Prohibits

1. Dwelling except SF on 10 acres
2. Hospital
3. Health institution
4. Clinic
5. Sanitarium
6. Nursing or convalescent home
7. Institutional home
8. School
9. Library
10. Sports arena
11. Day care center
12. Church/place of worship
13. Auditorium/public assembly
14. Theater of any kind

City Height Limit

1. 50 feet in airport zone
2. 100 feet in area either side of zone

County Height Limit

1. 50 feet in airport zone
2. 100 feet in area either side of zone

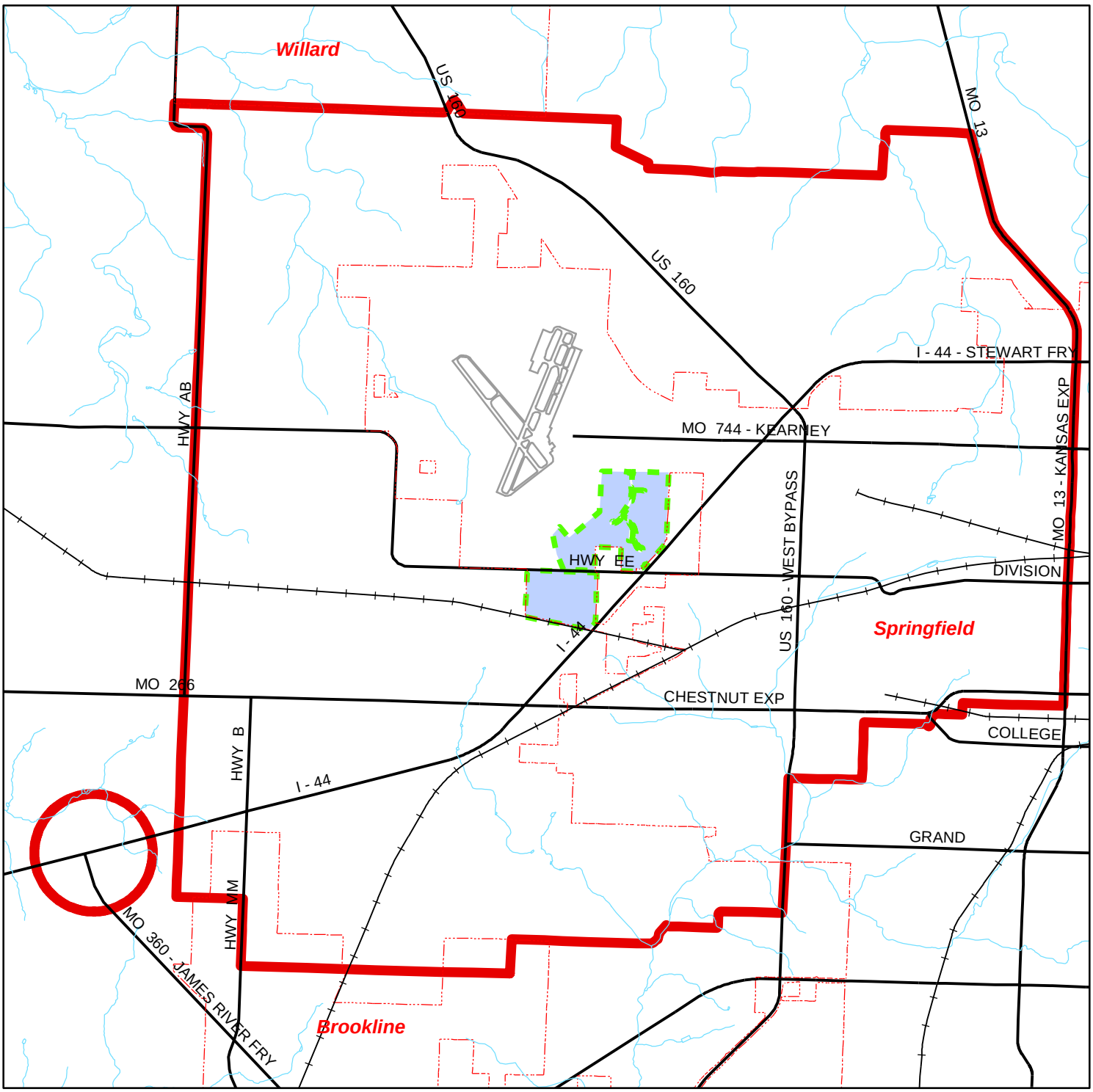
Noise Contours

Noise level must be reduced of specific uses where noise is in the (1) 65 - 69 Ldn contour or (2) the 70 + Ldn contour

13. Partnership Industrial Center West

Existing Conditions. PIC West is located west of Interstate 44 and south of Kearney and Division Streets and north of the B.N.S.F. Railroad. It is a major land use in the Northwest Development Study area and will have a major impact on the surrounding area in the future. PIC West, a 410 acre industrial park, is a collaboration of the Springfield Area Chamber of Commerce, Springfield Business and Development Corporation, City of Springfield, City Utilities and Greene County. It has 24 lots, two of which have been developed to date. PIC West has interstate access, rail service, and is in close proximity to the Springfield-Branson Regional Airport.

Analysis. At this time, only two of the 24 lots in the Partnership Industrial Center West have been developed. Additional infrastructure such as streets, stormwater and sanitary sewer facilities, will need to be constructed as the lots continue to sell and be developed. As PIC West continues to develop over the next several years, auto and truck trips into and out of the study area will increase. As jobs in the study area increase, additional residents can be expected to be added to the study area population. Rail transportation will continue to be important as some of the business that locate within PIC West require rail transportation.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- PIC West

Northwest Springfield Development Study

Figure 14

Partnership Industrial Center West

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14. Utilities

Existing Conditions. As noted above, most of the Northwest Development Study area is within the Year 2020 Urban Service Area boundary. Property within the Urban Service Area is eligible for sewer service and urban roads. Urban density development in the Study Area is served by the City of Springfield sanitary sewer and City Utilities' water lines. The Springfield City Council has declared its intent to have all parts of the City of Springfield served by sanitary sewer. In the Northwest Development Study area there are pockets of unsewered property within the City of Springfield. These pockets of property without sewer are located north of Mt. Vernon Street, east of Orchard Crest Avenue, south of I-44, and west of Park Avenue. The City of Springfield has four new trunk sewers under design for the Northwest Development Study area.

- North of I-44 to the northern boundary of the Urban Service Area west of Highway 13/Kansas Expressway.
- South of Chestnut to the intersection of I-44 and Highway 266/Chestnut Expressway.
- Inside the City of Springfield form Mt. Vernon to just north of Chestnut Expressway/266
- West on FR 140/Grand from the existing sewer at 115/Haseltine to west of the intersection of Highway MM and I-44.

When completed, these sewers will open up significant amounts of land to urban-density development. All four of these planned sewers are within the Urban Service Area. The trunk sewer planned to reach the I-44/MM intersection extends just past the Urban Service Area boundary. However, that boundary was intended to include all the property within the activity center.

There are some areas outside the City of Springfield that receive city sewer service, but they are limited. City sewer lines are located in the northeastern portion of the study area and in the south portion of the study area west of FR 107. Greene County will not rezone for urban-density development or for commercial uses if sewer service is not provided.

Development at urban densities or intensities cannot occur without sanitary sewer. The Urban Service Area Policy discusses prerequisites for development in drainage basins outside the Urban Service Area boundary. Three basins are affected in the Northwest Development Study area:

- *Little Sac River and Flint Hill Branch Basin*. This basin in immediately northeast of the Springfield-Branson Airport. Careful treatment of sewage and contaminated stormwater run-off in this basin is critical for protection of

Springfield's water supply at Fulbright Spring. Development in this area should receive public water and wastewater treatment. Non-residential development generating wastewater requiring special treatment is discouraged. Extension of sewer service would require a trunk line. Rural-intensity development could be tolerated without public water and sewer if reasonable standards are met for sewage disposal and water wells are properly cased and if the development is not within an internal drainage area for a sinkhole.

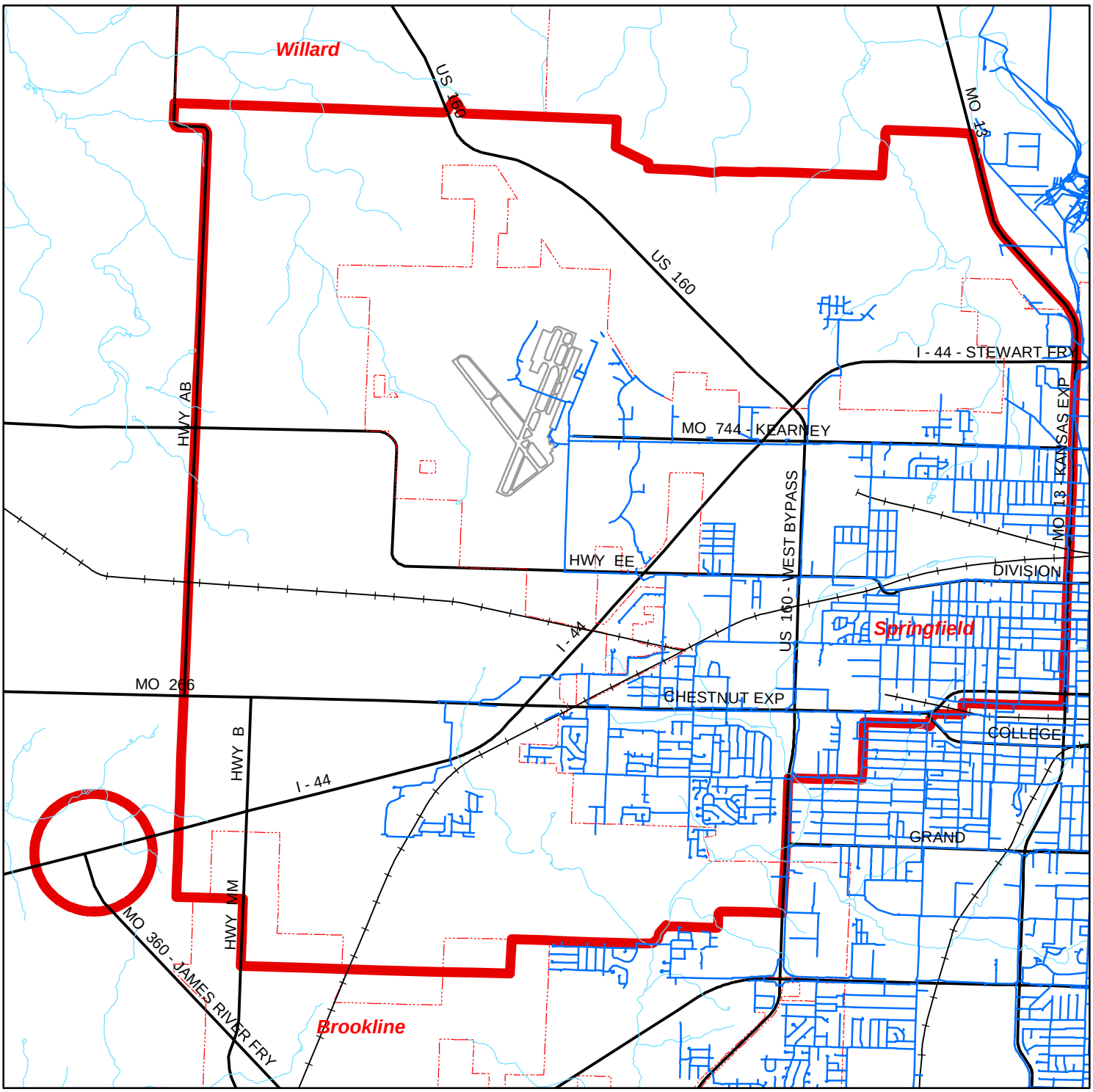
- *Clear Creek and Rainer Branch Basin*. In this basin north and west of the Springfield-Branson Airport, sewer service will be restricted to what can be pumped to the City of Springfield System. Sewer service extension would require construction of a major lift station and extension of a force main to a gravity sewer system. Rural-intensity development could be tolerated without public water and sewer if reasonable standards are met for sewage disposal and water wells are properly cased and if the development is not within an internal drainage area for a sinkhole. Poor treatment of sewage or contaminate storm water run-off would threaten municipal water sources for Springfield and Willard.
- *Sac River/Pond Creek Basin*. This basin is located in the extreme southwestern corner of the study area and includes the James River Freeway/MO 360/I-44 interchange. Sewer service would be limited to what can be pumped to the City of Springfield System.

Other utilities are more easily obtained. Water service in the eastern half of the study area is extensive. City Utilities provides water service both inside and outside the city limits. City Utilities also provides natural gas service to over half of the study area, both inside and outside the city's corporate limits. Electricity is provided throughout the study area.

Analysis. Most of the Northwest Development Study area is within the Urban Service Area boundary, which makes it eligible for sewer service and urban roads. Before property in unincorporated Greene County (but within the Urban Service Area boundary) can receive sewer service from the City of Springfield, it must either be annexed, if contiguous, or the owner must sign an irrevocable consent to annex petition. That document obligates the property owner to annex the property to the City of Springfield when it becomes contiguous. For that reason, it is likely that most of the study area will one day be part of the City of Springfield. Development at urban density cannot take place in the study area without public sanitary sewer service. Package plants are not permitted by Greene County. Public sanitary sewer service is especially important in the area because of the nature of the soils, the bedrock, and the many sinkholes. The rocky and fractured local geology quickly siphons surface water and on-site septage to the aquifers. Public health depends on

the use of a closed sewer system and/or properly sited, installed and maintained on-site disposal systems.

As stated earlier, the City of Springfield has four new trunk sewers under design for the Northwest Development Study area. These sewers, when they are complete, will open up significant amounts of land to urban-density development.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Water Lines (Mains)

City Utilities of Springfield only shown

Figure 15

Water Lines

Northwest Springfield Development Study

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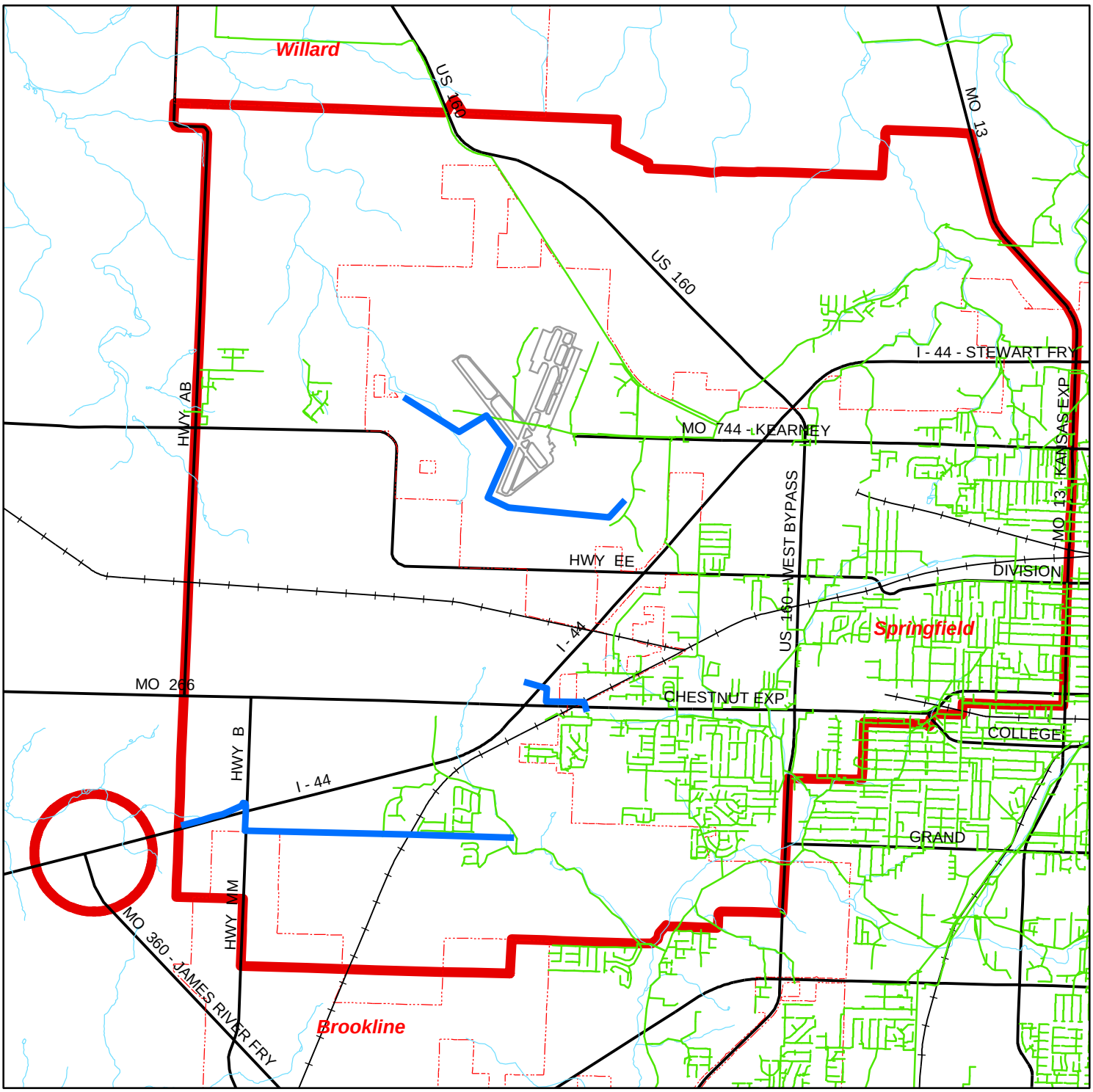

Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Sewer Lines (Mains)
- Future Sewer Lines (Mains)

Figure 16

Sewer Lines

Public Works of Springfield only shown

Northwest Springfield Development Study

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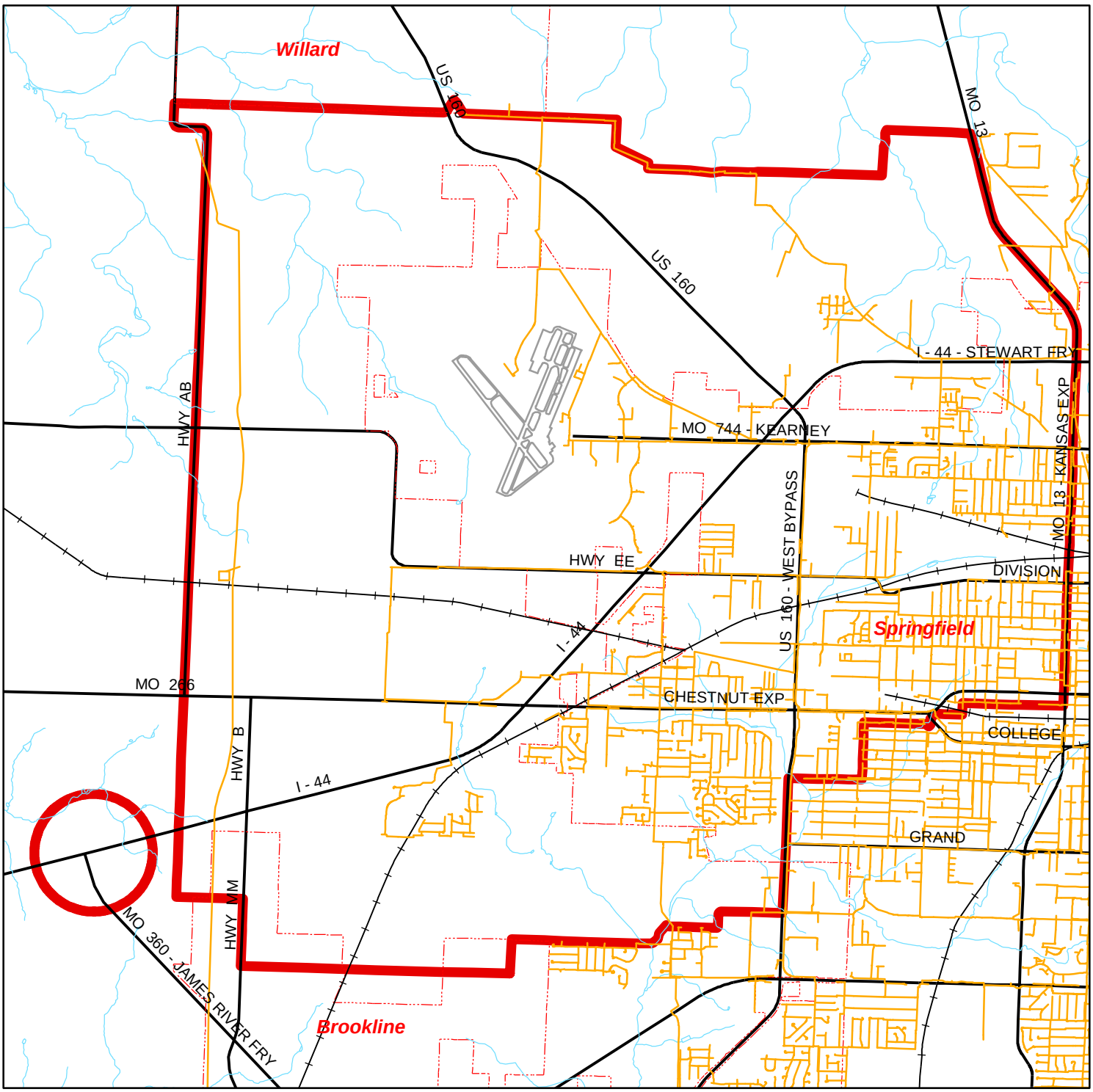

Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Gas Lines (Mains)

City Utilities of Springfield only shown

Figure 17

Natural Gas Lines

Northwest Springfield Development Study

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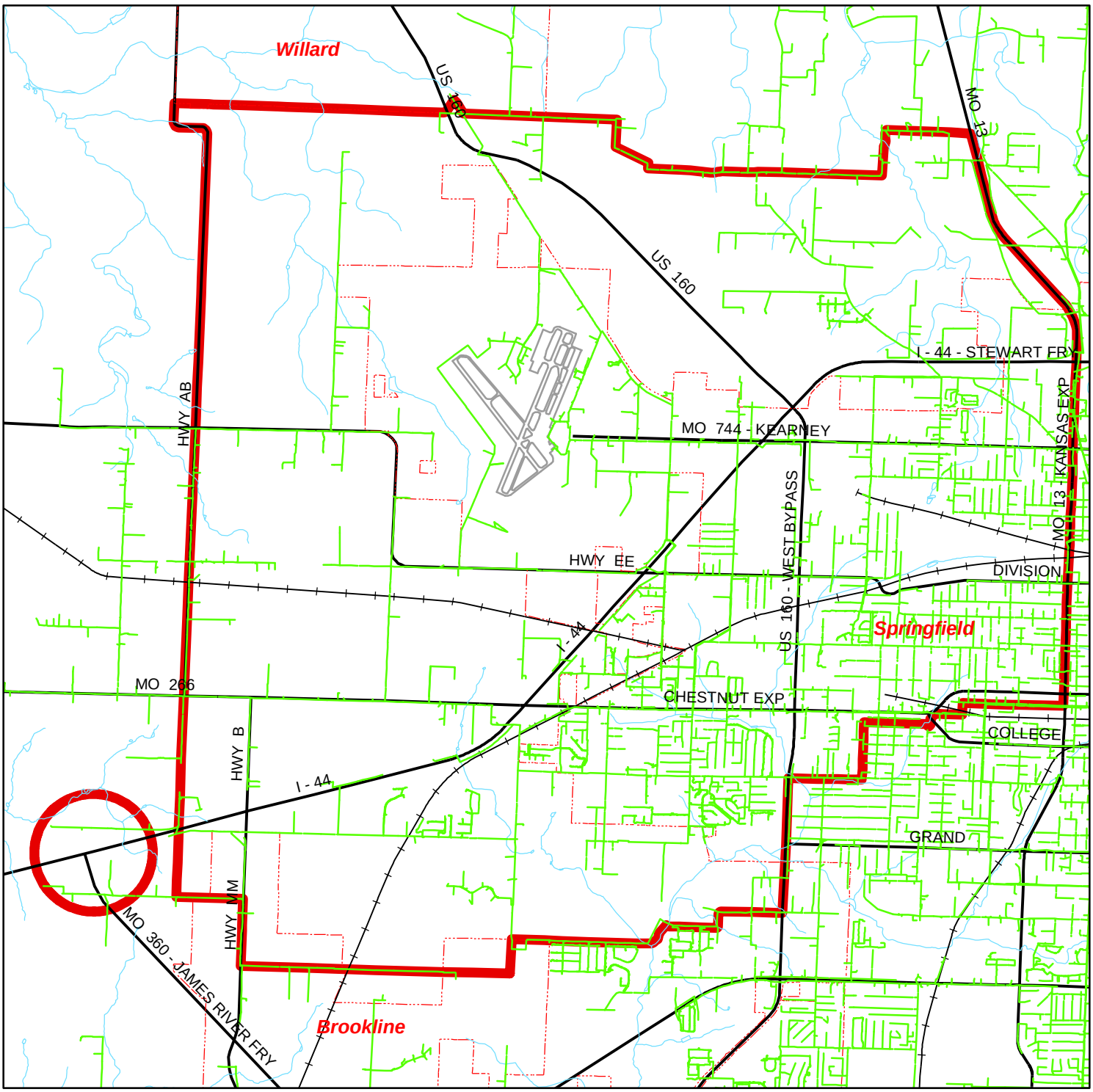

Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Electric Lines

City Utilities of Springfield only shown

Figure 18

Electric Lines

Northwest Springfield Development Study

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15. Parks, Open Space, and Greenways

Existing Conditions. Both Greene County and the City of Springfield have adopted *The Parks, Open Space, and Greenways Plan Element* of the Comprehensive Plan. The plan strives to create a safe, accessible, comprehensive system of parks, open space, and greenways with sufficient land and facilities that connect selected public and private spaces while preserving the natural environment. The Parks Plan includes several existing or planned facilities in the Northwest Development Study area.

Greenways The adopted plan describes Greenways as a major element of the Vision 20/20 plan. Greenways are linear public parks, usually located along both sides of a stream, include bicycle and pedestrian paths. Greenways provide recreation, flood control, runoff filtration, and habitat protection. The adopted Comprehensive Plan shows the Frisco Highline Trail running north from a point in the City of Willard. However, the Parks Department now has constructed a trail head at the intersection of Kearney Street and Eldon Road in Springfield. The trail has been constructed from this point north and will, eventually, extend to the City of Bolivar in Polk County.

The plan discusses the planned Spring Branch Greenway (Parks Plan,. 21-73). Spring Branch is a small branch of the Little Sac River. The greenway extends approximately 3.4 miles from Ritter Springs Park to Norton Road. Spring Branch Greenway is set among rolling hills near agricultural fields and rural residential properties. This planned greenway will run from Norton Road on the south to Ritter Springs Park and the future Sac River Trail on the north. Ritter Springs Park lies just north of the Northwest Development Study area. This greenway will connect with the Little Sac River Greenway in Ritter Springs Park and also with Pea Ridge Creek and other greenways along Norton Road. The Spring Branch Greenway intersects the several bicycle corridors, including Broadway Avenue, Grant Avenue, and Melville Road (FR 127).

Connector Trails. Connector trails are multipurpose trails that emphasize safe travel for pedestrians to and from parks and around the community. Focus is as much on transportation as on recreation. These trails are of two types: Type 1 trails are separate/single purpose hard-surfaced trails for pedestrian or bicyclists located in independent rights-of-way (e.g., old rail corridor), Type 2 trails have separate/single purpose hard-surfaced trails for pedestrians or bicyclists within existing road rights-of-way).

School-Park. School-parks are parks combined with school sites. Their size is usually between 3 and 20 acres. Their service area will depend on their function. The

adopted plan shows two school parks in the Northwest Development Study area:

- Bissett-Wise School-Park (Park Plan, 21-110). The school is located at 3014 W. Calhoun Street. L. A. Wise Park is located south and adjacent to the school at 3100 W. Nichols Street. There are 6.0 acres of school property and 5.5 acres of park property.
- Westport School-Park (Park Plan, 21-117). The school is located adjacent to Westport Park at 415 S. Golden Avenue. There are 7.0 acres of school property and 13.0 acres of park property.

Neighborhood Park. Neighborhood parks are intended to provide informal active and passive recreation facilities for all ages within a normal walking distance. Their size is between 3 and 20 acres and their service area is one half to 1 mile distance. The population served is between 1,500 and 5,000. The adopted plan shows three neighborhood parks in the study area:

- Tom Watkins Neighborhood Park (Parks Plan,. 21-104).
- Nichols Neighborhood Park (Parks Plan, 21-101).
- Youngs-Lily Neighborhood Park (Parks Plan, 21-104).

The Parks Plan indicates that there is a need for a future park somewhere in a large area south and east of I-44 between the City of Brookline and West By-Pass (HW 160). The Rutledge-Wilson Community Park will serve that function. The Parks Plan also indicates that a new park is needed somewhere in a broad area north of I-44 and west of Kansas Expressway.

Other. The Northwest Development Study area also contains the Deer Lake Golf Course at 5544 W. Chestnut Expressway. Deer Lake Golf Course is a semi-private 18 hole golf course with an open guest policy. The golf course is open year round. A number of single family residences have been built facing the golf course.

Analysis. The adopted Comprehensive Plan lays out a thorough vision for provision of parks, open space and greenways in the study area. The planned Spring Branch Greenway should be constructed during the life of the plan. The study area currently has two school-park facilities: Bissett-Wise School-Park and Westport School-Park. During the life of the plan, to the year 20/20, additional joint school-parks facilities should be provided for schools within the area. The Parks Plan indicates that there is a need for a future park south and east of I-44 between the City of Brookline and West By-Pass (HW 160). The Rutledge-Wilson Community Park is planned to serve that function. Construction of the Rutledge-Wilson Community Park should continue. The

proposed greenway associated with the park should be constructed. The Parks Plan also indicates that a new park is needed somewhere in a broad area north of I-44 and west of Kansas Expressway. The Springfield-Greene County Park Board needs to address this need within the study area.

16. Community Facilities

Existing Conditions. A major component of the *Community Facilities Element* of the Comprehensive Plan is the shared use principle. Public agencies should maximize the use of their land, facilities, and services. The shared use concept is based on the belief that efficiency and improved quality of life will be gained by the sharing of public land, facilities, and services. A prime example of the implementation of this principle is the school-part concept discussed in the *Parks, Open Space and Greenways Element.*

Community Facilities in the Northwest Development Study area:

- Library
    - The Library Station - 2535 N. Kansas Expressway

- Schools and School-Parks
    - Bissett Elementary School - 3014 West Calhoun and Wise Park
    - Westport Elementary School - 415 South Golden and Westport Park
    - Williams Elementary School - 2205 West Kearney
    - York Elementary School - 2100 West Nichols (near Nichols Park)

    - Willard Elementary South - (4151 W. Division)
    - Willard Elementary Central - (2625 N. Farm Road 101)

- Parks
    - Tom Watkins Park/Community Center (neighborhood park, p. 21-104)
    - Westport Park
    - Nichols Park (neighborhood park p.21-101)
    - Youngs-Lily Neighborhood Park (p. 21-104)

- Greenways
    - Spring Branch Greenway (parks, p. 21-73)

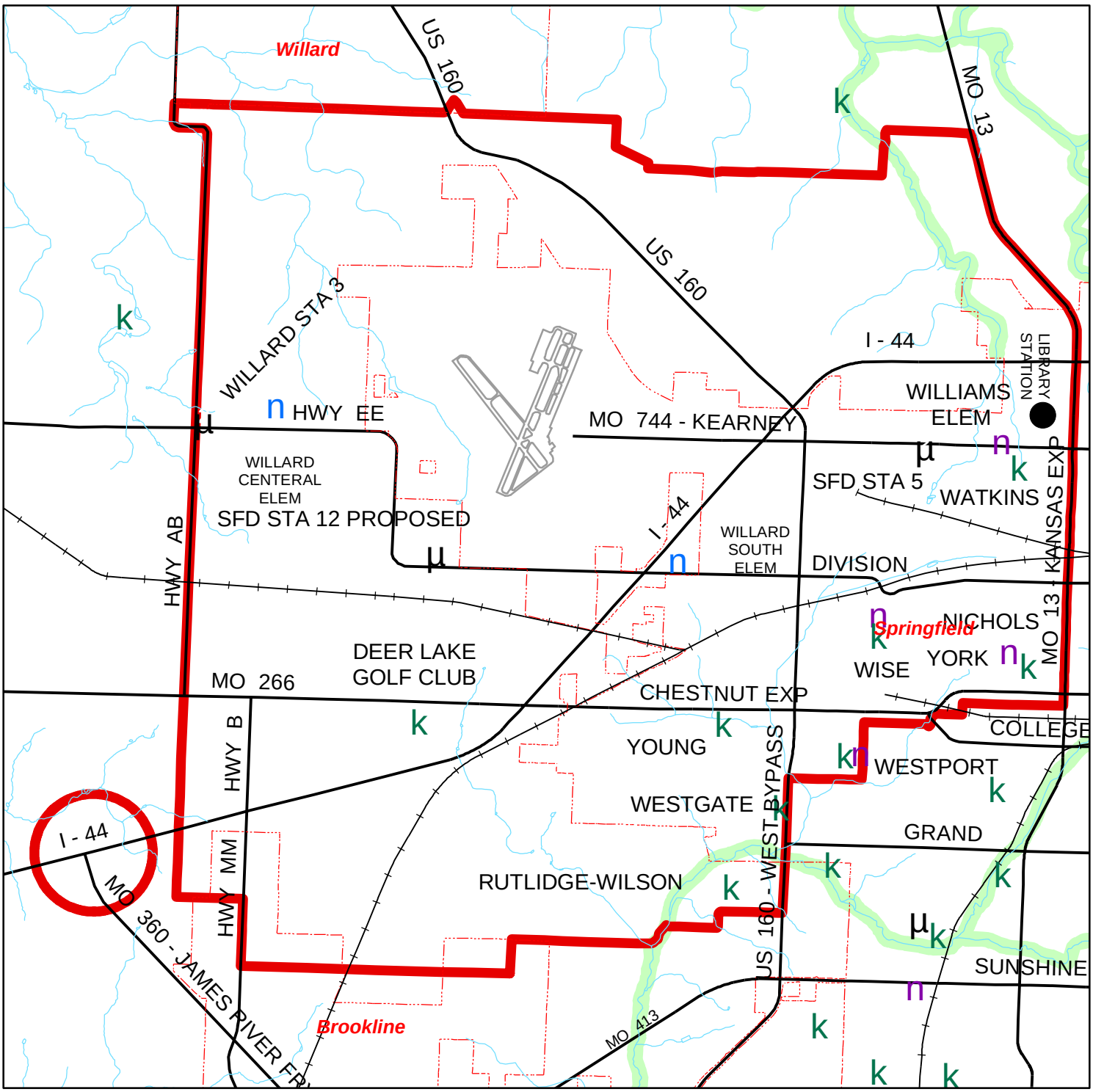
- Fire Stations
    - Fire Station # 5 - 2750 West Kearney- a 3 bay station with a 450 square

foot community room, a 1/4 mile walking track available for public use.

- Proposed Fire Station #12 would be located on EE near the Airport.

Analysis. The actions in the *Community Facilities Plan Element* of the Springfield-Greene County Comprehensive Plan need to be implemented within the Northwest Development Study area. The study area currently has two school parks. This shared use concept has proved successful in other parts of the City of Springfield in the years since the adoption of the Comprehensive Plan. Additional school-park facilities should be provided within this study area. The Spring Branch Greenway, as described in the *Parks, Open Space and Greenways* element of the Comprehensive Plan, should be constructed in the study area. In addition, the proposed Fire Station #12 should be built during the life of the plan (to year 2020).

The adopted Comprehensive Plan stresses that "quality design is an essential part of the built environment". The *Community Physical Image and Character* element of the Comprehensive Plan states the goal of creating "a more livable community by improving the built environment, enhancing visual appearance, increasing opportunities for public interaction in public spaces, strengthening the sense of community, and being sensitive to the natural environment". As new community facilities are constructed, this goal should be met.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- k Parks & Recreation
- n R-12 Elem. Schools (Springfield)
- n R-3 Elem. Schools (Willard)
- μ Fire Stations
- Greenways

Figure 19

Community Facilities

Northwest Springfield Development Study

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17. Environmental Concerns

Existing Conditions.

Sinkholes About one-third of the Northwest Development Study area is made up of areas of internal drainage and sinkholes (See Figure 20). In the north-central part of the study area is a large sinkhole field and a surrounding area of internal drainage. A smaller, but still significant, sinkhole field and area of internal drainage is located in the extreme southwest corner of the study area. There are also three smaller sinkhole areas across the middle of the study area. These sinkhole areas will complicate development. Both Greene County and the City of Springfield have Sinkhole Ordinances that govern how development affects sinkholes.

Slopes Steep slopes are a development limitation for roads and buildings, particularly commercial buildings. The only significant slopes in the study area are in the vicinity of the Spring Branch and Wilson's Creek.

Water Features Three creeks and their floodplains are located on the edges of the study area (See Figure 20). In the northeastern corner of the area is the Spring Branch which drains to the north, flowing into the Little Sac River. In the south-central part of the study area, forming a "V", is the upper reach of Wilson's Creek, which flows south where it joins with Shuyler Creek. In the northwest corner of the study area is a branch of Rainer Creek. Each of these floodplains is relatively narrow

Major Forested Areas The Northwest Development Study area does not have significant forested areas. Much of the area has been used for agricultural uses for decades and trees were cleared long ago. Agricultural uses still make up almost half of the study area. Stands of trees are primarily limited to the hilly areas alongside creeks on the edges of the area.

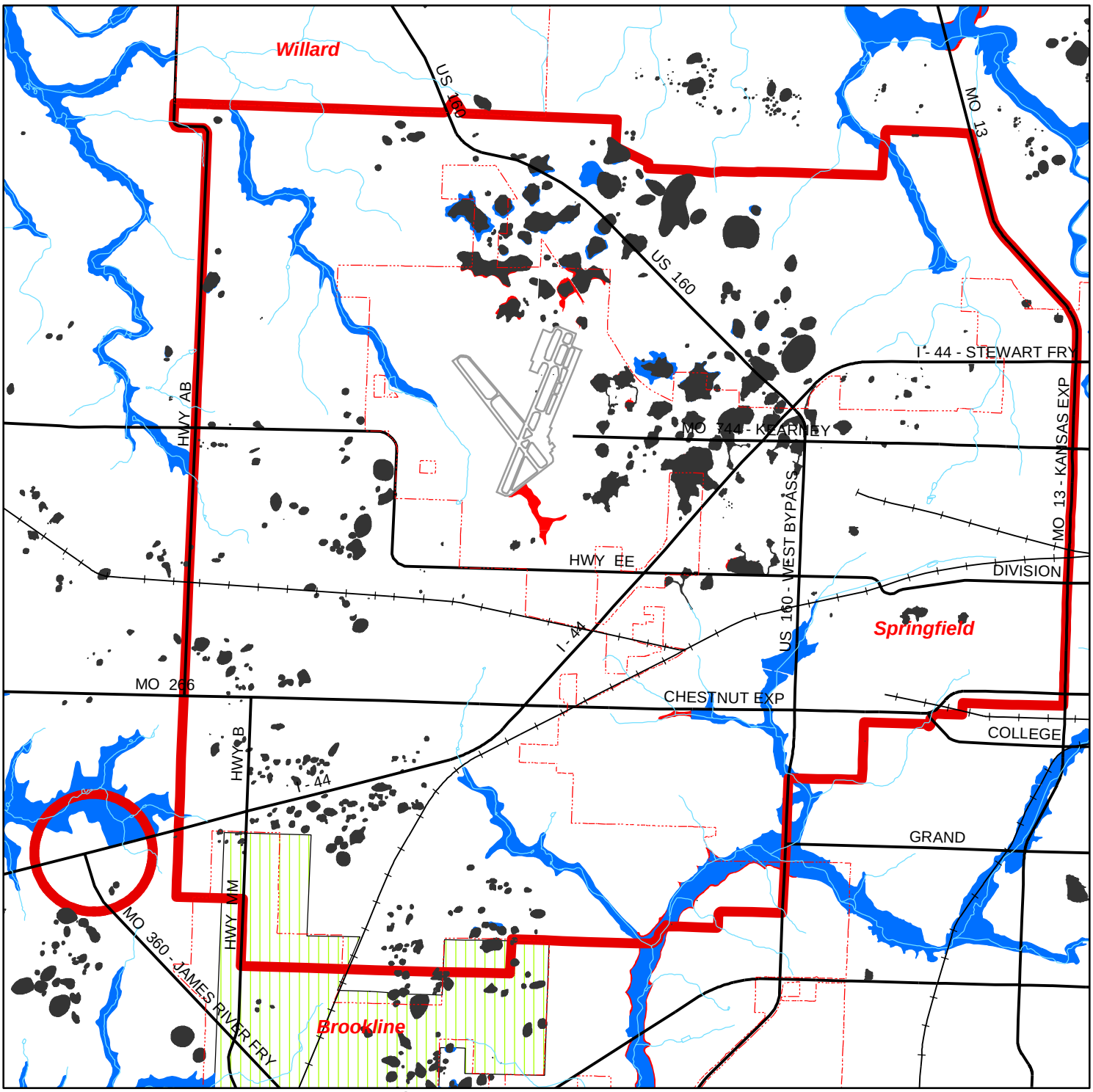
Analysis. Because one-third of the Northwest Development Study area is made up of areas of internal drainage and sinkholes development in some areas will be limited. Sinkholes in the Northwest Development Study area are primarily located:

- In the north-central part of the study area
- In the extreme southwest corner of the study area
- Across the middle of the study area.

Sinkholes are a development limitation and an environmental concern. Housing can be built around sinkholes but septic tank drainfields and surface drainage must be directed away from them. Sinkholes are depressions on the surface of the earth caused

by the collapse of a cave. They become a drain, connecting the surface drainage and underground drainage systems. Many problems arise from sinkhole areas. Because of the internal drainage of karst/sinkhole areas, water can pond in the sinkholes and drain very slowly. There is the potential of flooding nearby houses and businesses. Any attempt to fill a sinkhole will displace water onto adjacent land. Because of the vertical action of solution, sinkholes become ready access points to the subsurface water system, causing a potential for groundwater contamination. Water that carries contaminants can move rapidly into the subsurface water system. Sinkholes are also unstable and may subside as more solution takes place. Therefore, care must be taken in any construction in a sinkhole area to accommodate the subsidence. In addition, sinkholes can collapse as more subsidence occurs over a cave area, creating an effect known as a doline, a common occurrence in Greene County.

Any development in the City of Springfield must be on the city's sewer service. Greene County will require that any development at urban density or any commercial area be on an urban sewer system. (See section on annexation for a discussion of requirement when property receives sewer service from the City of Springfield.). If a development does not hook up to an urban sewer system, care must be taken because of the connection between of the sinkhole and the shallow groundwater system. If construction requires filling a sinkhole, the system should be kept open by some type of drainage system to avoid disrupting the subsurface drainage system causing future problems such as collapse and surface water displacement.



NOTE:

Data for slope to be determined
Surface geology and faults to be mapped

0 0.5 1 2 Miles

1:67,000

Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Sinkholes

FEMA 1996 DATA

- 100 Year Flood
- 500 Year Flood
- No Data for Village of Brookline

Figure 20

Environmental Concern

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Northwest Springfield Development Study

SPRINGFIELD-GREENE COUNTY PLAN
ACTIONS RELATING TO NORTHWEST DEVELOPMENT STUDY

Between 1999 and 2001, the City of Springfield adopted the elements that make up the Springfield-Greene County Comprehensive Plan. Greene County is still in the process of reviewing and adopting some of the elements of the Comprehensive Plan. ***The following actions, taken from throughout the Springfield-Greene County Comprehensive Plan, are of particular relevance to the Northwest Development Study area.*** Other actions from the plan that relate to the Northwest Development Study area can be found in Appendix B of this document. For more in-depth discussion of these and other criteria and related actions, see the twelve elements of the Springfield-Greene County Comprehensive Plan.

The Northwest Development Study was initiated by the Metropolitan Planning Organization with two goals in mind:

1. To examine conditions and issues in this 37 square mile area, particularly in and around the Springfield-Branson Regional Airport
2. To recommend amendments to be made to the Springfield-Greene County Comprehensive Plan that are needed to address issues within the 37 square miles of the Northwest Development Study area.

With that in mind, this section of the document will set out objectives and actions from the adopted *Springfield-Greene County Comprehensive Plan* that strongly apply to the Northwest Development Study area. Because these objectives and actions have already been adopted, they do not need to be included in amendments resulting from this study. Additional actions are included in Appendix B.

Objectives from Comp Plan

Growth Management – Land Use Plan

Objective 1 - Preferred Future Development Pattern: The City of Springfield and Greene County should work together to create a future development pattern that is more geographically balanced and compact than past trends.

Objective 2 - Sustainable Growth: Springfield and Greene County should seek sustainable growth by investing in established areas, carefully planning new

neighborhoods, providing attractive public amenities, and protecting environmental resources.

Objective 3 - Urban and Rural Areas: Springfield, Greene County and the other municipalities of the county should designate the *Urban Service Area* plus the *Urban Reserve* as the limit for municipal sewer service between now and 2040.

- Land within the *Urban Service Area* is eligible to receive municipal sanitary sewer service between now and the year 2020.
- Land within the *Urban Reserve* but outside the Urban Service Area is expected to eventually be developed for urban use and should be regulated accordingly
- Land outside the Urban Reserve, termed the *Rural Area,* is expected to remain permanently rural and should be regulated as such.

Objective 4 - The Urban Service Area: Urban Service Area boundaries should continue to be used by Springfield, Greene County and the other cities of the county to indicate the areas in which municipal sewer service will be available (within certain limitations) to all users who request the service and where urban transportation improvements will be focused. This concept should be adopted by other cities in Greene County.

Objective 5 - The Urban Reserve: Springfield, Greene County and the other municipalities of the county should work together to create urban "holding zones" beyond the year 2020 Urban Service Area boundaries of each city but within the Urban Area of each city. This band of land should be known as the Urban Reserve.

Objective 6 - The Rural Area: Greene County, in cooperation with the several cities, should seek to preserve and accentuate the difference between the highly serviced urban areas (Springfield Urban Area, the Surrounding Small Cities and the Outlying Towns) and the less serviced Rural Area. The cities should be compact, efficient and walkable while the rural areas should be open and agricultural. The intent is to reduce sprawl, preserve desirable rural qualities and promote appropriate rural economic activity by keeping average housing densities low and limiting inappropriate land uses.

Objective 7 - Surrounding Cities: A portion of the Greene County residential, commercial and industrial growth should be guided to the cities of Willard, Strafford, Republic and Battlefield.

Objective 8 - Outlying Towns: A portion of county growth should be accommodated in the outlying towns such as Ash Grove, Fair Grove and Walnut Grove, in order to take some growth pressure off the Rural Area.

Objective 9 - Activity Centers: Springfield and Greene County should target several locations as *Activity Centers.* In those locations, plans, regulations and public investments should promote additional or new employment, intensified retail business, higher density housing and convenient transit service. Design should emphasize mixed- and multiple-use development, attractive public spaces, and high-quality site planning and architecture. Activity Centers should be linked to the bicycle and linear open space networks.

Objective 10 - Annexation: Springfield should work to maintain a well-planned and fiscally sound community by including all appropriate land areas within its boundaries.

Objective 12 - Local and Regional Investments: Springfield and Greene County should invest in public facilities so as to maximize their impact, minimize duplication and advance the other Objectives of *Vision 20/20.*

Objective 13 - Land Use Plan Map: The City of Springfield and Greene County should regulate land development consistently with the Springfield Area Land Use Plan map, Figure 18-7.

Objective 15 - Neighborhoods: The City and the County should work to create neighborhoods that are comprehensively planned, include all needed public facilities, provide for bicyclist and pedestrian movement, accommodate a variety of housing types and exhibit a sense of identity.

Objective 16 - Environment: The Springfield-Greene County community should use environmental resources, particularly stream corridors, as means of improving urban quality of life, safeguarding health, promoting private investment and creating long-term economic strength.

Objective 17 - Housing Choice: Springfield and Greene County should work to ensure a wide range of choice in living arrangements throughout the urbanized area through the promotion and protection of lands of suitable characteristics and environmental quality.

Ob*jective 18 - Commercial Development:* Springfield and Greene County should work to provide sufficient and appropriate locations for well-designed, commercial development to ensure a wide range of goods and services for the urbanized areas of Greene County.

Objectives 19 - Office Development: Springfield and Greene County should provide sufficient and convenient locations for well-designed, compatible office and institutional development consistent with other requirements of *Vision 20/2*0.

Objective 20 - Industrial Development: Springfield and Greene County should work to provide the community with industrial areas that facilitate economic development and job retention, that are well integrated into the fabric of the community, and that are responsive to environmental concerns.

Objective 21 - Rural House Clustering: Greene County should allow houses to be clustered on smaller than average lots in exchange for careful siting and open space preservation.

Objective 22 - Road Corridors: Plan for or re-create patterns of land use and road function that are mutually supportive, particularly along arterial roadways.

Community Facilities Plan

Objective 1 – Provide facilities and services through the Shared Use Principle: To the extent feasible, public entities should provide facilities by sharing facilities and resources.

Objective 4 -- Provide facilities and services in conjunction with orderly growth and development: The location of community facilities should be consistent with plans for future growth and development.

Community Physical Image Plan

Objective 2: Improve the appearance of the major roadway corridors in Springfield.

Objective 3: Build residential neighborhoods that foster a sense of community and interaction among neighbors, provide a sense of identity and belonging, and create a sense of comfort and security.

Objective 4: Accentuate the impression that Springfield is composed of several districts and neighborhoods to build pride and identity.

Objective 5: Build an integrated system of parks, open space, greenways and parkways that will deliver significant aesthetic and functional benefits to the entire Springfield community.

Neighborhoods Plan

Objective 1 -- Sustainability: Promote continuous public and private reinvestment to ensure that established neighborhoods remain attractive places to live.

Objective 2 -- Physical Planning: Create neighborhoods that are comprehensively planned, include all needed public facilities, provide for bicyclist and pedestrian movement, accommodate a variety of housing types, minimize land use incompatibilities, and exhibit a sense of identity.

Objective 3 -- Street Network: Protect neighborhoods from the deleterious effects of high-speed or cut-through traffic while still providing street connections in all four directions.

Objective 4 -- Park System: Provide neighborhood park facilities at convenient locations throughout the Springfield urbanized area.

Objective 5 -- Walking and Bicycling: Provide pedestrian and bicyclist connections through and among all residential neighborhoods.

Objective 6 -- Housing Design: Encourage single-family housing that creates an inviting street corridor and attached housing that is an attractive alternative and is complementary to and linked with the larger neighborhood.

Objective 7 -- Neighborhood Services and Facilities: Provide municipal services and facilities with the aim of maintaining or improving older neighborhoods and creating lasting value in emerging neighborhoods.

Transportation Plan

For Streets and Highways

Objective 1. Develop an adequate thoroughfare system that will ensure

- Orderly development of the community,
- Safe and efficient movement of people and goods, and

- Efficient expenditure of public funds.

Objective 5. Map corridors designated as rights-of-way for future thoroughfares so development can be coordinated with road system.

Objective 7. Maximize traffic flow by implementing access management principles on arterial and collector streets.

Objective 8. Minimize potential traffic conflicts by controlling the frequency and location of driveway access to arterial and collector streets.

For Transit

Objective 2. Within the limits of financial capabilities, provide transit service to all parts of the community that can generate acceptable levels of ridership.

Objective 6. Evaluate the transit system on a regular basis according to specific criteria in order to determine the need for service improvements, curtailments, reroutings, route extensions, fare revisions, and other policy changes.

For Paratransit

Objective 1. Maintain the capability to provide a carpool/rideshare matching service to the general public.

For Bicycles

Objective 1. Create a bicycling system that capitalizes on the roadway network and include a series of trail linkages.

Objective 2. Create a system of bicycle routes that are direct, convenient, safe, and easy to use; that minimize potential conflicts with pedestrians and motor vehicles; and that can be maintained so they do not present hazards to safe bicycling.

Objective 3. Link business centers and neighborhoods with bicycling facilities.

Objective 8. Provide for convenient bicycle parking at destinations.

For Pedestrians

Objective 1. Provide Sidewalks along all newly developed arterial, collectors, and local streets in areas with population densities that are conducive to pedestrian travel.

Objective 3. Provide sidewalks along state highways in urbanized areas.

Objective 5. Encourage the development of land-use patterns that accommodate pedestrian travel.

Objective 6. Provide for safe pedestrian accessibility between neighborhoods and activity areas.

Objective 7. Provide enhancements in retail areas for better pedestrian connections between establishments, thereby minimizing vehicular trips.

Objective 9. Encourage new business proprietors to provide pedestrian connections from the front door through the parking areas, also providing connections to adjacent activity areas.

For Airport

Objective 1. Enhance the Springfield-Branson Regional Airport, its commercial and general aviation interests, and its regional aviation industries; and provide for appropriate aviation development while minimizing any negative impact on adjacent land uses.

Objective 2. Continue the phased implementation of the master plan for the Springfield-Branson
Regional Airport, ensuring that improvements are timed to be in place when warranted by air traffic.

Objective 3. Coordinate airport development with land use patterns to ensure that environmental conflicts are minimized.

Objective 4. Update the airport plan as needed to ensure the continued validity of the forecasts and recommendations of the plan.

For Trucking

Objective 1. Locate truck-generating facilities along major streets, or on collector streets connecting directly to major streets, in order to encourage trucks to confine their travel to arterials and expressways.

Objective 2. Protect residential neighborhoods from the intrusion of truck travel.

Objective 7. Encourage the development of intermodal or multi-modal facilities, accommodating rail and trucking needs, in the Springfield area.

For Railroads

Objective 1. Provide an appropriate degree of safety between railroad traffic and motor vehicle traffic.

Objective 2. Provide grade-separated crossings with adequate horizontal and vertical clearances between rail lines and high-volume streets.

Objective 3. Provide adequate warning devices at railroad crossings where grade separation is not feasible.

Objective 4. Encourage the development of compatible land uses in areas adjoining rail lines.

Objective 8. Provide for industrial land uses in proximity to rail service where appropriate.

Actions from Comprehensive Plan

Actions from Comprehensive Plan Relating to Land Use. Much of the property within the Northwest Development Study area is undeveloped or underdeveloped. As a result, changes in land use are anticipated. The following are actions from the Comprehensive Plan that should be applied to any land use changes within the study area. For more information and more actions that relate to land use issues go to the *Growth-Management and Land Use* element of the *Springfield-Greene County Comprehensive Plan.*

> Comprehensive Plan Action: Limit auto-oriented commercial districts to major arterial streets where the surrounding development pattern will not support high levels of pedestrian use or to streets where auto-oriented land uses can be compatibly concentrated.

Comprehensive Plan Action: Encourage the location of medium and high density residential uses along collector and arterial streets.

Comprehensive Plan Action: Support the development of mixed-use areas.

Comprehensive Plan Action: Limit auto-oriented commercial districts to major arterial streets where the surrounding development pattern will not support high levels of pedestrian use or to streets where auto-oriented land uses can be compatibly concentrated.

Comprehensive Plan Action: Encourage developments with innovative site plans that combine various residential densities, and where appropriate, a mix of uses including neighborhood-serving nonresidential uses.

Comprehensive Plan Action: Attached housing should be created as an attractive, essential and acceptable alternative to conventional detached housing.

- Encourage the use of single-family design "vocabulary" in multifamily and attached buildings. This means that multi-family housing should have elements commonly found in single-family housing such as pitched roofs, articulated facades, entrances visible from the public street, porches or balconies, and a maximum height of three to four stories. When garages cannot be located to the rear or on the interior of the block, they should be set back similar to the requirements for single-family housing.
- Attached housing should be built in groupings so that it fits into the overall residential context rather than being sequestered into large project sites.
- Attractive and acceptable locations for attached housing should be "master planned" into each major neighborhood (approximately one mile square) by continuously updating neighborhood sketch plans and referring to them when reviewing subdivision proposals. The Land Use Plan Map and the Zoning Map should be refined and adjusted to reflect current thinking about the inclusive design of each neighborhood.
- Attached housing should be located at high-amenity locations along the Parkways and the Greenways, and overlooking parks.
- Duplexes should be designed for visual compatibility with single-family housing, should be scattered among the neighborhood rather than concentrated, and may be used as a transitional building type near larger buildings and street intersections.

Comprehensive Plan Action: Design commercial and office areas to function effectively through common design features, shared vehicular access points and circulation patterns, shared utility access and service entrances, and common pedestrian circulation. Encourage the effective use of location, design and landscaping of office uses to screen and buffer neighborhoods from lights, signs, traffic noise and pollution, and other factors incompatible or conflicting with adjacent land uses.

Comprehensive Plan Action: Encourage the clustering of offices in common buildings, groups of buildings, or large sites rather than in strips along major roads. Encourage the effective use of location, design and landscaping of office uses to screen and buffer neighborhoods from lights, signs, traffic noise and pollution, and other factors incompatible or conflicting with adjacent land uses. Allow carefully planned, low volume office developments to be used as transitions and buffers between commercial and residential areas.

Comprehensive Plan Action: Industrial areas should be directly accessible to one or more of the following regional transportation facilities**:** airports, railroads, arterial roads, freeways, expressways or the Interstate Highway System. Industrial areas should be served by major roads which have adequate capacity and are built to carry heavy freight traffic. Sites should be designed to accommodate public transit and to encourage shared commutes.

Comprehensive Plan Action: Provide for industrial areas that are accessible to one or more of the following regional transportation facilities: airports, railroads, and the arterial roads or the interstate highway system.

Actions from Comprehensive Plan Relating to Density. An important concept found throughout the various elements of the Comprehensive Plan is the importance of maintaining or increasing the existing density of the existing Springfield urban area. The plan addresses the importance of avoiding urban sprawl and maintaining a balanced and compact city form. A compact development pattern also lowers the cost of infrastructure, especially roads, and the amount of automobile pollution. For more information and more actions that relate to land use issues go to the *Growth-Management and Land Use* element of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: Urban growth in Springfield and Greene County should be guided to locations either contiguous to or within presently

urbanized areas. Development should be either urban, compact and efficient, or rural and very low density.

Actions from Comprehensive Plan Relating to Activity Centers. Another important concept repeated throughout the Springfield-Greene County is the importance of developing discrete, well-designed, and viable Activity Centers. Activity Centers are located at the intersection of expressways and or arterials. Not all such intersections will be classified as Activity Centers, only the intersections with the highest traffic, the most viable residential surroundings, the best vehicular and transit and bike/pedestrian access will be indicated as Activity Centers. The plan specifies 24 Activity Centers in the Springfield urban area and four in the Northwest Development Study area. For more information and more actions that relate to land use issues go to the *Growth-Management and Land Use* element of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: Encourage in the Activity Centers higher density development, particularly employment, shopping and multi-family housing, served by transit, major roads and bicycle routes.

Comprehensive Plan Action: The elements of an Activity Center will vary from one to another, but each should include, at a minimum, retail and office buildings and, ideally, multi-family housing, restaurants, and hotels, entertainment, and community facilities such as churches, public agencies, libraries, parks, etc.

Comprehensive Plan Action: Activity Centers should epitomize many of the desirable design principles of a town or city, but accomplish them on a smaller scale. Therefore, these design principles should be observed when preparing or reviewing plans for an Activity Center**:** each should have a diversity of uses and users; each should have attractive and useable public space toward which the private development is oriented; each should accommodate the pedestrian, the bicyclist and the transit user; each should have a link, either direct or indirect, to the regional open space network; each should have a definable center and edge.

Actions from Comprehensive Plan Relating to Neighborhoods and Housing. During development of the Comprehensive Plan, considerable time was committed to the issues of neighborhoods and housing. These issues were addressed in several elements of the plan. In addition, neighborhoods are a Springfield City Council

priority. For more information and more actions that relate to neighborhoods and housing issues go to the *Neighborhoods and the Community Physical Image* elements of the *Springfield-Greene County Comprehensive Plan.*

> Comprehensive Plan Action: Undeveloped land should be planned and designed on the basis of creating identifiable neighborhoods.
>
> Comprehensive Plan Action: To the extent feasible, new neighborhoods should be functionally self-sufficient in terms of neighborhood commercial services and proximity to park or greenway facilities.
>
> Comprehensive Plan Action: Use a variety of development and redevelopment strategies such as the neighborhood unit concept, planned mixed-use developments, rural clustered housing or other innovative design concepts to build strong neighborhoods and a sense of community.
>
> Comprehensive Plan Action: Fined-grained diversity is a key to making attached housing compatible with single-family housing. Require variety in the style and density of attached housing within each neighborhood. Avoid the appearance of large multi-family "projects." Stipulate that no more than approximately 75 to 100 of the same basic type of attached housing may be built in one location.
>
> Comprehensive Plan Action: Each neighborhood should contain a range of housing types including single-family detached, townhouses, and apartments. Some portion of each type of housing should, ideally, be available for occupancy on either an ownership or lease basis.

Actions from Comprehensive Plan Relating to Parks and Open Space. The first element of the Comprehensive Plan to be adopted by both the City of Springfield and by Greene County was the *Parks, Open Space, and Greenways* element. Issues relating to parks were also addressed in other elements of the Comprehensive Plan. For more information and more actions that relate to land use issues go to the *Parks, Open Space, and Greenways* element of the *Springfield-Greene County Comprehensive Plan*, and the *Community Physical Image* element.

> Comprehensive Plan Action: Preserve open space in new developments by using open space subdivisions, planned unit developments, transfer of development rights between land owners, conservation easements, etc.

Comprehensive Plan Action: Implement the multi-jurisdictional plan for greenways along the major creeks in the Springfield vicinity, including the public acquisition of land. Acquire land for parks at locations along the creeks that include prime examples of the regional environment and/or particularly beautiful views of the creek valleys.

Comprehensive Plan Action: Preserve open space in new developments by using cluster subdivisions, planned unit developments, transfer of development rights between land owners, conservation easements, etc.

Actions from Comprehensive Plan Relating to Access and Transportation. Transportation and access issues are critical to the Comprehensive Plan. It is impossible to separate land use and transportation issues because each affects the other. The Transportation element of the Comprehensive Plan was also approved by the Metropolitan Planning Organization (MPO). For more information and more actions that relate to land use issues go to the *Transportation* element of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: Require all new residential subdivisions to provide public street access in each cardinal direction unless impractical because of natural, environmental or similar conditions. Ensure there is proper coordination between Springfield and Greene County when reviewing plats near the municipal boundary.

Comprehensive Plan Action: Develop measures (e.g., noise walls, berms, increased setbacks, etc.) to mitigate adverse noise impacts of major transportation facilities on adjacent less intense land uses.

Actions from Comprehensive Plan Relating to Bicycles and Pedestrians. The *Transportation* element of the Comprehensive Plan addresses bicycle and pedestrian issues. These issues make up an important element within transportation planning. Bicycle and pedestrian options are an important part of the multi-modal transportation planning being done throughout the Springfield metropolitan area. For more information and more actions that relate to land use issues go to the *Transportation* element of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: Design new housing and businesses to create compact, diverse and pedestrian-friendly neighborhoods and districts.

Comprehensive Plan Action: Sidewalks, ideally set six feet behind the curb, should be required along both sides of every public street. The minimum width should be four to five feet so that two adults may walk comfortably side-by-side.

Comprehensive Plan Action: Every residential neighborhood should accommodate bicycling and walking and be connected to the rest of the city via bicycle lanes or paths and sidewalks. Pedestrian and bicyclist networks should be comprehensively planned for each neighborhood to ensure coordination and continuity among individual subdivisions, commercial sites, parks, schools and greenways.

Comprehensive Plan Action: Stripe bicycle lanes on designated bicycle routes whenever space allows.

Comprehensive Plan Action: The City of Springfield and Greene County should consider modifying their roadway marking standards to provide additional width on the outside travel lanes on roadways that are included on the Springfield-Greene County Bikeway Map.

Comprehensive Plan Action: Provide wide curb lanes of 14-feet or more for commuter bicycle travel in Springfield-Greene County, especially along those facilities that are designated as part of the bicycle route system.

Comprehensive Plan Action: Work with existing businesses to address the importance of providing pedestrian connections through their parking areas and to adjacent attractions.

Comprehensive Plan Action: Jurisdictions should encourage proprietors of new major businesses to provide pedestrian connections from the front door, through the parking areas, to connect to adjacent activity areas.

Comprehensive Plan Action: Every residential neighborhood should accommodate bicycling and walking and be connected to the rest of the city via bicycle lanes or paths and sidewalks. Pedestrian and bicyclist networks should be comprehensively planned for each neighborhood to ensure coordination and continuity among individual subdivisions, commercial sites, parks, schools and greenways. Narrow easements or public rights-of-way solely for pedestrians and bicyclists should be used to make critical connections when a motorized passage is not desirable.

Comprehensive Plan Action: Every local residential street should also accommodate walking via sidewalks and connections with many other roads. Sidewalks should be required along both sides of every local, collector and arterial Street. The minimum width should be five feet so that two adults may walk comfortably side-by- side. Sidewalks should be separated from the street by a minimum 6-foot wide strip of grass and trees. Where residential densities are extremely low or other circumstances dictate it, a sidewalk need be provided on only one side of the street. The sidewalk network should connect to the greenway pedestrian trails and also link to commercial areas, parks and schools. Missing segments of the sidewalk system should be completed.

Actions from Comprehensive Plan Relating to the Airport. As discussed earlier, the Springfield-Branson Regional Airport is at the heart of the Northwest Development Study area. The Springfield-Branson Regional Airport is growing in size and use. A new airport terminal and a new airport access road are being designed and will be built within the next few years. For more information and more actions that relate to land use issues go to the *Transportation* element of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: It is critical that the City of Springfield and Greene County follow existing practices for protecting noise levels, the environmental quality, and the land use compatibility of the Springfield-Branson Regional Airport area. The city and the county should continue the existing zoning patterns in effect around Springfield Regional Airport. No rezoning of agricultural land to noise-sensitive uses should be allowed within the noise contours (65-75 Ldn) unless a detailed noise analysis is made and noise control features are included in the building design.

Actions from Comprehensive Plan Relating to Urban Design. The Springfield metropolitan area is placing increasing importance on good urban design. Citizens and realizing the importance of the built environment and its impact on the quality of life for people who live in or work in or visit the Springfield area. For more information and more actions that relate to land use issues go to the *Community Physical Image, Growth-Management and Land Use,* and *Neighborhood,* elements of the *Springfield-Greene County Comprehensive Plan.*

Comprehensive Plan Action: Support urban design standards that emphasize a traditional urban character in those commercial areas that were designed with a pedestrian orientation.

Comprehensive Plan Action: Trees should be planted in the public right-of-way along every street, including commercially-oriented arterial roads and local residential streets. Landscaping along the streets should be a joint public and private effort and could take advantage of both the public right-of-way and the private setback space.

Comprehensive Plan Action: Maintain the current setback requirements that allow houses to be built relatively close to the street. Continue to require that infill housing in existing neighborhoods reflect the setbacks of existing houses.

Comprehensive Plan Action: Ensure that buildings fit into the neighborhood through the use of compatible scale, roof pitch, building massing and materials. Design the front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, while trash/recycling storage, play equipment and outdoor storage should be located in the back. The main entry should face the street. Buildings should address the street with varied and articulated facades, frequent entries and windows. Porches and balconies should be encouraged, and facades consisting of long blank walls or series of garage doors should be prohibited.

Comprehensive Plan Action: Design and construct city gateways and entry monuments at key Springfield access points to welcome visitors, demarcate city boundaries and establish a theme or image for the City. Create methods of financial assistance or tax incentives for public or private landowners that are interested in improving entryways. Coordinate with state and federal highway departments to implement the City's entryway beautification plans (continue the effort begun with work on the James River Freeway).

Comprehensive Plan Action: Improve the edges of the Kansas and Chestnut Expressways to parkway standards.

Comprehensive Plan Action: Include extra landscaping and berming along residential areas when installing public landscaping along major roads or when building new arterial roads.

Comprehensive Plan Action: Require that new residential developments include plantings and berming along major roadways to screen housing from the effects of traffic.

Comprehensive Plan Action: Springfield will add many more trees to the edges of commercially oriented roads such as Glenstone, Campbell and Kearney.

Comprehensive Plan Action: Support urban design standards that emphasize a traditional urban character in those commercial areas that were designed with a pedestrian orientation.

- Identify commercial districts in the city that reflect traditional urban form and develop appropriate standards and preservation objectives for these areas. The Center City Plan Element is a major step in this direction. Plans and zoning regulations for the Walnut Street and Commercial Street Historic Districts also contribute to the preservation of these urban streets.
- Enhance unique characteristics of the traditional commercial districts by encouraging appropriate building forms and designs, historic preservation objectives, appropriate site plans, and by maintaining high quality public spaces and infrastructure.
- Enhance pedestrian or transit-oriented commercial districts with street furniture, tree planting, bicycle racks, and improved transit amenities.
- Orient new buildings to the street to foster safe and successful commercial districts, particularly in Center City.
- Limit the construction and visual impact of billboards in neighborhood commercial districts.

Comprehensive Plan Action: Site plans for attached housing should provide an attractive street frontage and some useable outdoor spaces for the residents, whether it be ground-level or a balcony.

- Encourage front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, with trash/recycling storage, play equipment and outdoor storage located in the back. The main entry should face the street.
- Buildings should address the street with varied and articulated facades, frequent entries and windows. Porches and balconies should be encouraged, and facades consisting of long blank walls or series of garage doors should be prohibited.
- Driveways and garages should be located to the rear of the lot or interior of the block. Porches and front steps should face the local street.
- Encourage unity as well as diversity by specifying a common design vocabulary among the buildings, a clear pathway system and shared outdoor space that unifies and integrates the site.

- Define all outdoor spaces, distinguishing between those reserved for residents and those open to the public. Enclose the shared outdoor space with buildings, low fences or hedges, and paths. Clearly define the boundaries and transitions between shared and private outdoor space.
- Provide convenient access to shared outdoor areas, amenities such as play equipment, seating and tables to encourage their use, and vegetation for seasonal shade.
- Control access by nonresidents via gateways, fences, plant materials or enclosed location. Locate outdoor spaces to allow for easy surveillance from inside homes.

Design Guidelines

The following design guidelines were developed as part of the *Southeast Springfield Development Study*. These proposals, in addition to actions from the *Springfield-Greene County Comprehensive Plan* should be applied to the Northwest Development Study area to ensure that development which takes place in the future is sensitive to existing development, improves the built environment of Springfield and Greene County, provides proper access for pedestrians, bicyclists, transit, freight hauling, and the individual automobile. In addition, the built environment must function properly, to the benefit of all citizens.

1. Residential Neighborhood Design Guidelines

The following guidelines will be used by City staff and officials to guide developers in their design process and to review their applications, in conjunction with the Springfield Zoning Ordinance. Some of these guidelines may be best achieved through the use of the planned-unit development feature of the Zoning Ordinance.

> Action from Southeast Springfield Development Study: Work with developers to achieve in each major neighborhood a range of housing types including single-family detached, townhouses and apartments. Some portion of each type of housing should, ideally, be available for occupancy on either an ownership or lease basis. Refer also to the guidelines on multiple-family housing below.
>
> Action from Southeast Springfield Development Study: Encourage a range of densities, housing types and building configurations; and discourage large housing projects that consist of a single building type.
>
> Action from Southeast Springfield Development Study: When combining housing types, it is preferable for the transition between types to occur at the rear rather than the front (i.e. across a courtyard or parking area rather than across the street).
>
> Action from Southeast Springfield Development Study: Local streets (either residential, commercial or industrial)
> should be interconnected to the extent possible. Cul-de-sacs should be used only to access small areas that could not otherwise be served without environmental impact or loss of parcels.
>
> Action from Southeast Springfield Development Study: It is essential to the long-term quality of the residential neighborhoods that the street corridor be

more than simply a conduit for automobiles. The street corridor improvements should provide an attractive green frontage for the houses, provide shade and enclosure for the street, calm the traffic speeds and provide safe places for people of all ages to walk and for children to play. Thus, local residential streets should be designed to the standards of the City of Springfield, which include: Pavement Width - 26 feet, Right-of-Way Width - 50 feet, Sidewalks - one or both sides, depending on the housing density, trees - both sides of the street, three feet behind the curb, cul-de-sacs - when cul-de-sacs are used, they each should include a landscaped island.

Action from Southeast Springfield Development Study: The City should encourage but not require that garages be set back from the front facade line of the house. Garages on corner lots should be rotated so they face the side street, if possible. Detached garages in the rear yard are acceptable.

Action from Southeast Springfield Development Study: Transitional architectural features should be strongly encouraged on the front of every residential building. These include porches, covered stoops, balconies and bay windows.

Action from Southeast Springfield Development Study: Plan for and encourage through zoning a variety of housing types, densities and costs in each major neighborhood.

Action from Southeast Springfield Development Study: Attached housing should be created as an attractive, essential and acceptable alternative to single-family detached housing. The following design guidelines should be observed by designers:

- Encourage the use of a single-family housing design vocabulary in multifamily and attached buildings, as expressed by pitched roofs, articulated facades, visible entrances, porches or balconies, and a maximum height of three to four stories. Taller buildings may be suitable for senior citizens housing, but not as a rule for family housing.
- Attached housing should be built in small groupings so that it fits into the overall residential context rather than being sequestered into large project sites. No more than approximately 75 units of any type of attached housing should be built in a single area.
- Apartment buildings should emulate single-family housing in their basic architectural elements -- pitched roofs, articulated facade, identifiable front door and orientation to the local public street.

Balconies overlooking the public street are highly encouraged. When garages cannot be located to the rear or on the interior of the block, they should be set back similar to the requirements for single- family housing. Ensure that buildings fit into the neighborhood through the use of compatible scale, roof pitch, building massing and materials.

- Encourage unity as well as diversity by specifying a common design vocabulary among the buildings, a clear pathway system and shared outdoor space that unifies and integrates the site of the attached housing.
- Design the front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, with trash and recycling storage, play equipment and outdoor storage located in the back. The main entry should face the street.
- Buildings should address the street with varied and articulated facades, frequent entries and windows. Porches and balconies should be encouraged, and facades consisting of long blank walls or series of garage doors should be prohibited.
- If a multifamily building or attached housing is developed near single-family detached housing, ensure that the width of the building facade facing the street is similar to that of a single-family house. Attached units should be grouped in rows of no more than four or six units to avoid a monolithic appearance.
- Duplexes should be designed for visual compatibility with single-family housing, should be scattered among the neighborhood rather than concentrated, and may be used as a transitional building type near larger buildings and street intersections.
- Driveways and garages should be located to the rear of the lot or interior of the block. Porches and front steps should face the local street.
- Improve security by creating visual indications of the boundaries between private space, public space and shared space.
- Provide each housing unit with clearly defined private or semi-private outdoor space such as a yard, patio, porch or balcony, with direct access from inside the unit. Clearly define the boundaries of private outdoor space with elements such as fencing, sidewalks and vegetation.
- Use semi-private outdoor spaces such as porches and patios to increase the sense of privacy and security within the home. Provide opportunities for surveillance of shared outdoor areas such as streets, sidewalks and play areas from within the home.

2. Commercial District Design Guidelines

The following guidelines will be used by City staff and officials to guide developers of retail and service business properties in their design process and to review their applications.

Action from Southeast Springfield Development Study: Any single-family neighborhoods that abut commercial development should be protected or screened from adverse visual impacts. Building heights and massing should be kept low or reduced adjacent to single-family housing. Except for intentionally mixed- se developments, landscaping, berming and/or fencing should separate commercial and residential activities.

Action from Southeast Springfield Development Study: Commercial building heights within 100 feet of existing or proposed detached housing or townhouses should not exceed 2 stories or 24 feet.

Action from Southeast Springfield Development Study: Building Walls. All sides of a building visible to the public, whether viewed from a nearby property or a roadway, should display a similar level of quality and architectural finish. This should be accomplished by integrating architectural variations and treatments such as windows and other decorative features into all sides of buildings. Building walls along public streets should not be blank. All walls facing streets or walkways should include windows, doors, openings or other treatments that help mitigate the unfriendly appearance of blank walls and improve the environment for motorists and pedestrians. One or more of the following design techniques should be used: changes in color, texture or material; projections, recesses and reveals expressing structural bays, entrance or other aspects of the architecture with a minimum change of plane of 12 inches; groupings of windows or fenestration; arcades and pergolas; display windows.

Action from Southeast Springfield Development Study: Roofs should be peaked, sloped, gabled or shed-style to add visual variety and compatibility with nearby housing.

Action from Southeast Springfield Development Study: Retail Sites: Design attractive commercial sites that harmonize with residential areas, reduce the visual impact of parking and nicely accommodate the pedestrian and the bicyclist.

Action from Southeast Springfield Development Study: The exterior appearance of commercial buildings should harmonize with nearby residential areas. Smooth-faced concrete block and tilt-up concrete panels should not be used. Metal should not be used as a primary exterior surface material. It may be used as a trim material covering no more than 10 percent of the façade or as a roof material. Façade colors should be earth tones with a low reflectance. High-intensity, metallic, black or fluorescent colors are prohibited. High-intensity, primary, metallic or fluorescent colors should not be used on any roof area visible from a residential area, public or private right- f-way or public open space.

Action from Southeast Springfield Development Study: Lighting from commercial developments should be carefully designed and strictly regulated. Lighting from commercial developments shall be designed so that it does not directly shine off the site, either onto public streets or onto residential areas. All developments should meet or exceed the requirements of Section 6-1400 of the Springfield Zoning Ordinance. In particular, lighting from gasoline station canopies shall be recessed and/or shaded so that the luminaire cannot be seen from off the site and light cannot shine directly off the site.

Action from Southeast Springfield Development Study: Commercial sites should be composed of a series of neighborhood-scale “blocks” of development with an average length of 400 feet. Blocks will be defined by driveways and pedestrian or bicyclist paths.

Action from Southeast Springfield Development Study: Every new commercial development shall be landscaped and screened consistent with the requirements of Sections 6-1000, Screening and Fencing, and 6-1200, Landscaping and Bufferyards, of the Springfield Zoning Ordinance.

Action from Southeast Springfield Development Study: The design of parking areas should be regulated according to Section 6-1301 of the Springfield Park Zoning Ordinance. The following guidelines are supplementary.

Action from Southeast Springfield Development Study: Large parking lots should be divided into bays by raised islands landscaped with trees. Parking areas should be broken into individual lots not to exceed 200 cars. These sections should be separated by major landscaped buffers to provide visual relief.

Action from Southeast Springfield Development Study: In parking lots, landscaped islands should be provided at maximum intervals of every twenty parking spaces and at the ends of all rows of parking. Parking islands should have a minimum width of 8 feet. A continuous poured-in-place concrete curb should be provided around parking islands to prevent vehicular intrusion. Parking islands may not be used to satisfy the open space requirement except where islands are greater than 500 square feet in size. Additional landscaping is to be provided within parking lots in accordance with the requirements of the "Landscape" section of this chapter.

Action from Southeast Springfield Development Study: Parking directly adjacent to buildings should be avoided wherever possible. A minimum setback of 15 feet should be reserved for pedestrian circulation and landscaping between building and parking areas except for drop-off and loading zones. This distance may be reduced to 10 feet in the industrial areas and may not require landscaping depending upon its proximity to streets and common open space.

Action from Southeast Springfield Development Study: Driveways should be consolidated to minimize external street congestion.

Action from Southeast Springfield Development Study: Landscaping layout and design should clearly define and direct pedestrian movement through parking areas.

Action from Southeast Springfield Development Study: All parking should be screened from public streets by appropriate landscaping.

Action from Southeast Springfield Development Study: Where parking structures are used, the architectural design and use of materials should be similar or compatible with the architecture of adjacent buildings. Screening at the perimeter of the structure should be provided so that automobiles are screened up to a height of three feet six inches above the first floor level. Above-grade structure parking should incorporate planter boxes on all deck perimeters facing public street frontages or pedestrian circulation/plaza areas. No parking structures should be located within a front yard.

Action from Southeast Springfield Development Study: Pedestrians should be able to move with comfort and security between the public sidewalks and private developments and among buildings on the same site. As much as possible, pedestrian walkways should be provided directly between adjoining

developments. If long blocks are used, mid-block pedestrian and bicyclist access between the residential neighborhood and the commercial development should be provided.

Action from Southeast Springfield Development Study: Pedestrian routes from the street to the building entrances and through each site should be clearly defined using building massing and architecture, sidewalks, landscaping and lighting. Awnings and arcades over windows and doors should be employed to protect pedestrians from the elements.

Action from Southeast Springfield Development Study: Each development should include a bicycle rack, and sidewalk ramps should be installed at curbs for both bicyclists and the disabled.

Action from Southeast Springfield Development Study: Developers should be encouraged to include sidewalk cafes or outdoor eating for restaurants, as well as outdoor seating.

Action from Southeast Springfield Development Study: Signs should be controlled according to Section 5-1400, Signs, and Section 5- 1410, Scenic Corridor Overlay District, of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action from Southeast Springfield Development Study: Freestanding signs should have a limited number of names and/or logotypes (a maximum of three). They should be designed to appear as a single sign from a distance through the use of a framework of materials consistent with the building facade.

Action from Southeast Springfield Development Study: Wall signs should not be white backlit plastic; individual letters are preferred; colored plastic panels with white or colored letters may also be acceptable. No bulletin signs (either portable or permanent) should be allowed.

Action from Southeast Springfield Development Study: Gasoline station canopy-face signs should not be allowed.

Action from Southeast Springfield Development Study: Commercial buildings shall not be allowed to be designed as signs through the use of colors or patterns that are particular to the public communication system of the company or franchise. Buildings should be designed for re-use by other businesses

without substantial renovations to their exterior appearances. This guideline is intended to create buildings that are compatible with the generally residential nature of the community and which are modest in their outward appearance.

Action from Southeast Springfield Development Study: The City will support through zoning, site plan reviews and shared parking the creation of mixed-use developments that include housing or offices above shops.

Action from Southeast Springfield Development Study: On major corner sites, it would be beneficial to locate a building near the street intersection. The City's requirements for a clear vision zone along the right-of-way lines of both intersecting streets must be maintained, however.

3. Office, Industrial and Business Park Design Guidelines

The following guidelines are intended to promote appealing office, industrial and business park development in Southeast Springfield. While consistency is critical in order to attract and retain the best corporate "citizens," these standards also permit design flexibility in order to address individual company needs. Precedence is given to any provisions of the Springfield Zoning Ordinance that are found to overlap these guidelines. In general, the development of industrial and office sites should be planned to provide pleasant and safe environments for employees and visitors. Multiple building projects should cluster building entries. Parking lots should be located for ease of access while minimizing their visual dominance. Care should be taken to avoid a rigid strip-like arrangement of site elements in order to promote spatial diversity along street corridors. Sidewalks and paths should be provided to help encourage pedestrian activity and to link the pedestrians to various activities and facilities.

Action from Southeast Springfield Development Study: All structures and buildings should provide a clear view of the public entry from adjacent public rights-of-way.

Action from Southeast Springfield Development Study: Each principal building on a site should have a highly visible entry featuring no fewer than two of the following: canopies, overhangs, arcades, raised corniced parapets over the door, peaked roof forms, arches, outdoor patios, display windows, architectural details or integral planters .

Action from Southeast Springfield Development Study: Driveway setbacks from adjacent property lines, other than along street frontages, should be a minimum of 10 feet, except where access driveways are shared by adjacent property owners.

Action from Southeast Springfield Development Study: No landscape setback is required between warehouse and industrial uses provided this abutment is not common open space.

Action from Southeast Springfield Development Study: All setbacks should be planted in accordance with the landscape setback treatments described in these guidelines.

Action from Southeast Springfield Development Study: Landscaping should be regulated according to Section 6-1200 of the Springfield Zoning Ordinance.

Action from Southeast Springfield Development Study: The design of parking areas should be regulated according to Section 6-1301 of the Springfield Zoning Ordinance. Refer also to the supplementary parking design guidelines in the Commercial District section of this chapter.

Action from Southeast Springfield Development Study: Direct, continuous sidewalks should be built across all large parking areas.

Action from Southeast Springfield Development Study: Internal pedestrian plazas should be used to create “place” and tie uses together.

Action from Southeast Springfield Development Study: Building entries should be oriented toward plazas and walkways, not parking lots.

Action from Southeast Springfield Development Study: Bicycle locking racks should be provided in visible and secure locations.

Action from Southeast Springfield Development Study: Sidewalks adjacent to any buildings containing retail uses, should be 8 feet wide.

Action from Southeast Springfield Development Study: All other sidewalks should have an unobstructed width of 5 feet where pedestrian movement is anticipated and should be handicapped accessible. The connection of the five-foot pedestrian path to the adjacent public sidewalks is encouraged.

Action from Southeast Springfield Development Study: Office Development: Promote office development that includes attractive architecture and environmentally-sensitive site planning and which complements nearby housing and provides attractive outdoor spaces for employees and visitors.

Action from Southeast Springfield Development Study: Service, Loading and Storage Area Guidelines Off-street loading should be regulated according to Section 5-1600 and 6-1302 of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action from Southeast Springfield Development Study: All storage, loading or service areas must be located in the side or rear yards of buildings.

Action from Southeast Springfield Development Study: No articles, goods, materials, machinery, equipment, vehicles, plants, trash, animals or similar items should be stored or kept in the open or exposed to view from adjacent properties, parking areas, public streets or pedestrian walkways.

Action from Southeast Springfield Development Study: Loading and servicing areas should be designed so that the entire loading or servicing operations are conducted within the confines of the building site. In addition, these areas must be integrated into the building architecture. Loading doors should be recessed from the building face to minimize their visual prominence . No loading areas should be visible from public streets or building entries .

Action from Southeast Springfield Development Study: Screening walls and fences should match the building architecture.

Action from Southeast Springfield Development Study: All loading and storage areas should be screened from public streets and non- industrial land uses by using walls, fences and/or landscaping.

Action from Southeast Springfield Development Study: Screening should be aesthetically pleasing and complementary to the building and its surroundings.

Action from Southeast Springfield Development Study: Objects such as storage tanks, processing equipment, cooling towers, communication towers, vents, vehicles, or any other structures or equipment should be compatible with the building architecture or screened from adjacent properties, parking areas, public streets and pedestrian walkways by using fences or walls.

Action from Southeast Springfield Development Study: Fences or walls should be of height at least equal to that of the materials or equipment being stored.

Action from Southeast Springfield Development Study: Materials and colors for fences and walls should be compatible with the building architecture.

Action from Southeast Springfield Development Study: Chain link fencing is not permitted in areas visible from non-industrial properties, parking areas, public streets and pedestrian walkways.

Action from Southeast Springfield Development Study: A fence of heavy wood, brick or masonry columns should be installed where a non-residential development abuts a residential area. Landscaping should be provided on the residential side of the fence.

Action from Southeast Springfield Development Study: Long runs of fencing parallel to public streets are discouraged. Where long runs cannot be avoided, the horizontal alignment of the fences should be varied to create visual variety and to provide planting “pockets” between the fence and the street.

Action from Southeast Springfield Development Study: All permanent utilities should be underground unless otherwise approved.

Action from Southeast Springfield Development Study: Utility appurtenances, utility meters, irrigation system, backflow precentors, transformers, etc., should not be visible from adjacent properties, parking areas, public streets and pedestrian walkways. Transformers should be grouped with utility meters whenever possible.

Action from Southeast Springfield Development Study: Lighting should be regulated according to Section 6-1400 of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action from Southeast Springfield Development Study: Lighting should be restrained, limited in extent, and respectful of each sites visual environment.

Action from Southeast Springfield Development Study: Durable and vandal resistant fixtures should be used.

Action from Southeast Springfield Development Study: Lamps should be efficient, long lived, readily available and easily replaced.

Action from Southeast Springfield Development Study: Light levels should be uniform along streets and primary pedestrian paths.

Action from Southeast Springfield Development Study: Lights should not be placed to cause glare or excessive light spillage onto neighboring sites.

Action from Southeast Springfield Development Study: Security lighting fixtures should not project above the roof-line of the building and should be shielded. The shields should be painted to match the surface to which they are attached. Security lighting fixtures should not be substituted for parking lot or walkway lighting fixtures, and should be restricted to lighting only loading and storage locations, or other similar service areas.

Action from Southeast Springfield Development Study: Exterior wall-mounted floodlights are expressly prohibited, except for security lighting called for in areas called out above.

Action from Southeast Springfield Development Study: Exterior lighting fixtures are to be as follows:

- parking lot driveway fixtures: cut-off type, metal halide, rectilinear style, aluminum extrusion luminaries, thirty-foot mounting height. Single or double luminary configuration on square or round pole. Luminary and pole should match street light finish or be compatible with the building materials.
- Pedestrian area and walk lights: at applicant's option.

Action from Southeast Springfield Development Study: It is recommended that accent illumination be provided at such key locations as building entries, driveway entries, and project signage.

Action from Southeast Springfield Development Study: Signs should be controlled according to Section 5-1400, Signs, and Section 5- 1410, Scenic Corridor Overlay District, of the Springfield Zoning Ordinance.

4. Mixed- and Multiple-Use Districts

Action from Southeast Springfield Development Study: Whenever the market can support it, the City should allow and encourage investments that combine more than one type of land use on a site. Mixed-use development implies a vertical relationship (e.g., offices or housing over shops) while multiple-use development means a side-by-side positioning. Either case promotes more efficient land use, reduces auto trips somewhat and creates a more interesting urban environment.

5. Arterial Roads

Action from Southeast Springfield Development Study: Arterial roads are another major public design opportunity. Arterials create a framework for the land use pattern and provide visual clues to the structure and order of the city. Sometimes these roads can be unattractive because of the width of their pavement and when they serve major traffic generators that demand large parking lots.

Action from Southeast Springfield Development Study: Therefore, it is imperative that the City embark on a program of landscaping along roads such as Glenstone Avenue, Highway J, Battlefield Road, National Avenue or the planned East-West Arterial. Trees should be planted in the public right-of-way – either during initial construction or as a retrofit project – as well as in the private setback. The same goes for the Major Arterials such as the James River Freeway or US 65, although those plantings would be entirely public responsibility. (Additional guidance on this subject can be found in the Community Visual Image and Character Plan of *Vision 20/2*0.) The City has an opportunity to create a highly landscaped network of roads across the community and on its perimeter, including River Bluff Road. The relatively small additional cost of such landscaping and decorative lighting will be returned to the community in tax base, economic development and quality of life.

6. Indigenous Materials

Action from Southeast Springfield Development Study: Designers of either private or public improvements should use native materials and plant species to the extent possible to harmonize their projects with the local environment. These include the limestone that is abundant and visible as rocky outcrops and bluff walls as well as the dominant tree species from the river alley and the uplands. The limestone might be a very appropriate material for bridge

fenestration or entry monuments. The rocky outcroppings should be preserved, not leveled, as they are symbolic of the Ozarks.

LONG RANGE PLAN COMPONENT

NORTHWEST DEVELOPMENT STUDY

Objectives for the Northwest Development Study Area

A number of objectives for the Northwest Development Study area have been identified. These objectives should serve as background when making land use and transportation decisions. These objectives are in line with the existing Comprehensive Plan that was developed in the 1990s as the result of a community-wide planning and visioning effort that involved hundreds of citizens for more than 18 months.

1. Balanced Growth: The metropolitan area can avoid urban sprawl, promote efficiency in the use of public facilities such as roads and sewers and schools, and can minimize commutes and related pollution by pursuing a planned and balanced growth pattern.

2. Activity Centers: Activity Centers should serve as locations for significant business development and medium to high density housing development. Activity Centers should optimize transportation investments, promote citizen convenience and investor confidence, establish a compact growth pattern, and a sense of urban excitement. Land in each activity center should be intensely and efficiently used.

3. Good Design: The City of Springfield and Greene County can help to improve the quality of life in the area by promoting good urban design in both the public sphere and in private development.

4. Transportation Facilities: The study area should be served by roads, transit services, and bicycle and pedestrian facilities that serve the people living and working in the study area as well as people passing through the area.

5. The Springfield-Branson Regional Airport: The airport should be surrounded by land uses that do not interfere with the functioning of the Springfield-Branson Regional Airport. Approaches to the airport should be attractive and should offer a positive impression of Springfield, Greene County, and the Ozarks.

6. The area of airport impact): Economic opportunities can be encouraged and protected by carefully planning development near the new airport terminal and the new airport road. Uses near the airport should not infringe on the functioning of the airport. They should also take advantage of opportunities created by airport expansion.

7. Parks, Open Space, and Greenways. The area should be served by a variety of parks, greenways, bike routes, and openspace facilities as outlined in Comprehensive Plan. Construction of the new Rutledge-Wilson Community Park will be important to

the Northwest Development Study area. Residential and business areas should be connected to park, greenway, and bicycle facilities.

8. Neighborhoods: The Northwest Development Study area should offer citizens a variety of attractive, affordable residential uses in attractive, compact, well defined neighborhoods. Diverse housing opportunities are necessary to a growing and increasingly diverse metropolitan area.

9. Natural Environment: Environmentally sensitive areas such as sinkholes, creeks, floodplains, steep slopes, and major forested areas should be protected and valued.

10. Mitigate highway noise. The Missouri Department of Transportation (MoDOT), the City of Springfield, and Greene County will use technologies that mitigate noise from interstate highways, freeways, and expressways.

Proposed Actions for the Northwest Development Study Area

Northwest Development Study Action 1. Construct a new road to serve the new replacement terminal at the Springfield-Branson Regional Airport. This road should have limited access and should provide good access to residents of the Springfield metro area and to people traveling beyond the Springfield metro area.

- Initiate Action: Metropolitan Planning Organization
- Primary Responsibility: Springfield Public Works, Missouri Department of Transportation, Springfield-Branson Regional Airport, Springfield Planning and Development Department
- Secondary Responsibility: Greene County Highway Department, Greene County Planning Department

Northwest Development Study Action 2. Provide an appropriate amount of neighborhood commercial uses. Increasing opportunities for neighborhood-scale shopping will increase the number of non-vehicle trips and shorten the length of the many vehicular trips. Neighborhood shopping areas conveniently provide goods and services to area residents. Neighborhood shopping facilities include: grocery stores, banks, doctor's and dentist's offices, drug stores, video stories, dry cleaners, Laundromats, gas stations, post offices, bookstores, small-scale clothing stores, hairdressers and barbers, hardware stores, and restaurants. Individual stores in neighborhood commercial areas should be small in scale. Big box retailers are not appropriate in neighborhood commercial areas.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department
- Primary Responsibility: Springfield Planning and Development Department, Green County Planning Department
- Secondary Responsibility: Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 3. Explore the possibility of providing additional transit service to the Northwest Development Study area.

- Initiate Action: Metropolitan Planning Organization

- Primary Responsibility: City Utilities

- Secondary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

Northwest Development Study Action 4. Provide a continuous and well spaced network of bicycle routes in the Northwest Development Study area. The bicycle routes should offer connections to points of interest throughout the metro area. Wherever possible, residential development should provide connections to bicycle routes and greenways (which also provide biking facilities).

- Initiate Action: Metropolitan Planning Organization

- Primary Responsibility: Springfield Public Works, Greene County Highway Department, Springfield Planning and Development Department, Greene County Planning Department

- Secondary Responsibility: Transportation Advisory Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 5. (Idea partially referenced in Transp. - airport unnumbered objectives) Prepare for and prioritize the roads identified on the Major Thoroughfare Plan.

- Initiate Action: Metropolitan Planning Organization

- Primary Responsibility: Springfield Public Works, Greene County Highway Department, Missouri Department of Transportation

- Secondary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

Northwest Development Study Action 6. Plan for future land uses that protect the airport from encroachment and that take advantage of the benefits of location near the airport. An area of Airport Influence should be developed surrounding the airport in order to ensure appropriate development with regard to land use and appearance to ensure development compatible with the Springfield-Branson Regional Airport.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department

- Primary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

- Secondary Responsibility: Metropolitan Planning Organization, Springfield-Branson Regional Airport, Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission, Partnership Industrial Center West development group.

Northwest Development Study Action 7. Rezone land in Activity Centers consistent with the recommendations of the Comprehensive Plan. This may entail development of an overlay zone.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department

- Primary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

- Secondary Responsibility: Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 8. Amend local zoning ordinances to provide a Business Park Zoning Classification as suggested in the Comprehensive Plan. The Business Park Zone should be applied to the area south of the Springfield-Branson Regional Airport as shown on the future land use map in the existing Comprehensive Plan.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department

- Primary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

- Secondary Responsibility: Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 9. Explore methods of protecting farmland on the rural-urban fringe.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department
- Primary Responsibility: Springfield Planning and Development Department, Greene County Planning Department
- Secondary Responsibility: Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 10. Implement the design guidelines found in the Comprehensive Plan and in the Southeast Development Study.

- Initiate Action: Springfield Planning and Development Department, Greene County Planning Department
- Primary Responsibility: Springfield Planning and Development Department, Greene County Planning Department
- Secondary Responsibility: Chamber of Commerce, Springfield Planning and Zoning Commission, Greene County Planning Board, Springfield City Council, Greene County Commission

Northwest Development Study Action 11. Develop an airport/police/fire training facility to be utilized by personnel throughout the region.

- Initiate Action: Springfield-Branson Regional Airport
- Primary Responsibility: Springfield Police Department, Springfield Fire Department, Springfield-Branson Regional Airport
- Secondary Responsibility: Springfield City Council

Northwest Development Study Action 12. MoDOT, the City of Springfield, and Greene County will explore technologies which reduce the impact of highway noise. The first step would be to adopt a Highway Noise Abatement Policy. Mitigation techniques include, but are not limited to the following: construction of noise barriers (berms, fences, walls, landscaping, etc), selection of pavement types that reduce noise, attention to the location of new subdivisions and the siting of individual dwelling units. New development should mitigate existing road noise.

- Initiate Action: Metropolitan Planning Organization (MPO)
- Primary Responsibility: Missouri Department of Transportation (MoDOT)
- Secondary Responsibility: City of Springfield, Greene County

Northwest Development Study Action 13. Develop strategies to encourage air passengers and freight bound for Ft. Leonard Wood to fly in and out of the Springfield-Branson Regional Airport. Address related ground transportation issues.

- Initiate Action: Springfield-Branson Regional Airport
- Primary Responsibility: Springfield-Branson Regional Airport, City of Willard, Metropolitan Planning Organization
- Secondary Responsibility: City of Springfield, Greene County

Northwest Development Study Action 14. Complete the North/South Corridor Study that is one of the MPO's five priorities. The purpose of this study is to determine the best strategies for relieving pressure on north/south roadways in the Springfield area.

- Initiate Action: Metropolitan Planning Organization
- Primary Responsibility: Metropolitan Planning Organization, Springfield Planning and Development Department, Greene County Highway Department, Springfield Public Works

- Secondary Responsibility: Greene County Planning Department, other MPO jurisdictions interested in the study.

Northwest Development Study Action 15. Investigate and study possible realignment of Highway 13 between Farm Road 94 and I-44..

- Initiate Action: Metropolitan Planning Organization

- Primary Responsibility: Metropolitan Planning Organization, Missouri Department of Transportation, Springfield Public Works, Greene County Highway Department

- Secondary Responsibility: Springfield Planning and Development Department, Greene County Planning Department

Northwest Development Study Action 16. Investigate and recommend new design guidelines for important gateways into the city, specifically West Division between Kansas Expressway and West Bypass.

- Initiate Action: City of Springfield and Green County Planning Departments

- Primary Responsibility: City of Springfield Planning and Development Department

- Secondary Responsibility: Springfield Planning and Development Department

Recommended Land Use Patterns

The following map (Figure 21) includes the following changes to the future land use map shown in the existing *Springfield-Greene County Comprehensive Plan*.

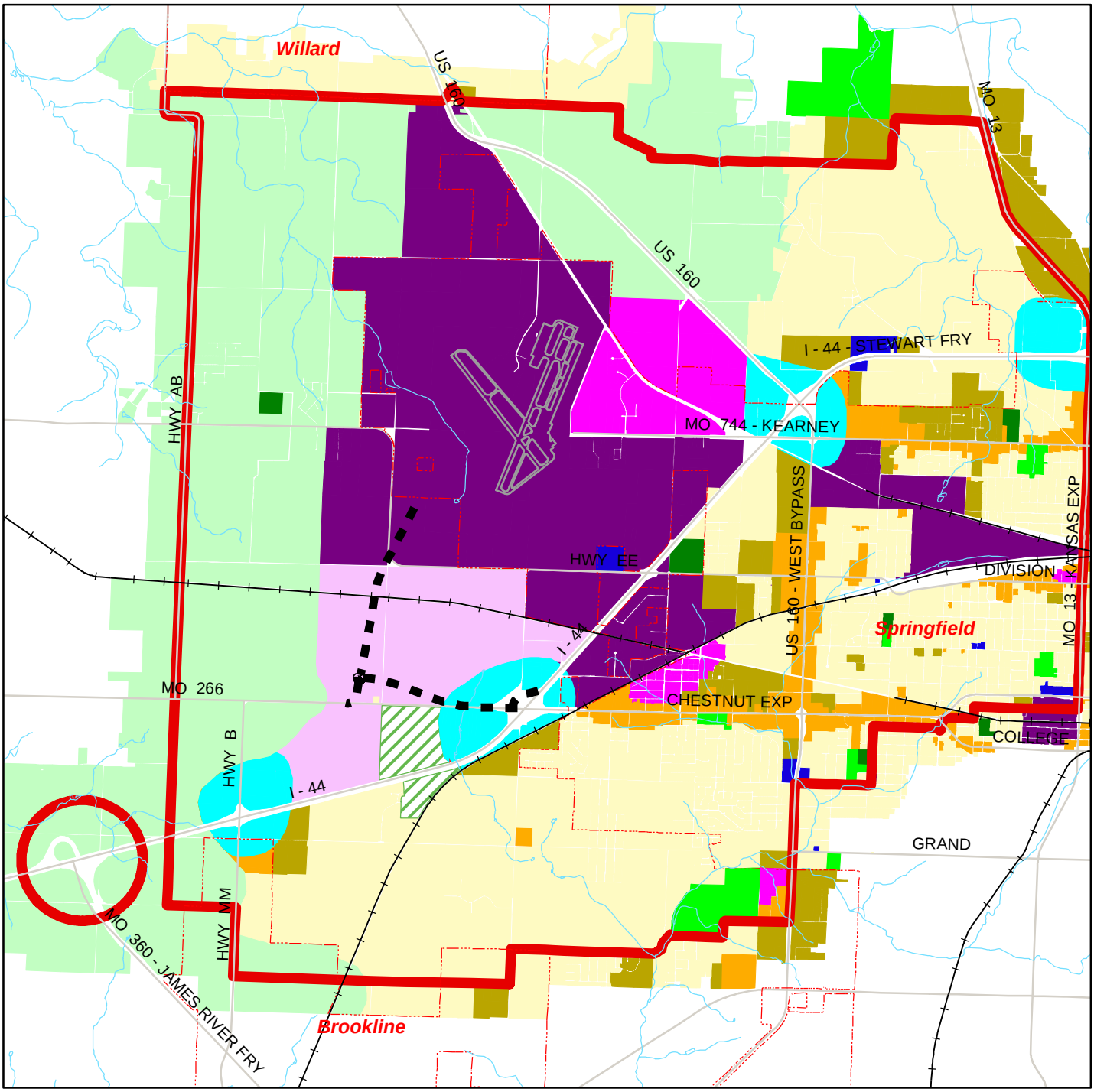
1. On the western edge of the study area the existing plan shows the area outside the Urban Service Area boundary as "Urban Reserve". At the request of Greene County, this area would be changed to "Rural Area". This classification would permit uses such as farming and large lot residential uses. These areas are outside the City of Springfield's Urban Service Area and are not indicated for sewer extension within the next 20 years.
2. At the following locations the Future Land Use Plan would show the classification "Activity Center":
    - I-44/Highway MM interchange
    - I-44/chestnut Expressway interchange
    - I-44/Kearney interchange
    - I-44 Kansas Expressway interchange

    This is only a mapping change, not a substantive change from the existing plan. Each of these areas is shown as an activity center in the existing *Springfield-Greene County Comprehensive Plan*.
3. In two locations along the railroad tracks in the southwest portion of the study area the existing plan shows "Medium or High Density Housing" which will be changed to "Low-Density Housing" to reflect the existing land use pattern in the area.
4. In the northeast quadrant of the intersection of Haseltine Road (FR 115) and Grand Street (FR 140) the existing plan shows "Low Density Housing". This would be changed to "Medium Intensity Retail, Office or Housing". This location could be used for a neighborhood commercial development. The remaining three quadrants of the intersection have very limited development potential because of sinkholes and floodways.
5. Where Haseltine Road (FR 115) meets the south boundary of the study area, the existing plan shows "Medium High Density Housing". This would be changed to "Low-Density Housing" to reflect the current development pattern in the area.
6. On the south boundary of the study area the existing plan shows a generalized area for a new "Park". Since the completion of the existing *Springfield-Greene County Comprehensive Plan* the exact location of the Rutledge-Wilson Community Park. The former location is to be shown as "Low-Density Housing" and the current park location is to be inserted.

7. Where West Bypass intersects with Bennett/FR 146 the existing plan shows "Medium/High Density Housing". That would be changes to show a combination of "Light Industrial, Office and Office-Warehouse" and "Medium Intensity Retail, Office or Housing". This allows for the continuance of the existing light industrial uses in the area.
8. Immediately below the activity center at the I-44/Chestnut interchange the existing plan shows a small area of "Low-Density Housing" which is to be shown as "Medium or High Density Housing". This would buffer existing residential areas from railroad activity.
9. Several areas around the Springfield/Branson Regional Airport are now being show as "General Industry, Transportation and Utilities". Each of these areas has been bought by the airport since the completion of the existing *Springfield-Greene County Comprehensive Plan* or are in the process of being purchased by the airport.
10. Some areas near the airport are now shown as "Rural Area". These areas are in the "airport zone" and under state law are only allowed to be developed for residences of 10 acres or larger.
11. An area south of the rail road tracks and north of Chestnut Expressway are now shown as "Light Industrial, Office and Office-Warehouse". This area was previously shown as "Medium/High Density Housing". However, they are in the airport zone and would not be allowed to have residences on less than 10 acre lots. The airport zone allows some non-residential uses (see airport section in this document).
12. Areas along portions of Chestnut Expressway and Kearney were previously shown as "Low Density Housing". These areas are now shown as "Medium Intensity Retail, Office or Housing". This better reflects existing development patterns, existing zoning patterns, the need to offer mixed uses along these corridors, and the inappropriateness of new single family housing on shallow lots along these major corridors.
13. North of I-44 and east of US 160 the existing *Springfield-Greene County Comprehensive Plan* shows "Medium Intensity Retail, Office, Housing" and "Medium/High Density Housing". This would be changed to "Low-Density Housing" as a reflection of existing development patterns and the provision of medium and high density housing in other portions of the study area.
14. Two Willard Schools will now be shown on the Future Land Use Plan. The existing plan did not show the location of these schools.
15. Land west of West Bypass between Kearney and the rail road tracks was shown in the *Springfield-Greene County Comprehensive Plan* as "General Industry, Transportation & Utilities". This has been changed to "Medium or High Density Housing" and "Medium Intensity Retail, Office or Housing". This reflects the future land uses shown on the east side of West Bypass and

attempts to preserve the West Bypass corridor in uses which will make it an attractive entrance to the community and will provide an opportunity to offer multi-family uses and additional community retail uses to this growing portion of the community. Land west of this land and east of I-44 is shown on the existing plan as "General Industry, Transportation & Utilities". Because the area already has a surplus of industrial zoning (much of which has not been developed during past decades) and because there is already single-family development moving into the area, the suggestion is to show the area as "Low Density Housing". This area boarders the Willard South Elementary School.

16. South of Kearney near land already shown as "General Industry, Transportation & Utilities" an area shown as "Low-Density Housing" and "Medium/High Density Housing" would now be shown as "General Industry, Transportation & Utilities". This change would reflect the existing development in the area.



Legend

- Proposed Airport Road
- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary

Land-Use Classifications

- General Industry Transportation & Utilities
- Low-Density Housing
- Medium / High Density Housing
- Park
- Medium Intensity Retail, Office, Housing
- High Intensity Retail, Office, Housing
- Business Park
- Light Industrial Warehousing, Office
- School
- Golf
- Community-Public
- Rural Area
- Activity Center

0 0.5 1 2 Miles

1:68,000

Figure 21

Recommended Future Land-Use Plan Amendments

Northwest Springfield Development Study

Major Road Improvements

New development in the Northwest Development Study area is increasing the number of vehicle trips and the need for new and improved roads in the study area. Development pressure in this portion of the Springfield metropolitan area is increasing. In addition, the origin and destination of trips within and through the study area are changing.

Several new or expanding land uses will impact roads in the area. (1) The City of Springfield, Greene County, and City Utilities are developing Partnership Industrial Center West, a large industrial park, in the area. Two business are currently located in the industrial park and additional business will locate there in the near future. (2) A new terminal at the Springfield-Branson Regional is expected to open within the next ten years. The location will be west of the existing terminal, which will have a significant impact on the routes passengers choose to take to reach the airport. (3) The National Guard will also expand its operation at the airport, adding approximately 200 jobs on-site. (4) New single family subdivisions south of Chestnut Expressway and north of Kearney Street, as well as new multi-family developments scattered around the study area will require new roads and will increase the volume on existing roads.

Traffic is expected to increase on many existing roads in the area. This increase in traffic volume will have to be accommodated. The Major Thoroughfare Plan shows proposed road in the following locations:

Major Thoroughfare Plan - Unfunded Projects

Classification	Road	From - To
Planned Primary Arterials	New Road	New Airport Terminal to Chestnut/266
	New Road	Hwy EE to Haseltine/115
	Grand (extension)	Orchard Crest to West By-Pass/160
Planned Secondary Arterials	New Melville Road	Hwy AB to Miller
	Melville/Fulbright (new)	Melville to Fulbright
	Golden/Melville (new)	Melville to Golden

	FR 103 (extension)	Hwy EE to EE/Division
	Westgate (new)	Chestnut Expressway to La Siesta
	Westgate (new)	Mt. Vernon to Grand
Planned Collectors	FR 106	Fr 125 to Melville Road
	Miller	Loren to Bennett
	Atlantic	Eldon to Golden

Major impacts on the study area will be the expansion of the Springfield-Branson Regional Airport, the location of the new airport terminal, and the new road needed to serve the new terminal. A new terminal is needed because of increased activity at the airport. Passenger growth is 3.5% a year. In 2002 there were approximately 660,000 arrivals and departures, similar to the base year, 1996. The average daily traffic based on number of passengers is expected to be 5,000 ADT in 2007 and 9,400 in 2032. A 1999 study showed 70% of trips originates south of Chestnut and east of West Bypass. For that reason, the first phase of the airport road will be the portion beginning at Chestnut Expressway and I-44, running west just north of Chestnut to a point just west of FR 107, then proceeding north-northeast to the site of the new terminal.

In 2003 the MPO amended the Major Thoroughfare Plan to provide for a new road to the new airport terminal. The amendment shows the following road segments as expressways: Highway 266 (Chestnut Expressway) from I-44 to Highway MM/B, Highway MM/B from just south of I-44 to Hwy 266, and Farm Road 107 from Highway 266 north to Highway EE (Division) the north, north-east to the new airport terminal. Under Federal Law, any airport access road must have a minimum of intersections and as few access points as possible. If FAA funds are used there can be no access to adjoining property.

The MPO has designated the new airport road as an expressway. Expressways are designed for partial access control and high priority for traffic flow with at-grade signalized intersections for major streets. Expressways are intended for high-volume moderate-to-high speed traffic movement across the metropolitan area with minimal access to adjacent land. According to the adopted Transportation Plan, an expressway may be designed as a highway with separation from adjacent land uses or as a street with controlled access to adjacent land uses. Traffic signals should be uniformly

spaced for optimum traffic flow. Driveway and street intersections should be designed for maximum of 10 mph speed decreases in through land for turning vehicle. Acceleration and deceleration lanes should be considered at access points where traffic speed and volume pose a significant safety concern. Traffic volume on expressways is expected to be 20,000 to 50,000 vehicles per day. Average speeds on expressways should be 40 to 55 mph. If designated as a bicycle route, a separate stripped lane should be provided.

According to the adopted Transportation Plan, the design standards for expressway are: 4 to 6 lanes, 180 feet plus 40 feet on each side for frontage roads, and pavement width of 36' per lane plus shoulders. Expressway intersections should contain 6 through lanes (plus two left turn and one right turn lanes in each direction), right-of-way of 180; plus the required sight triangles, and pavement width of 108; plus median. There is no parking allowed on expressways. They should be designed with a 40 foot grass median and median openings every 1/4 mile. Signalized intersection spacing should be every ½ mile with no driveways allowed onto the roadway. Sidewalks are required on frontage roads only.

A priority for the Metropolitan Planning Organization which will impact the Northwest Study Area, is the North/South Corridor Study. The goal of that study is to analyze traffic conditions and projections for north/south movement through the Springfield metropolitan area. The study is expected to recommend road projects which will address congestion on north/south roads in the area.

Airport Replacement Terminal and New Airport Road

The next major project for Springfield Branson Regional Airport will be a Midfield Terminal replacement building, which is in the design phase at this time. The new Midfield Terminal is being designed to meet the aviation needs of Southwest Missouri for the next fifty years and is anticipated to be completed in 2008. The increasing activity at the airport and the increase in trips generated can be seen in the following table prepared as part of the Environmental Assessment.

Airport Related Traffic Projections

Year	Enplanements	Annual Passenger (ADT)	Trips Generated (13% of Trips)
2002	328,987	4,420	570
2007	381,302	5,010	650
2012	452,876	5,800	750
2027	758,756	9,000	1,170
2032	901,164	9,430	1,230

Source: "Roadway Access to the T-4 Midfield Terminal Site at the Springfield-Branson Regional Airport", prepared by Crawford, Murphy & Tilly, Inc., 2003.

The new terminal is not simply an extension of the existing airport terminal, it is a separate facility located in a different portion of the 2,631 acres of property owned by the Springfield-Branson Regional Airport. The new terminal will be located southwest of the existing building and cannot be accessed by the same roads as the current terminal building. When the new terminal is complete, the travel patterns to and from the airport will be dramatically different. The location and design of a new airport road has been an important part of the new airport terminal project.

In June of 2004, an Environmental Assessment (EA) for activities relating to the construction of a replacement airport terminal, runway and taxiways, and a new airport access road was completed. The required environmental assessment made recommendations on the following issues:

17. Social impacts: acquisition of residences and farmland will be required to conform with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*
18. Water quality: acquire a *National Pollutant Discharge Elimination System* permit and other Missouri permits for construction activities disturbing one acre or more; utilize best management practices to protect water quality; acquire a Section 404 permit and Section 401 Water Quality Certification for construction
19. Historical, archaeological, and cultural resources: halt all construction activities and contact the State Historic Preservation Officer if cultural resources are encountered
20. Endangered and threatened species of flora and fauna: mitigate impacts to Rainer Branch through off-site or on-site stream enhancement or by purchasing stream banking credits; develop strategies for collection and treatment of spent

aircraft fluids; provide oil and grit separators; collect stormwater runoff; maintain existing stormwater release rates, provide secondary spill containment at fuel loading/unloading locations; limit surface movement of hazardous materials; revise the Spill Prevention and Countermeasure Program to protect the Ozark cavefish

21. Wetlands: obtain a Section 404 permit and Section 401 permit; coordinate wetland mitigation with the US Army Corps of Engineers and Missouri Department of Conservation; mitigate impacts to Rainer Branch through off-site or on-site stream enhancement
22. Construction: incorporate recommendations established in *Advisory Circular 150/5370-10A Standards for Specifying Construction of Airports, Item P-1561, Temporary Air and Water Pollution, Soil Erosion and Siltation Control* in project design specifications

The environmental assessment provided sufficient evidence and analysis to enable the Federal Aviation Administration to determine if additional study is needed.

In October 2000, the Springfield-Branson Airport completed an initial Access Road Corridor Study which considered traffic distribution, traffic forecasts, highway capacity, and safety factors. The local roads most affected by the new terminal location are State Route EE (Division Street), State Route 266 (Chestnut Expressway), State Route B, County Farm Road 124, and County Farm Road 107 (Kaylor Road). While the most important function of the airport road is to safely and efficiently move people and goods into and out of the airport, the selected corridor must also minimize disturbance of the natural environment and minimize the impact of the road on those who live and work in the immediate area. The road should focus on travel between the airport and the City of Springfield and travel from I-44 to the airport. A later phase of the airport road would connect James River Freeway and the airport.

The initial Access Road Corridor Study focused on four alternatives. In the end, the study recommended a route on Chestnut Expressway (between its intersection with I-44 and FR 107/Kaylor Road) and Farm Road 107 (from Chestnut Expressway north to the new terminal).

In August of 2003 the MPO Board of Directors approved an amendment to the Major Thoroughfare Plan to provide an expressway designation for Chestnut Expressway from I-44 west to B Highway, for B Highway from Chestnut Expressway south to I-44, and for Farm Road 107 from Chestnut Expressway north to Highway EE and then northeast to the new terminal.

The current recommendation is for a four-lane divided expressway beginning on Chestnut Expressway just west of the interchange with I-44. The new road would have controlled access: it would not provide access to adjoining properties. This would allow the new road to provide direct, uninterrupted access to and from the airport. The road would be constructed in phases, as development and traffic volumes necessitate. The first portion of the road is described below.

The recommended alignment begins at the Chestnut Expressway/I-44 interchange and angles west-northwest across undeveloped property to a point about 900 feet north of existing Chestnut Expressway and an equal distance west of Farm Road 107. The plan calls for a multi-lane roundabout at this point. From that point the road runs north and slightly east across undeveloped property to the point where Farm Road 107 intersects with Highway EE. From that point the road runs north-northeast to the site of the new terminal. (See Figure 22.) Existing rail lines in the area will be an issue with any alignment coming from the south. A railroad overpass will cross the Burlington Northern Railroad lines just south of Division/Hwy EE.

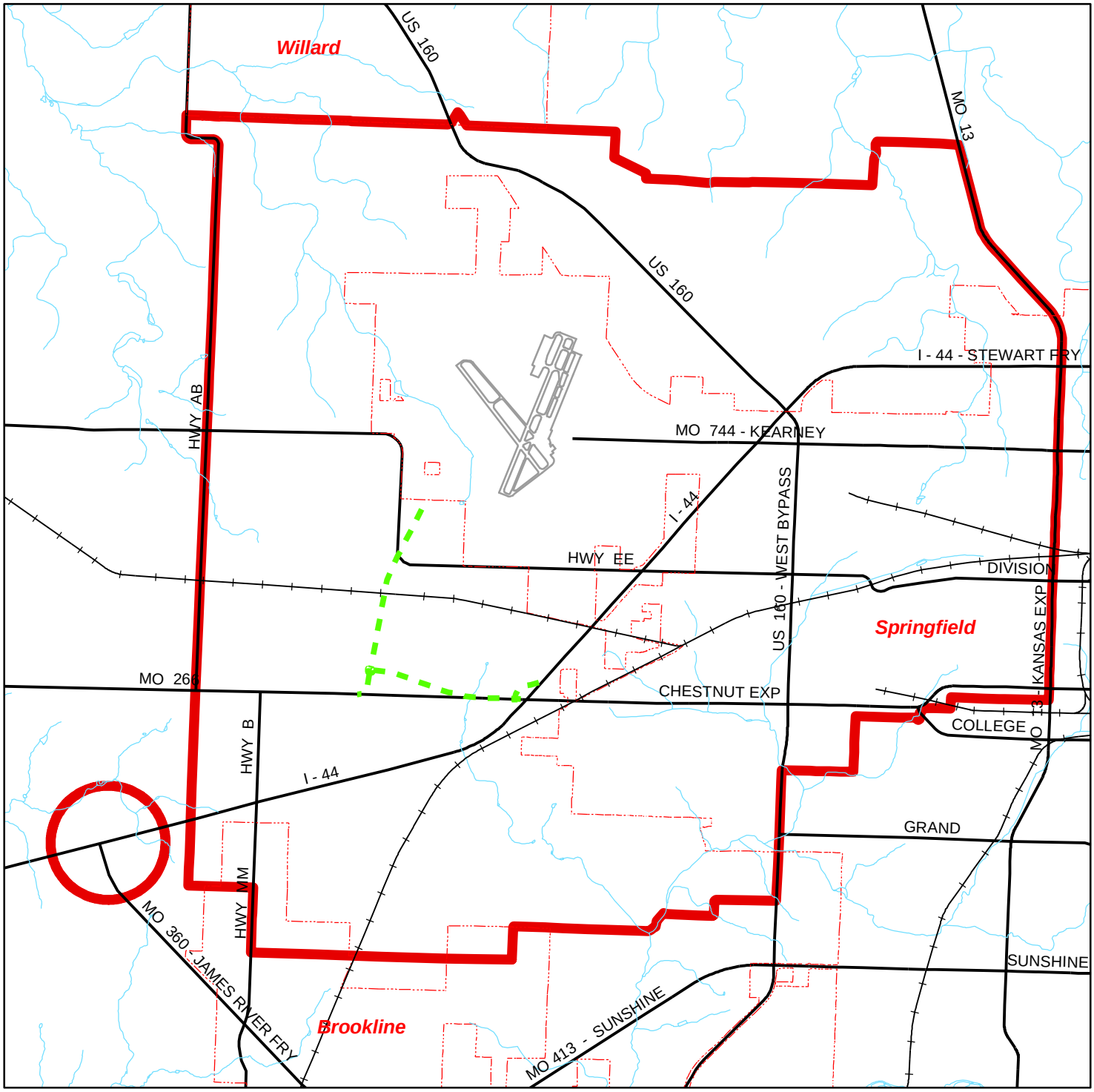
The proposed alignment crosses property currently in agricultural use. No homes or businesses would be directly impacted. However, construction of an expressway, which lacks direct access to adjoining properties, will landlocked certain portions of properties in the area. Access will have to be provided by a secondary road system.

Existing Chestnut Expressway/Hwy 266 will continue to be used for local traffic. The new airport road will have carefully planned connections with the existing roadway.

Studies recognize that over time, an additional connection to the south will be needed. That connection was accommodated in the MPO's August 2003 amendment to the Major Thoroughfare Plan and is included in the current airport road study. A connection between the airport road and James River Freeway and Sunshine to the South will eventually be needed. It is recognized that this southerly connection may not be needed until some time in the future.

A southern connection for the airport road will eventually be needed because of several factors. Branson and the Springfield metropolitan area are projected to continue growing at a fairly rapid rate. People who live in or visit these areas are served by the Springfield-Branson Regional Airport and will use the new airport road. In addition, much of the land surrounding the airport is currently undeveloped and will be developed during the life of the Comprehensive Plan (20 years), increasing demand on area roads. Also, a number of prime traffic generators are located south of Chestnut Expressway. These include: the rapidly developing portion of southern Greene County, rapid growth in northern Christian County, the need to connect the

airport to rapidly growing cities such as Ozark and Nixa, and connections to James River Freeway and Sunshine/Hwy13/Hwy60. Existing roads cannot absorb the projected increase in traffic volumes. When the proposed connections to the south and west are built, there will be a diamond interchange just north of existing Chestnut Expressway. The current Major Thoroughfare Plan and existing studies show a future connection of the airport road to I-44 at the existing I-44/HwyMM/HwyB interchange. That connection will provide rapid access to the airport from the south and will act as a catalyst to economic development in an expanded portion of the metropolitan area.



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Proposed New Roads

Figure 22

Proposed New Airport Road

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Northwest Springfield Development Study

Recommended Parks Improvements

The Parks Department has recently acquired property at the intersection of Bennett Street and Westgate Avenue for the Rutledge-Wilson Park, and may acquire additional adjacent property. The Rutledge-Wilson Park is a pilot project for sustainable development. The Parks Department will preserve the property as it was used in the past, as an dairy farm. There will be no athletic fields. Much of the park, which is in the floodplain, will be developed as meadow land using native grasses and wildflowers. In addition, there will also be a created wetland on the property. A living farm and a community garden will also be part of the development of the park. Citizens can obtain plots of land in the community garden to grow flowers or vegetables. Immediately to the west of the Rutledge-Wilson property, some property may be acquired to be used for parking and outdoor initiatives such as a day camp for children.

A greenway trail, for bicycles and pedestrians, will also be developed along Wilson's Creek. Additional easements will need to be obtained. Eventually, there will be a greenway connection from south of this study area north to Jordan Valley Park and to Smith Park.

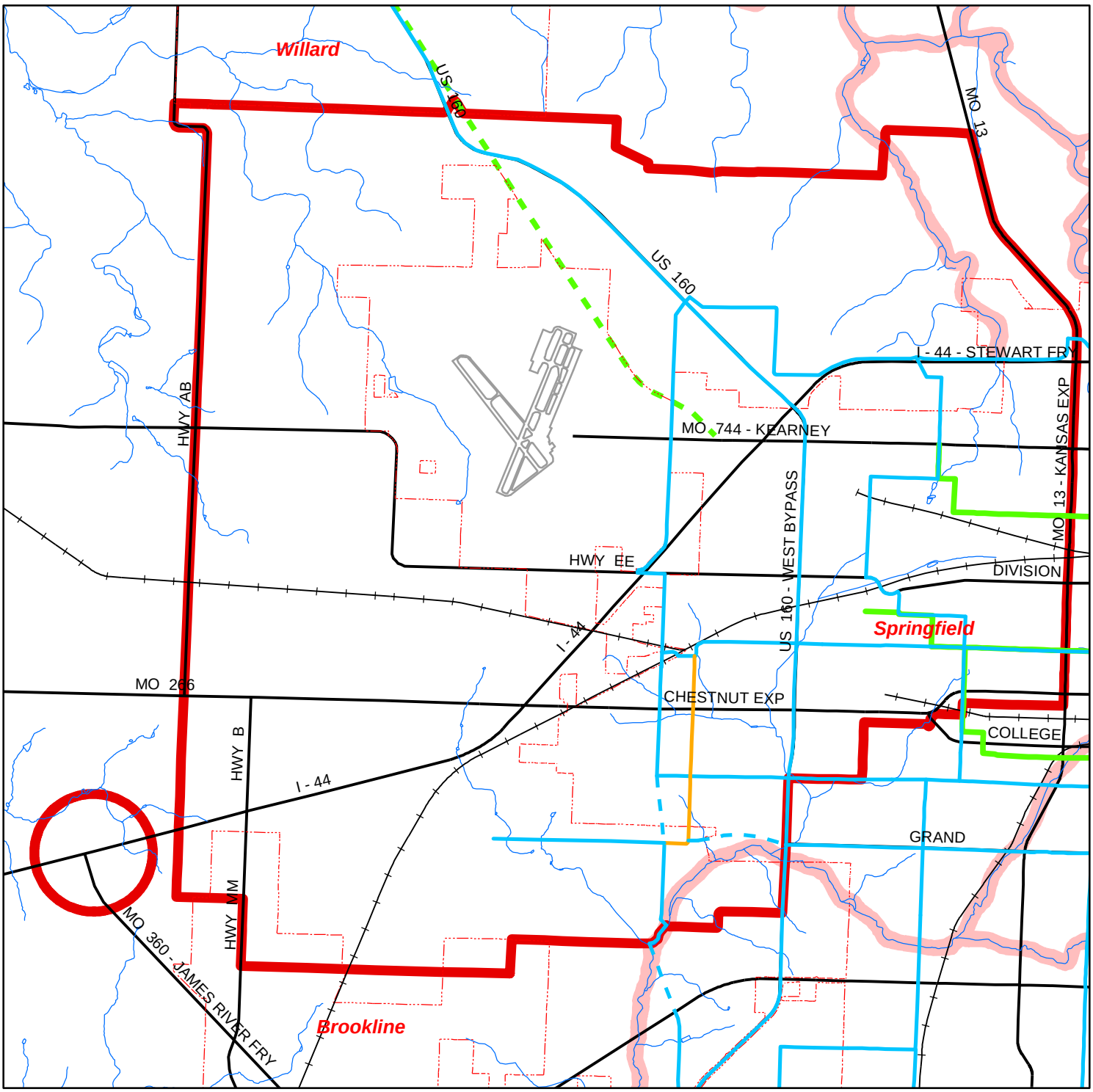
There is a planned trail connection which will begin on Melville Road near Grandview and run east to connect with the Spring Branch Greenway and then to the bike route that parallels Highway 13.

The Parks, Open Space, and Greenways Plan Element needs to be amended to reflect ongoing and planned activity in this part of the study area.

Bike Routes

All streets can be used by bicyclists. Bicycle routes are streets that the city Traffic Engineer has deemed suitable for bicycle traffic and that provide access to major destinations. Bicycle routes should provide continuity to travel across several neighborhoods. Within the study area, the City of Springfield has designated bicycle routes on: Kansas Expressway, Atlantic Street, Clifton Avenue, High Street, Fulbright Avenue, Calhoun Street, West Avenue, and Nichols Street. The MPO is currently preparing a new bicycle plan which will increase the number and improve the conditions of bicycle routes throughout the entire study area.

In the future, the community should provide marked bicycle routes within the study area on: Norton Road, Farm Road 123, Farm Road 106,Westgate Avenue, Farm Roads 140 and 148, West By-Pass, Golden, High, Calhoun, Mt. Vernon, Grand, (see Figure 23).



Legend

- Railroad
- Streams
- City Limits
- Major Roads
- Study Area Boundary
- Existing bike routes
- Frisco Highline Trail
- Ultimate Bike Routes (Draft)
- Future Bike Routes (Draft)
- Interim Bike Routes (Draft)
- Existing and Planned Greenway Trails

Northwest Springfield Development Study

Figure 23

Possible Bicycle Routes

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ACTION PLAN

Priority	Action
1	Northwest Development Study Action 1. Construct a new road to serve the new replacement terminal at the Springfield-Branson Regional Airport. This road should have limited access and should provide good access to residents of the Springfield metro area and to people traveling beyond the Springfield metro area.
2	Northwest Development Study Action 2. Provide an appropriate amount of neighborhood commercial uses. Increasing opportunities for neighborhood-scale shopping will increase the number of non-vehicle trips and shorten the length of the many vehicular trips. Neighborhood shopping areas conveniently provide goods and services to area residents. Neighborhood shopping facilities include: grocery stores, banks, doctor's and dentist's offices, drug stores, video stories, dry cleaners, Laundromats, gas stations, post offices, bookstores, small-scale clothing stores, hairdressers and barbers, hardware stores, and restaurants. Individual stores in neighborhood commercial areas should be small in scale. Big box retailers are not appropriate in neighborhood commercial areas.
3	Northwest Development Study Action 3. Explore the possibility of providing additional transit service to the Northwest Development Study area.
2	Northwest Development Study Action 4. Provide a continuous and well spaced network of bicycle routes in the Northwest Development Study area. The bicycle routes should offer connections to points of interest throughout the metro area. Wherever possible, residential development should provide connections to bicycle routes and greenways (which also provide biking facilities).
2	Northwest Development Study Action 5. (Idea partially referenced in Transp. - airport unnumbered objectives) Prepare for and prioritize the roads identified on the Major Thoroughfare Plan.

2	Northwest Development Study Action 6. Plan for future land uses that protect the airport from encroachment and that take advantage of the benefits of location near the airport. An area of Airport Influence should be developed surrounding the airport in order to ensure appropriate development with regard to land use and appearance to ensure development compatible with the Springfield-Branson Regional Airport.
3	Northwest Development Study Action 7. Rezone land in Activity Centers consistent with the recommendations of the Comprehensive Plan. This may entail development of an overlay zone.
2	Northwest Development Study Action 8. Amend local zoning ordinances to provide a Business Park Zoning Classification as suggested in the Comprehensive Plan. The Business Park Zone should be applied to the area south of the Springfield-Branson Regional Airport as shown on the future land use map in the existing Comprehensive Plan.
1	Northwest Development Study Action 9. Explore methods of protecting farmland on the rural-urban fringe.
3	Northwest Development Study Action 10. Implement the design guidelines found in the Comprehensive Plan and in the Southeast Development Study.
1	Northwest Development Study Action 11. Develop an airport/police/fire training facility to be utilized by personnel throughout the region.
3	Northwest Development Study Action 12. MoDOT, the City of Springfield, and Greene County will explore technologies which reduce the impact of highway noise. The first step would be to adopt a Highway Noise Abatement Policy. Mitigation techniques include, but are not limited to the following: construction of noise barriers (berms, fences, walls, landscaping, etc), selection of pavement types that reduce noise, attention to the location of new subdivisions and the siting of individual dwelling units. New development should mitigate existing road noise.
3	Northwest Development Study Action 13. Develop strategies to encourage air passengers and freight bound for Ft. Leonard Wood to fly in and out of the Springfield-Branson Regional Airport. Address related ground transportation issues.

1	Northwest Development Study Action 14. Complete the North/South Corridor Study that is one of the MPO's five priorities. The purpose of this study is to determine the best strategies for relieving pressure on north/south roadways in the Springfield area.
3	Northwest Development Study Action 15. Investigate and study possible realignment of Highway 13 between Farm Road 94 and I-44.
2	Northwest Development Study Action 16. Investigate and recommend new design guidelines for important gateways into the city, specifically West Division between Kansas Expressway and West Bypass.

APPENDICES

APPENDIX A

MAJOR THOROUGHFARE PLAN
SPRINGFIELD-GREENE COUNTY COMPREHENSIVE PLAN

Major Thoroughfare Plan

Classification	Road	From - To
Expressway	Kansas Expressway/13	I-44 to Chestnut Expressway
	West By-Pass/160	FR 94 to Bennett
	Chestnut Expressway	I-44 to Kansas Expressway/13
	New Road	New Airport Terminal to Chestnut/266

Classification	Road	From - To
Primary Arterial	Haseltine/115	North of Grant to Yale Road/148
	Hwy B	Chestnut/266 to Yale Road/148
	Hwy AB	Fr 94 to Chestnut/266
	Kearney/744	Airport Road to Kansas Expressway/13
	Division/EE	Hwy AB to Kansas Expressway/13
	Chestnut/266	Hwy AB to I-44
	Grand	Hwy B to Orchard Crest
Planned	New Road	Hwy EE to Haseltine/115
	Grand	Orchard Crest to West By-Pass/160

Classification	Road	From - To
Secondary Arterial	West	Division to Chestnut Expressway
	Fulbright	Melville to Kearney
	Golden	Kearney to Division
	Westgate	Melville Road to Chestnut Expressway
		Section North of Mt. Vernon
		Grand to Bennett
	Haseltine/115	FR 94 to Willard Road
		Section South of Mt. Vernon
	FR 103	FR 94 to Hwy EE/Division
	Fr 94/New Melville Rd	Miller to North of I-44
	Willard Road	Haseltine to Kearney
	Hwy EE/Division	Kaylor Road to Hwy AB
	Nichols	West By-Pass/160 to Kansas Exp.
	Mt. Vernon	Haseltine/115 to Golden
	Yale Road	Hwy MM to Haseltine/115
	Bennett	Haseltine/115 to Kansas/13
Planned	New Melville Road	Hwy AB to Miller
	Melville/Fulbright (new)	Melville to Fulbright
	Golden/Melville (new)	Melville to Golden
	FR 103	Hwy EE to EE/Division
	Westgate (new)	Chestnut Expressway to La Siesta
		Mt. Vernon to Grand

Classification	Road	From - To
Collector	FR 101/114	North of FR 106 to EE
	Kaylor Road	EE to Chestnut/266
	Lester Jones Avenue	Willard Road to Airport
	Haseltine/115	EE to Nichols
	Broadway/Maple/Nicholls	Chestnut/266 to West By-Pass/160
	Haseltine/115	Mt. Vernon to Chestnut/266
	Lullwood	Chestnut/266 to Mt. Vernon
	Miller	Chestnut/266 to Grand/140
	Orchard Crest	Grand/140 to Nichols
	Eldon	Atlantic to Nichols
	Boyts Road	Bond to FR 106
	FR 125	FR 106 to Pfeiffer
	Ritter Mill/137	White Road to Melville (planned)
	White Road	Spring Creek to Melville Road
	Northern Hill Road	FR 94 to Melville Road
	Spring Creek Road	Melville Road to FR 94
	FR 106	Westgate to Melville Road
	Park	FR 139 to Pfeiffer Road
	FR 139	Old Bolivar Road to Pfeiffer Road
	Park Avenue	Melville Road to High
	Fulbright	Melville Road to High
	Clifton	High to Atlantic
	Park	Division to Chestnut
	Fulbright	Division to Chestnut Expressway
	Chestnut Street	Fulbright to West
	Golden	Grand to Chestnut Expressway

	Bond Road	Westgate to Melville
	Ritter Road	FR 103 to Haseltine/115
Collector (continued)	Melville/Pfeiffer	Golden Extension to Kearney/744
	High	Golden to Kansas Expressway/13
	Atlantic	Clifton to Kansas Expressway/13
	FR 106	Hwy AB to FR 103
	Calhoun	Golden to Kansas Expressway/13
planned	FR 106	Fr 125 to Melville Road
	Miller	Loren to Bennett
	Atlantic	Eldon to Golden

APPENDIX B

SPRINGFIELD-GREENE COUNTY COMPREHENSIVE PLAN

ACTIONS RELATING TO NORTHWEST DEVELOPMENT STUDY

Growth Management - Land Use Plan Element

Action: Urban growth in Springfield and Greene County should be guided to locations either contiguous to or within presently urbanized areas. Development should be either urban, compact and efficient, or rural and very low density.

Action: Direct an increased amount of urban growth to the northeast, north, and west of the existing developed area, while recognizing that a majority of the future development would continue south, southwest, and southeast.

Action: Encourage in the Activity Centers higher density development, particularly employment, shopping and multi-family housing, served by transit, major roads and bicycle routes.

Action: Design new housing and businesses to create compact, diverse and pedestrian-friendly neighborhoods and districts.

Action: Use parks and linear public open space to improve quality of life, provide recreation and exercise opportunities, protect sensitive environmental resources, guide and enhance development, and give form to the community.

Action: Within the Urban Service Area, properties will be eligible to receive from Springfield and/or Greene County sanitary sewer service and an urban level of road improvements. Design all plans and programs to promote urban development within the Urban Service Area.

Action: The elements of an Activity Center will vary from one to another, but each should include, at a minimum, retail and office buildings and, ideally, multi-family housing, restaurants, and hotels, entertainment, and community facilities such as churches, public agencies, libraries, parks, etc.

Action: Activity Centers should epitomize many of the desirable design principles of a town or city, but accomplish them on a smaller scale. Therefore, these design principles should be observed when preparing or reviewing plans for an Activity Center**:** each should have a diversity of uses and users; each should have attractive and useable public space toward which the private development is oriented; each should accommodate the pedestrian, the bicyclist and the transit user; each should have a link, either direct or indirect, to the regional open space network; each should have a definable center and edge.
Action: The City of Springfield should consider annexing land within its Urban Service Area boundary.

Action: When sanitary sewer is requested for properties outside of Springfield, the City should require immediate annexation for those properties that are adjacent to its city limits if city services can easily be provided. Properties that are not adjacent to the city limits will require agreements for future annexation.

Action: Greene County should focus on achieving the transition of land around Springfield and other communities to compact, urban, municipal use while continuing to provide facilities and services to rural, unincorporated areas.

Action: Springfield and Greene County should follow these policies and those of the *Vision 20/20* Neighborhoods Plan.

Action: The City should prepare specific plans for a neighborhood or district in which a need for additional guidance beyond *Vision 20/20* is identified. When preparing plans or implementing public improvements, the neighborhood guidelines in the *Vision 20/20 Community Physical Image and Character Plan* and the *Neighborhoods Plan* should be observed. Greene County should consider initiating neighborhood planning consistent with the above guidelines.

Action: Support the development of mixed-use areas.

Action: Support urban design standards that emphasize a traditional urban character in those commercial areas that were designed with a pedestrian orientation.

Action: Limit auto-oriented commercial districts to major arterial streets where the surrounding development pattern will not support high levels of pedestrian use or to streets where auto-oriented land uses can be compatibly concentrated.

Action: Accommodate transit service and provide convenient, safe pedestrian access in auto-oriented commercial districts.

Action: Springfield and Greene County should work with private and other public sector partners to ensure that new development is attractive, functional and adds value to the physical environment.

Action: Undeveloped land should be planned and designed on the basis of creating identifiable neighborhoods.

Action: New neighborhoods should be linked visually and functionally to the established portions of Springfield and Greene County via street connections, bicycle facilities and, where possible, the greenway system.

Action: To the extent feasible, new neighborhoods should be functionally self-sufficient in terms of neighborhood commercial services and proximity to park or greenway facilities.

Action: Use a variety of development and redevelopment strategies such as the neighborhood unit concept, planned mixed-use developments, rural clustered housing or other innovative design concepts to build strong neighborhoods and a sense of community.

Action: Encourage sites to share functional site design elements (such as shared access, shared parking, coordinated landscaping, linked open space, detention and retention areas, etc.) when such elements support a more efficient and attractive development pattern.

Action: Require protection of natural features such as trees, slopes, streams, and lakes in new developments.

Action: Preserve open space in new developments by using open space subdivisions, planned unit developments, transfer of development rights between land owners, conservation easements, etc.

Action: Encourage developments with innovative site plans that combine various residential densities, and where appropriate, a mix of uses including neighborhood-serving nonresidential uses.

Action: Require all new residential subdivisions to provide public street access in each cardinal direction unless impractical because of natural, environmental or similar conditions. Ensure there is proper coordination between Springfield and Greene County when reviewing plats near the municipal boundary.

Action: Traffic calming techniques may be used to discourage cut-through traffic, especially commercial traffic, and/or to slow traffic speeds.

Action: Trees should be planted in the public right-of-way along every street, including commercially-oriented arterial roads and local residential streets. Landscaping along the streets should be a joint public and private effort and could take advantage of both the public right-of-way and the private setback space.

Action: Sidewalks, ideally set six feet behind the curb, should be required along both sides of every public street. The minimum width should be four to five feet so that two adults may walk comfortably side-by-side.

Action: Every residential neighborhood should accommodate bicycling and walking and be connected to the rest of the city via bicycle lanes or paths and sidewalks. Pedestrian and bicyclist networks should be comprehensively planned for each neighborhood to ensure coordination and continuity among individual subdivisions, commercial sites, parks, schools and greenways.

Action: Every local residential street should accommodate bicycling by virtue of its traffic-calming characteristics and connections with many other roads. On-street lanes and off-streets paths should link neighborhoods to one another and overcome obstacles such as major roads, streams and railroad tracks. The greenway system should be used in conjunction with on-street lanes (both new and retrofitted) to provide a network that is continuous and relatively safe.

Action: Every local residential street should also accommodate walking via sidewalks and connections with other roads. The sidewalk network should connect to the greenway trails and also link to commercial areas, parks and schools.

Action: Each neighborhood should contain a range of housing types, densities, and building configurations including single-family detached, townhouses, and apartments. Discourage large housing projects that consist of a single building type. Some portion of each type of housing should, ideally, be available for occupancy on either an ownership or lease basis. When combining housing types, it is preferable for the transition between types to occur at the rear rather than the front (i.e. across a courtyard or parking area rather than across the street).

Action: Maintain the current setback requirements that allow houses to be built relatively close to the street. Continue to require that infill housing in existing neighborhoods reflect the setbacks of existing houses.

Action: Support the building community as it provides housing to meet the varied needs and demands of area home buyers. Work cooperatively with the building community in meeting these varied needs and demands to ensure that regulations continue to encourage current housing design concepts as well as traditional and neo-traditional housing designs that emphasize streetscape and neighborhood interaction.

Action: Attached housing should be created as an attractive, compatible and acceptable alternative to conventional detached housing. Attached housing should emulate single-family housing in its basic architectural elements -- pitched roofs, articulated facades, visible entrances, porches or balconies, and a maximum height of three to four stories. Attached housing should use the architectural "vocabulary" of single-family housing. Attached housing should be built in small groupings so that it fits into the overall residential context rather than being sequestered into large project sites. If a multifamily building or attached housing is developed near single-family detached housing, ensure that the width of the building facade facing the street is similar to that of a single-family house. Attached units should be grouped in rows of no more than four or six units to avoid a monolithic appearance. Attached housing should be located in transitional spaces between commercial and single-family areas, at high-amenity locations along the Parkway and the Greenway Systems, and overlooking parks. Driveways and garages should be located to the rear of the lot or interior of the block. When garages cannot be located to the rear or on the interior of the block, they should be set back similar to the requirements for single-family housing. Porches and front steps should face the local street. Encourage unity as well as diversity by specifying a common design vocabulary throughout the buildings, a clear pathway system and shared outdoor space that unifies and integrates the site. Duplexes should be designed for visual compatibility with single-family housing, should be scattered among the neighborhood rather than concentrated, and may be used as a transitional building type near larger buildings and street intersections.

Action: Fined-grained diversity is a key to making attached housing compatible with single-family housing. Require variety in the style and density of attached housing within each neighborhood. Avoid the appearance of large multi-family "projects." Stipulate that no more than approximately 75 to 100 of the same basic type of attached housing may be built in one location.

Action: Ensure that buildings fit into the neighborhood through the use of compatible scale, roof pitch, building massing and materials. Design the front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, while trash/recycling storage, play equipment and outdoor storage should be located in the back. The main entry should face the street. Buildings should address the street with varied and articulated facades,

frequent entries and windows. Porches and balconies should be encouraged, and facades consisting of long blank walls or series of garage doors should be prohibited.

Action: Define all outdoor spaces, distinguishing between those reserved for residents and those open to the public. Provide visual indications of the boundaries between private space, public space and shared space. Enclose the shared outdoor space with buildings, low fences or hedges, and paths. Provide convenient access to shared outdoor areas, amenities such as play equipment, seating and tables to encourage their use, and vegetation for seasonal shade. Provide each housing unit with clearly defined private or semi-private outdoor space such as a yard, patio, porch or balcony, with direct access from inside the unit. To the extent possible, provide each unit with a front entry that faces the street and is visible and accessible from an adjacent public path. The "backs" of each unit should be reserved for private outdoor space and resident parking. Where individual entries are not possible, minimize the number of units that share a single entry. Use semi-private outdoor spaces such as porches and patios to increase the sense of privacy and security within the home. Provide opportunities for surveillance of shared outdoor areas such as streets, sidewalks and play areas from within the home. Provide a clear path system that connects each housing unit to destinations within the site and the surrounding neighborhood. Paths should be logical and predictable in their routes and should be linked to the public sidewalk system. Keep public paths at the edge of the site; distinguish between public paths and private outdoor space; and make paths visible from shared and private spaces. Control access by nonresidents via gateways, fences, plant materials or enclosed location. Locate outdoor spaces to allow for easy surveillance from inside homes.

Action: Springfield and Greene County should work to protect residential neighborhoods from adverse impacts of proposed development and inappropriate land use changes. New development should be compatible with existing development in terms of scale, materials, roof lines, setbacks, and open space. Landscaped transitions should be used between sharply differing types of land use. Excessive amounts of traffic, particularly commercial traffic, should not be allowed to pass through residential areas.

Action: Encourage the location of medium and high density residential uses along collector and arterial streets.

Action: Design commercial and office areas to function effectively through common design features, shared vehicular access points and circulation patterns, shared utility access and service entrances, and common pedestrian circulation. Encourage the effective use of location, design and landscaping of office uses to screen and buffer

neighborhoods from lights, signs, traffic noise and pollution, and other factors incompatible or conflicting with adjacent land uses.

Action: Outside the urbanized area, commercial uses serving small areas or providing convenience goods may be located near the intersection of a County collector road and a highway, or two county collector roads, with appropriate site design.

Action: Encourage the clustering of offices in common buildings, groups of buildings, or large sites rather than in strips along major roads. Encourage the effective use of location, design and landscaping of office uses to screen and buffer neighborhoods from lights, signs, traffic noise and pollution, and other factors incompatible or conflicting with adjacent land uses. Allow carefully planned, low volume office developments to be used as transitions and buffers between commercial and residential areas.

Action: Industrial areas should be directly accessible to one or more of the following regional transportation facilities**:** airports, railroads, arterial roads, freeways, expressways or the Interstate Highway System. Industrial areas should be served by major roads which have adequate capacity and are built to carry heavy freight traffic. Sites should be designed to accommodate public transit and to encourage shared commutes.

Action: Industrial areas are generally incompatible with residential uses and should not be located adjacent to residential areas. A transition area or a step-down land use should be provided between industrial and residential uses. Industrial and related uses that have excessive visual clutter, noise, glare and/or odors should provide adequate screening and buffering.

Community Physical Image Plan Element

Action: Implement the multi-jurisdictional plan for greenways along the major creeks in the Springfield vicinity, including the public acquisition of land. Acquire land for parks at locations along the creeks that include prime examples of the regional environment and/or particularly beautiful views of the creek valleys.

Action: Seek opportunities to display bedrock, such as when cutting grades for road construction, or building features such as retaining walls, ground signs, entry

monuments or park buildings. Exposing bedrock emphasizes one of the characteristics of Springfield -- its position atop the Ozarks plateau -- that makes it distinctive and special. Preserve open space around sinkholes and springs for the protection of water supplies as well as to increase public awareness of these important elements of Springfield's natural environment.

Action: Protect significant wooded areas through a regulatory program that restricts the number and quality of trees that may be removed for land development and which requires replacement of young trees. This program should be based on a professional assessment of the forest around Springfield and other cities in Greene County and should be assessed in conjunction with the park and greenway acquisition programs so that the regulatory and acquisition programs may complement one another.

Action: Build community entry and identification monuments at locations visible to people traveling to or through the Springfield vicinity. Recommended locations include:

- Along US 65 at Chestnut Expressway, Sunshine Street, Battlefield Road, I-44 and US 60
- Along I-44 at US 65 and Mulroy Road
- Kearney Street coming from the airport
- Campbell Street (US 160) coming out of the James River valley. Figure 19-1, Community Physical Image Improvements, illustrates recommended locations for community entrance monuments.

Action: Work to retain a visual distinction between urban areas and rural areas throughout Greene County, but especially around Springfield. The *Vision 20/20* Land Use and Growth Management Element recommends compact urban development within the Urban Service Area and very low density, rural style development outside the Urban Service Area. Means of retaining a strong visual difference include the major elements of the *Vision 20/20* land use plan: very low housing densities in the rural areas and clustered rural housing.

Action: Design and construct city gateways and entry monuments at key Springfield access points to welcome visitors, demarcate city boundaries and establish a theme or image for the City. Create methods of financial assistance or tax incentives for public or private landowners that are interested in improving entryways. Coordinate with state and federal highway departments to implement the City's entryway beautification plans (continue the effort begun with work on the James River Freeway).

Action: Develop and distribute design guidelines for the City Gateways for private and public use.

Action: Amend the regulation of off-premise signs to reduce the zoning districts in which they may be located, introduce minimum spacing requirements, prohibit roof-op billboards, and generally decrease their allowable number.

Action: Utility lines in new residential subdivisions should be either underground outside (on the house side of) the sidewalk or between poles along the rear lot line.

Action: Continue to uniformly light all major roadway corridors throughout the length of each corridor. Continue to require that each development and roadway have uniform lighting levels.

Action: Evaluate and identify opportunity areas along the roadway corridors where trees (especially) or shrubs could be introduced. Coordinate the efforts among the Missouri Department of Transportation, Greene County Highway Department and the Springfield Public Works Department to accomplish roadway landscaping.

Action: Improve the edges of the Kansas and Chestnut Expressways to parkway standards.

Action: Include extra landscaping and berming along residential areas when installing public landscaping along major roads or when building new arterial roads.

Action: Require that new residential developments include plantings and berming along major roadways to screen housing from the effects of traffic.

Action: Springfield and Greene County should allocate funding for regular maintenance of landscaping in public rights-of-way so that these amenities remain attractive. In certain highly visible locations, an irrigation system should be installed to help ensure healthy plantings. (This is especially beneficial in commercial areas where there may be more heat and less groundwater.)

Action: Inventory the general pattern of trees along public streets in Springfield's residential neighborhoods (such as portions of Nichols, Grant, National or Republic) and prepare a public residential street landscaping plan for urban development in Springfield and Greene County. That plan should include guidelines for species, spacing, placement, responsibilities and maintenance. As opportunities arise, particularly revitalization projects or road widenings, improve the landscaping along

residential streets. The City may also add trees independent of other roadway improvements.

Action: Springfield and Greene County should require that trees be planted between the curb and the sidewalk of every street in each new residential subdivision. The placement of underground utilities and the width of the public street right-of-way should be adjusted to accommodate these trees. Trees should be selected and spaced according to the citywide landscaping plan mentioned above.

Action: Springfield will add many more trees to the edges of commercially oriented roads such as Glenstone, Campbell and Kearney.

Action: During site plan review, limit the number of access points allowed along commercial road corridors, and consolidate existing access points wherever possible. Identify prototypical options for removing or consolidating access points. Require that access points be limited in all new commercial developments within commercial roadway corridors.

Action: Identify roadway corridors for special theme treatments in conjunction with the various business communities and organizations. Prepare a special theme treatment design for each along with an implementation program.

Action: Springfield and Greene County should comprehensively revise their sign ordinances in light of community visual quality goals stated in this plan with the intent of reducing the allowable sign area, height, number and visual clutter. The two ordinances should also be compatible with one another when completed.

Action: Springfield and Greene County should name and map each current or future neighborhood or district as a basis of design improvements and pride. The City and County should create for each major district a unique logotype or symbol. Involve institutional and commercial owners in establishing district names and symbols. These recommendations are most appropriate for neighborhoods or districts in which the City is making investing in redevelopment and infrastructure improvements in conjunction with private property investments (e.g., Greater Downtown or Commercial Street). Springfield and Greene County should design and install neighborhood or district identification signs or entry monuments at major entries. This program should be undertaken with a few neighborhoods at a time.

Action: Clearly demarcate the edge of each neighborhood or district and, as opportunities arise, correct inconsistent edge conditions. As districts grow and expand,

adjust district edges in a logical and consistent manner to maintain a clearly defined edge.

Action: Incorporate special landscaped entry or gateway features at all key access points to each major neighborhood or district, particularly in areas of publicly-assisted revitalization.

Action: Evaluate all existing neighborhoods or districts for the existence of, or the potential to create, focal areas or features, and require that all emerging districts work toward creating these elements. Use focal features as an important element in any publicly supported revitalization plan. Suggest the creation of such features during site plan reviews to improve property values, and negotiate development bonuses or variances in exchange.

Action: Design all residential developments to include multiple access and egress points (where practical) and provide several travel routes through the neighborhood. Require all new residential subdivisions to provide public street movement to each cardinal direction unless impractical because of existing development constraints or environmental conditions.

Action: Springfield and Greene County should amend their subdivision regulations to require that new local/minor residential streets be designed with sidewalks and street trees similar to the following sketch. The City and the County should create compatible requirements so that the community can grow with a consistent appearance.

Action: Provide sidewalks with a minimum width of 5 feet along both sides of residential streets. Separate sidewalks from the street by a minimum 6-foot wide strip of grass and trees. Where residential lots are commonly wider than 100 feet or other circumstances dictate it, a sidewalk need be provided on only one side of the street. Gaps in the sidewalk system should be filled.

Action: In neighborhoods that have a general pattern of public street trees but also have gaps in that pattern, Springfield should undertake a long-term program of adding trees. That planting should be conducted according to a plan that specifies the species for each street.

Action: Springfield and Greene County should require all new residential, commercial and industrial developments to include street trees according to a City and County street tree planting plan.

Action: Encourage in all residential developments an abundant amount and variety of landscaping treatments -- especially in the front yards of properties. Work with the developers to identify opportunities for introducing landscaping variety and character into their projects.

Action: Preserve significant stands of trees and other major natural features during land development to the maximum extent possible.

Action: Require sufficient landscaping in each district to break up large expanses of building massing and pavement areas and to leave the impression that about 20 percent of the area is green. Screen all outdoor service and storage areas from key primary views. Continue to administer the landscaping and screening requirements of the City and County zoning ordinances.

Transportation Plan Element

Action: The Design Standards for Streets and Highways (Table 20-2) and the Generalized Characteristics of Streets by Classification (Table 20-3) should be adopted by the City of Springfield, Greene County, the Missouri Department of Transportation, and other jurisdictions in the planning area as part of their policies concerning the design standards of all major streets.

Action: Stripe bicycle lanes on designated bicycle routes whenever space allows.

Action: The City of Springfield and Greene County should consider modifying their roadway marking standards to provide additional width on the outside travel lanes on roadways that are included on the Springfield-Greene County Bikeway Map.

Action: Greene County should begin a long-term process of adding paved shoulders to its Farm Roads.

Action: Signs should continue to be used to designate bicycle routes in the Springfield-Greene County area. City, county and state traffic departments should adopt signage consistent with MoDOT and work together on creating continuous routes throughout the area based on this plan.

Action: Provide wide curb lanes of 14-feet or more for commuter bicycle travel in Springfield-Greene County, especially along those facilities that are designated as part of the bicycle route system.

Action: Only bicycle compatible drainage grates should be used along a bicycle path or bicycle route. If existing grates along these routes are incompatible, provisions should be made to make the grates temporarily safe until such time as they can be replaced.

Action: Manhole covers along bicycle facilities should be installed at the surface level. Any manhole covers along bicycle facilities that have a raised surface should be corrected or the bicyclist should be provided with warning information prior to the impediment.

Action: Roadway pavement patching projects along bicycle facilities should be smoothed to the surface level to avoid unsafe conditions.

Action: Bridges can be designed for both bicycle traffic and pedestrian traffic. Exceptional attention must be taken to ensure bicycle safe expansion joints are utilized. In some cases, it might be necessary to retrofit a bicycle path onto a remaining highway bridge. There are currently several alternatives worth serious consideration in contention of what the geometric of the bridge will yield, such as:

- Extend the bicycle path across the bridge on one side.
- Provide either bicycle lanes or wide curb lanes over the bridge.
- Use remaining sidewalks as one-way or two-way facilities.

Action: If a bridge is on a route determined to be essential for bicycle and pedestrian transportation and cannot be improved to a reasonable standard, convenient alternative access should be provided, such as:

- Routing bicyclists and/or pedestrians to an alternative, accessible and direct route;
- Developing a second, bicycle/ pedestrian bridge; or
- Using an existing route as an alternative or developing a short-cut transportation route such as a bicycle/pedestrian underpass.

Action: Work with existing businesses to address the importance of providing pedestrian connections through their parking areas and to adjacent attractions.

Action: Jurisdictions should encourage proprietors of new major businesses to provide pedestrian connections from the front door, through the parking areas, to connect to adjacent activity areas.

Action: Consider using traffic calming methods in appropriate locations. Developers should be encouraged to implement traffic calming methods, where appropriate.

Action: The City should examine zoning patterns for vacant land around Downtown Airport (the primary private/public Springfield community airport) and should encourage only compatible uses within the approach paths of the runways.

Action: It is critical that the City of Springfield and Greene County follow existing practices for protecting noise levels, the environmental quality, and the land use compatibility of the Springfield-Branson Regional Airport area. The city and the county should continue the existing zoning patterns in effect around Springfield Regional Airport. No rezoning of agricultural land to noise-sensitive uses should be allowed within the noise contours (65-75 Ldn) unless a detailed noise analysis is made and noise control features are included in the building design.

Action: Develop measures (e.g., noise walls, berms, increased setbacks, etc.) to mitigate adverse noise impacts of major transportation facilities on adjacent less intense land uses.

Action: Locate major activity centers requiring extensive goods and service movements near major highway interchanges and along major arterial streets, so that truck traffic will not impact residential neighborhoods.

Action: Use traffic-calming devices and other means available to deal with problems in existing neighborhoods.

Action: Provide a multimodal or inter-modal terminal at the airport and coordinate development of land and transportation facilities in the vicinity of the airport.

Action: Identify street crossings of railroad lines and recommend maintaining safety and accessibility as rail and motor traffic increase.

Action: Identify appropriate locations and obtain funding for multimodal freight facilities at the airport.

Action: Provide for industrial areas that are accessible to one or more of the following regional transportation facilities: airports, railroads, and the arterial roads or the interstate highway system.

Action: The City of Springfield and Greene County should protect the best aspects of established areas from negative effects such as excessive auto traffic or incompatible, unbuffered land uses. Conversely, blighted, deteriorating or obsolete activities should be phased out and those sites improved according to an established plan. Guided by the planning and community physical image principles of Vision 20/20, private and public investments should aim to enhance or strengthen a sense of neighborhood in all established areas.

When working toward housing variety within an established neighborhood, recognize and maintain the original residential character of the neighborhood. The City and County should review zoning patterns to assure that current zoning regulations are consistent with the predominant existing residential use in those areas where preservation of that housing is intended. Zoning should protect existing neighborhoods by buffering businesses from residential uses and by buffering single-family and higher density housing. Also, new housing should "fit" into the neighborhood in terms of density, housing value and style. Where possible, the original use or intent of each structure should be retained.

Action: Undeveloped land should be planned and designed on the basis of creating identifiable neighborhoods. A “neighborhood” may be defined by major geographic boundaries such as arterial roads, major streams, railroads or major non-residential areas and containing 3,000 to 6,000 residents. For the purpose of this plan, a typical neighborhood is defined as being approximately one square mile in size. It should be noted that Springfield has many neighborhood organizations that have self-defined their boundaries. Many of these neighborhoods are smaller than one square mile. Each neighborhood should be supported by public open space, should contain a mixture of housing types (single-family detached and multi- family attached) and should be contained within a convenient walking radius of some retail stores and personal services.

- Provide neighborhoods with the opportunity for necessary services and facilities (e.g., library services, parks or open space, grocery stores, pharmacies, etc.) through careful planning and mixed use zoning.
- Identify appropriate urban design elements which bring people together and build pride of place (for example, public space for meeting and talking, sidewalks in residential areas with good connections to shopping and recreational areas, ample green/open space in newly developed areas).
- Provide variety within the larger community by encouraging developments with special features and a sense of uniqueness. These may include public

improvements such as entrance monuments, roundabouts, street islands, boulevard trees and nicely-designed neighborhood parks, well preserved and actively used historic buildings, neighborhood-sized commercial nodes, or distinctive housing styles.

Action: Redevelopment and infill are keys to strengthening older areas and should follow the community design principles established in the Land Use and Growth Management, Historic Preservation, and the Community Physical Image Plan elements of Vision 20/20. The City and County should encourage continuous neighborhood reinvestment by providing attractive public facilities and services such as streets and police protection, by removing blighting influences such as incompatible land development, through spot-clearance of severely deteriorated structures, and by providing housing rehabilitation loans and grants through local and non-local funding sources. Historic or architecturally significant buildings and areas should be preserved because they express the city's heritage and add beauty and charm to their surroundings.

Action: Each neighborhood should contain a range of housing types including single-family detached, townhouses, and apartments. Some portion of each type of housing should, ideally, be available for occupancy on either an ownership or lease basis.

Action: New neighborhoods should be linked visually and functionally to the established portions of Springfield via street connections, bicycle facilities and, where possible, the greenway system.

Action: New neighborhoods should be functionally self-sufficient in terms of neighborhood-scale commercial services and proximity to parks, open space, or greenways.

Action: Support the development of mixed-use areas.

- Identify and designate locations as mixed-use that have higher density residential neighborhoods close by, a mix of mutually supportive commercial and entertainment activities, pedestrian-friendly gathering places, transit service, and flexible parking requirements. Several of the proposed Activity Centers, particularly Greater Downtown, can and should flourish as mixed-use areas. Create plans and strategies that promote success for mixed-use areas.
- Focus less on separating different land uses and more on the size, design or position of buildings and their relationship to the street, to users and to neighbors. Base plans and zoning on performance standards that measure how various types of buildings interact. Allow a wide variety of activities within these buildings in mixed-use areas.

- Develop site plan design standards that attract pedestrians by bringing storefronts and windows to the sidewalk, orienting building faces to the street, and limiting buildings to three or four stories.
- Accommodate the automobile but locate parking so that it does not interfere with pedestrian movement and enjoyment. Rear or side parking is definitely preferred. Encourage patrons to travel to mixed-use areas by alternative means. Encourage parking and landscaping strategies that buffer adjacent areas and mitigate negative spillover effects of non-residential parking on residential streets. Encourage shared parking. Landscape all parking areas, particularly any near the street. Build low walls of masonry or hedges that extend the visual effect of the building line (but maintain the "sight triangle" at street intersections).
- Require storefront transparency (windows facing the street) to ensure both natural surveillance and an inviting pedestrian experience.

Action: Incorporate special, landscaped entry or gateway features at all key access points to each major neighborhood or district, particularly in areas of publicly-assisted revitalization.

Action: Trees should be planted in the public right-of-way along every street, including commercially-oriented arterial roads and local residential streets. Landscaping along the streets should be a joint public and private effort and could take advantage of both the public right-of- way and the private setback space.

Action: Encourage developers to incorporate landscaping in a variety of ways, including:

- Overstory trees in addition to the boulevard street trees
- Foundation planting around buildings
- Special landscaping along walks and steps
- Small entry features for each residential unit or complex
- Hedges or landscaped borders to define the boundaries of each property.

Action: Develop a street lighting program for all residential neighborhoods. Establish lighting standards (application, spacing, configuration) for various residential street categories. Residential area developers should be given a choice of several types of street lights that can be maintained by City Utilities so that developers who wish to install a more decorative fixture and pole may do so. Identify the responsible agency and the funding source(s) for installing and maintaining the pedestrian-scaled street lights.

Action: Support urban design standards that emphasize a traditional urban character in those commercial areas that were designed with a pedestrian orientation.

- Identify commercial districts in the city that reflect traditional urban form and develop appropriate standards and preservation objectives for these areas. The Center City Plan Element is a major step in this direction. Plans and zoning regulations for the Walnut Street and Commercial Street Historic Districts also contribute to the preservation of these urban streets.
- Enhance unique characteristics of the traditional commercial districts by encouraging appropriate building forms and designs, historic preservation objectives, appropriate site plans, and by maintaining high quality public spaces and infrastructure.
- Enhance pedestrian or transit-oriented commercial districts with street furniture, tree planting, bicycle racks, and improved transit amenities.
- Orient new buildings to the street to foster safe and successful commercial districts, particularly in Center City.
- Limit the construction and visual impact of billboards in neighborhood commercial districts.

Action: Limit auto-oriented commercial districts to major arterial streets where the surrounding development pattern will not support high levels of pedestrian use or to streets where auto-oriented land uses can be compatibly concentrated.

Action: Use a variety of development and redevelopment strategies such as the neighborhood unit concept, planned mixed use developments, open space subdivisions, neo-traditional areas, or other innovative design concepts to build strong neighborhoods and a sense of community.

Action: Encourage sites to share functional site design elements (such as shared access, shared parking, coordinated landscaping, linked open space, detention and retention areas, etc.) when such elements support a more efficient and attractive development pattern.

Action: Preserve open space in new developments by using cluster subdivisions, planned unit developments, transfer of development rights between land owners, conservation easements, etc.

Action: Encourage developments with innovative site plans that combine various residential densities, and where appropriate, a mix of uses including neighborhood-serving nonresidential uses.

- Establish guidelines for mixed-use development.

- Encourage carefully designed mixed use projects that combine office, retail, and/or residential land uses within the same development.
- Ensure appropriate buffering between developments to reduce the impact of conflicting uses.
- Encourage creative subdivision design with strong controls for the preservation of open space.

Action: Require all new residential subdivisions to provide public street movement to each cardinal direction unless impractical because of natural, environmental or similar conditions. Ensure there is proper coordination between Springfield and Greene County when reviewing plats near the municipal boundary.

Action: Collector streets should be planned for each future neighborhood at the "sketch plan" phase and should link across neighborhoods to arterial roads and other collector roads. City and County planners should work with each land developer to plan the general alignment of collector streets beyond the limits of smaller subdivisions to ensure area-wide continuity.

Action: Local streets should be designed to create a totally interconnected system to the extent possible, and local streets should be built relatively narrow so as to accommodate slow- peed movement to and from land parcels.

Action: Traffic calming techniques may be used to discourage cut-through traffic, especially commercial traffic, and/or to slow traffic speeds. A list and short description of these techniques is presented in the *Vision 20/20* Transportation Element. The most practical of these is the narrow street width, as shown above, but others may be used based on the review and advice of a traffic engineer when conditions warrant. It should always be kept in mind, however, that when traffic is constrained along one route it tends to flow to another nearby route, possibly creating unintended effects. These techniques are particularly useful in older neighborhoods that have higher densities and a greater mixture of housing types and land uses. However, the City's or County's professional traffic engineer should always be consulted before deciding on any street design modifications regarding the use of traffic calming techniques, since they may result in unintended and unexpected negative consequences. Alterations should be undertaken on a comprehensive, neighborhood-wide basis.

Action: As each new subdivision is developed, it should include plans for continuing the open space network by assuring sufficient and appropriate open space for connection to adjacent subdivisions. The open space could remain under private ownership and be managed by a homeowners organization or a local land trust.

Selected portions of the network could be transferred to public ownership for neighborhood use and connection to the greenway.

Action: Every residential neighborhood should accommodate bicycling and walking and be connected to the rest of the city via bicycle lanes or paths and sidewalks. Pedestrian and bicyclist networks should be comprehensively planned for each neighborhood to ensure coordination and continuity among individual subdivisions, commercial sites, parks, schools and greenways. Narrow easements or public rights-of-way solely for pedestrians and bicyclists should be used to make critical connections when a motorized passage is not desirable.

Action: Every local residential street should accommodate bicycling by virtue of its traffic-calming characteristics and connections with many other roads. On-street lanes and off-street paths should link neighborhoods to one another and overcome obstacles such as major roads, streams and railroad tracks. The greenway system should be used in conjunction with on-street lanes (both new and retro-fitted) to provide a city-wide network that is continuous and relatively safe.

Action: Every local residential street should also accommodate walking via sidewalks and connections with many other roads. Sidewalks should be required along both sides of every local, collector and arterial Street. The minimum width should be five feet so that two adults may walk comfortably side-by- side. Sidewalks should be separated from the street by a minimum 6-foot wide strip of grass and trees. Where residential densities are extremely low or other circumstances dictate it, a sidewalk need be provided on only one side of the street. The sidewalk network should connect to the greenway pedestrian trails and also link to commercial areas, parks and schools. Missing segments of the sidewalk system should be completed.

Action: Maintain the current minimum setback requirements that allow houses to be built relatively close to the street. Continue to require that infill housing in existing neighborhoods consider building setbacks of existing houses.

Action: Support the building community as it provides housing to meet the varied needs and demands of area home buyers. Work cooperatively with the building community in meeting these varied needs and demands and ensure that regulations continue to encourage current housing design concepts as well as traditional and neo-traditional housing designs that emphasize streetscape and neighborhood interaction.

Action: Attached housing should be created as an attractive, essential and acceptable alternative to conventional detached housing.

- Encourage the use of single-family design "vocabulary" in multifamily and attached buildings. This means that multi-family housing should have elements commonly found in single-family housing such as pitched roofs, articulated facades, entrances visible from the public street, porches or balconies, and a maximum height of three to four stories. When garages cannot be located to the rear or on the interior of the block, they should be set back similar to the requirements for single-family housing.
- Attached housing should be built in groupings so that it fits into the overall residential context rather than being sequestered into large project sites.
- Attractive and acceptable locations for attached housing should be "master planned" into each major neighborhood (approximately one mile square) by continuously updating neighborhood sketch plans and referring to them when reviewing subdivision proposals. The Land Use Plan Map and the Zoning Map should be refined and adjusted to reflect current thinking about the inclusive design of each neighborhood.
- Attached housing should be located at high-amenity locations along the Parkways and the Greenways, and overlooking parks.
- Duplexes should be designed for visual compatibility with single-family housing, should be scattered among the neighborhood rather than concentrated, and may be used as a transitional building type near larger buildings and street intersections.

Action: Encourage a range of densities, housing types and building configurations; discourage large housing projects that consist of a single building type.

- If a multifamily building or attached housing is developed near single-family detached housing, ensure that the width of the building facade facing the street is similar to that of a single-family house. Attached units should be grouped in rows of no more than four or six units to avoid a monolithic appearance.
- When combining housing types, it is preferable for the transition between types to occur at the rear rather than the front (i.e. across a courtyard or parking area rather than across the street).

Action: Site plans for attached housing should provide an attractive street frontage and some useable outdoor spaces for the residents, whether it be ground-level or a balcony.

- Encourage front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, with trash/recycling storage, play equipment and outdoor storage located in the back. The main entry should face the street.
- Buildings should address the street with varied and articulated facades, frequent entries and windows. Porches and balconies should be encouraged,

and facades consisting of long blank walls or series of garage doors should be prohibited.

- Driveways and garages should be located to the rear of the lot or interior of the block. Porches and front steps should face the local street.
- Encourage unity as well as diversity by specifying a common design vocabulary among the buildings, a clear pathway system and shared outdoor space that unifies and integrates the site.
- Define all outdoor spaces, distinguishing between those reserved for residents and those open to the public. Enclose the shared outdoor space with buildings, low fences or hedges, and paths. Clearly define the boundaries and transitions between shared and private outdoor space.
- Provide convenient access to shared outdoor areas, amenities such as play equipment, seating and tables to encourage their use, and vegetation for seasonal shade.
- Control access by nonresidents via gateways, fences, plant materials or enclosed location. Locate outdoor spaces to allow for easy surveillance from inside homes.

Action: Provide street connections between attached and detached housing developments to allow social interaction. Reduce the adverse visual effect of the parking area through careful location and landscaping.

- On large sites, extend the network of surrounding streets through the site to improve circulation, visibility, security and integration into the surrounding neighborhood.
- Encourage resident parking near each home, with a direct paved path to front or back door, while locating visitor parking near public spaces and public paths. Promote the use of parking spaces that are visible from within the resident's home and provide sufficient lighting.
- In most cases, parking lots should be located to the rear of homes. If they must be located on the street frontage, they should be screened by a low hedge, fence, gate or similar visual buffer.
- Use landscaping in and around parking lots to provide shade and visual relief.

Action: Provide a clear path system that connects each housing unit to destinations within the site and the surrounding neighborhood. Paths should be logical and predictable in their routes and should be linked to the public sidewalk system. Keep public paths at the edge of the site; distinguish between public paths and private outdoor space; and make paths visible from shared and private spaces.

Action: Support and encourage housing maintenance through educational and financial assistance.

- Training: Establish a program through a community organization (i.e. Americorps) to provide housing maintenance training for property owners.
- Volunteer Labor: Establish a "Christmas in October or April" program. This program organizes volunteers during one weekend a year, usually in October or April, to perform housing maintenance in low-income neighborhoods.
- Financial Assistance: The City should continue and increase, when possible, its financial assistance for housing maintenance and rehabilitation through these and other programs.
- Standards: Set minimum standards for housing conditions and ensure that they are met.
- Funding: Allocate funds for housing rehabilitation loan programs and provide matching funds for appropriate federal programs.
- Vacant Buildings: Enact restrictions on empty residential and commercial buildings regarding how buildings are boarded up and how long they can remain boarded up.
- Dangerous Buildings: Continue enforcing the dangerous buildings ordinance that allows the City to remove a dangerous abandoned buildings. Increase funding in support of the dangerous building removal program.

Action: Establish Program: Establish a program where a portion of CDBG and HOME funds are allocated to improve specific neighborhood blocks.

Action: Competitive Grant System: Develop a competitive grant system to award block improvement funding.

Action: Spring Clean-Up: Organize and implement a "Spring Clean Up" pilot project for CDBG eligible areas. This project could take the form of an annual trash pick-up if successful.

Community Facilities Plan Element

Action: The Springfield Public Schools Board of Education has stated a desire to maintain neighborhood elementary schools whenever feasible. The Board is encouraged to consider the effect on neighborhoods when recommending relocating or closing an elementary school. The School Board should work with City or County planning staff to develop a plan for re-use of any school property that is slated for closure prior to closing the school. An example of this process is the proposal to build

a new elementary school on the McGregor site. This makes sense to the community and is a tool for neighborhood revitalization. The Park Board and School Board should continue to follow the practice of developing school parks which integrate school and park facilities for maximum benefit to the community.

APPENDIX C

Urban Design Guidelines

Source: Southeast Springfield Development Study

The following design guidelines were developed by URS, the City of Springfield's consultants on the *Southeast Springfield Development Study*. These proposals, in addition to actions from the *Springfield-Greene County Comprehensive Plan* should be applied to the Northwest Development Study area.

The design guidelines are applied to:

1. Residential neighborhoods
2. Commercial districts
3. Office or industrial districts
4. Mixed-use districts
5. Bridges
6. Arterial roads
7. Indigenous materials
8. River bluffs

1. Residential Neighborhood Design Guidelines

The following guidelines will be used by City staff and officials to guide developers in their design process and to review their applications, in conjunction with the Springfield Zoning Ordinance. Some of these guidelines may be best achieved through the use of the planned-unit development feature of the Zoning Ordinance.

Action: Work with developers to achieve in each major neighborhood a range of housing types including single-family detached, townhouses and apartments. Some portion of each type of housing should, ideally, be available for occupancy on either an ownership or lease basis. Refer also to the guidelines on multiple-family housing below.

Action: Encourage a range of densities, housing types and building configurations; and discourage large housing projects that consist of a single building type.

Action: When combining housing types, it is preferable for the transition between types to occur at the rear rather than the front (i.e. across a courtyard or parking area rather than across the street).

Action: Local streets (either residential, commercial or industrial) should be interconnected to the extent possible. Cul-de-sacs should be used only to access small areas that could not otherwise be served without environmental impact or loss of parcels.

Action: It is essential to the long-term quality of the residential neighborhoods that the street corridor be more than simply a conduit for automobiles. The street corridor improvements should provide an attractive green frontage for the houses, provide shade and enclosure for the street, calm the traffic speeds and provide safe places for people of all ages to walk and for children to play. Thus, local residential streets should be designed to the standards of the City of Springfield, which include: Pavement Width - 26 feet, Right-of-Way Width - 50 feet, Sidewalks - one or both sides, depending on the housing density, trees - both sides of the street, three feet behind the curb, cul-de-sacs - when cul-de-sacs are used, they each should include a landscaped island.

Action: The City should encourage but not require that garages be set back from the front facade line of the house. Garages on corner lots should be rotated so they face the side street, if possible. Detached garages in the rear yard are acceptable.

Action: Transitional architectural features should be strongly encouraged on the front of every residential building. These include porches, covered stoops, balconies and bay windows.

Action: Plan for and encourage through zoning a variety of housing types, densities and costs in each major neighborhood.

Action: Attached housing should be created as an attractive, essential and acceptable alternative to single-family detached housing. The following design guidelines should be observed by designers:

- Encourage the use of a single-family housing design vocabulary in multifamily and attached buildings, as expressed by pitched roofs, articulated facades, visible entrances, porches or balconies, and a maximum height of three to four stories. Taller buildings may be suitable for senior citizens housing, but not as a rule for family housing.

- Attached housing should be built in small groupings so that it fits into the overall residential context rather than being sequestered into large project sites. No more than approximately 75 units of any type of attached housing should be built in a single area.
- Apartment buildings should emulate single-family housing in their basic architectural elements -- pitched roofs, articulated facade, identifiable front door and orientation to the local public street. Balconies overlooking the public street are highly encouraged. When garages cannot be located to the rear or on the interior of the block, they should be set back similar to the requirements for single- family housing. Ensure that buildings fit into the neighborhood through the use of compatible scale, roof pitch, building massing and materials.
- Encourage unity as well as diversity by specifying a common design vocabulary among the buildings, a clear pathway system and shared outdoor space that unifies and integrates the site of the attached housing.
- Design the front and back facades with appropriate levels of formality. The front, as the more public side of the house, should receive the more formal treatment, with trash and recycling storage, play equipment and outdoor storage located in the back. The main entry should face the street.
- Buildings should address the street with varied and articulated facades, frequent entries and windows. Porches and balconies should be encouraged, and facades consisting of long blank walls or series of garage doors should be prohibited.
- If a multifamily building or attached housing is developed near single-family detached housing, ensure that the width of the building facade facing the street is similar to that of a single-family house. Attached units should be grouped in rows of no more than four or six units to avoid a monolithic appearance.
- Duplexes should be designed for visual compatibility with single-family housing, should be scattered among the neighborhood rather than concentrated, and may be used as a transitional building type near larger buildings and street intersections.
- Driveways and garages should be located to the rear of the lot or interior of the block. Porches and front steps should face the local street.
- Improve security by creating visual indications of the boundaries between private space, public space and shared space.
- Provide each housing unit with clearly defined private or semi-private outdoor space such as a yard, patio, porch or balcony, with direct access from inside the unit. Clearly define the boundaries of private outdoor space with elements such as fencing, sidewalks and vegetation.
- Use semi-private outdoor spaces such as porches and patios to increase the sense of privacy and security within the home. Provide opportunities for

surveillance of shared outdoor areas such as streets, sidewalks and play areas from within the home.

2. Commercial District Design Guidelines

The following guidelines will be used by City staff and officials to guide developers of retail and service business properties in their design process and to review their applications.

Action: Any single-family neighborhoods that abut commercial development should be protected or screened from adverse visual impacts. Building heights and massing should be kept low or reduced adjacent to single-family housing. Except for intentionally mixed- se developments, landscaping, berming and/or fencing should separate commercial and residential activities.

Action: Commercial building heights within 100 feet of existing or proposed detached housing or townhouses should not exceed 2 stories or 24 feet.

Action: Building Walls. All sides of a building visible to the public, whether viewed from a nearby property or a roadway, should display a similar level of quality and architectural finish. This should be accomplished by integrating architectural variations and treatments such as windows and other decorative features into all sides of buildings. Building walls along public streets should not be blank. All walls facing streets or walkways should include windows, doors, openings or other treatments that help mitigate the unfriendly appearance of blank walls and improve the environment for motorists and pedestrians. One or more of the following design techniques should be used: changes in color, texture or material; projections, recesses and reveals expressing structural bays, entrance or other aspects of the architecture with a minimum change of plane of 12 inches; groupings of windows or fenestration; arcades and pergolas; display windows.

Action: Roofs should be peaked, sloped, gabled or shed-style to add visual variety and compatibility with nearby housing.

Action: Retail Sites: Design attractive commercial sites that harmonize with residential areas, reduce the visual impact of parking and nicely accommodate the pedestrian and the bicyclist.

Action: The exterior appearance of commercial buildings should harmonize with nearby residential areas. Smooth-faced concrete block and tilt-up concrete panels

should not be used. Metal should not be used as a primary exterior surface material. It may be used as a trim material covering no more than 10 percent of the façade or as a roof material. Façade colors should be earth tones with a low reflectance. High-intensity, metallic, black or fluorescent colors are prohibited. High-intensity, primary, metallic or fluorescent colors should not be used on any roof area visible from a residential area, public or private right- f-way or public open space.

Action: Lighting from commercial developments should be carefully designed and strictly regulated. Lighting from commercial developments shall be designed so that it does not directly shine off the site, either onto public streets or onto residential areas. All developments should meet or exceed the requirements of Section 6-1400 of the Springfield Zoning Ordinance. In particular, lighting from gasoline station canopies shall be recessed and/or shaded so that the luminaire cannot be seen from off the site and light cannot shine directly off the site.

Action: Commercial sites should be composed of a series of neighborhood-scale "blocks" of development with an average length of 400 feet. Blocks will be defined by driveways and pedestrian or bicyclist paths.

Action: Every new commercial development shall be landscaped and screened consistent with the requirements of Sections 6-1000, Screening and Fencing, and 6-1200, Landscaping and Bufferyards, of the Springfield Zoning Ordinance.

Action: The design of parking areas should be regulated according to Section 6-1301 of the Springfield Park Zoning Ordinance. The following guidelines are supplementary.

Action: Large parking lots should be divided into bays by raised islands landscaped with trees. Parking areas should be broken into individual lots not to exceed 200 cars. These sections should be separated by major landscaped buffers to provide visual relief.

Action: In parking lots, landscaped islands should be provided at maximum intervals of every twenty parking spaces and at the ends of all rows of parking. Parking islands should have a minimum width of 8 feet. A continuous poured-in-place concrete curb should be provided around parking islands to prevent vehicular intrusion. Parking islands may not be used to satisfy the open space requirement except where islands are greater than 500 square feet in size. Additional landscaping is to be provided within parking lots in accordance with the requirements of the "Landscape" section of this chapter.

Action: Parking directly adjacent to buildings should be avoided wherever possible. A minimum setback of 15 feet should be reserved for pedestrian circulation and landscaping between building and parking areas except for drop-off and loading zones. This distance may be reduced to 10 feet in the industrial areas and may not require landscaping depending upon its proximity to streets and common open space.

Action: Driveways should be consolidated to minimize external street congestion.

Action: Landscaping layout and design should clearly define and direct pedestrian movement through parking areas.

Action: All parking should be screened from public streets by appropriate landscaping.

Action: Where parking structures are used, the architectural design and use of materials should be similar or compatible with the architecture of adjacent buildings. Screening at the perimeter of the structure should be provided so that automobiles are screened up to a height of three feet six inches above the first floor level. Above-grade structure parking should incorporate planter boxes on all deck perimeters facing public street frontages or pedestrian circulation/plaza areas. No parking structures should be located within a front yard.

Action: Pedestrians should be able to move with comfort and security between the public sidewalks and private developments and among buildings on the same site. As much as possible, pedestrian walkways should be provided directly between adjoining developments. If long blocks are used, mid-block pedestrian and bicyclist access between the residential neighborhood and the commercial development should be provided.

Action: Pedestrian routes from the street to the building entrances and through each site should be clearly defined using building massing and architecture, sidewalks, landscaping and lighting. Awnings and arcades over windows and doors should be employed to protect pedestrians from the elements.

Action: Each development should include a bicycle rack, and sidewalk ramps should be installed at curbs for both bicyclists and the disabled.

Action: Developers should be encouraged to include sidewalk cafes or outdoor eating for restaurants, as well as outdoor seating.

Action: Signs should be controlled according to Section 5-1400, Signs, and Section 5-1410, Scenic Corridor Overlay District, of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action: Freestanding signs should have a limited number of names and/or logotypes (a maximum of three). They should be designed to appear as a single sign from a distance through the use of a framework of materials consistent with the building facade.

Action: Wall signs should not be white backlit plastic; individual letters are preferred; colored plastic panels with white or colored letters may also be acceptable. No bulletin signs (either portable or permanent) should be allowed.

Action: Gasoline station canopy-face signs should not be allowed.

Action: Commercial buildings shall not be allowed to be designed as signs through the use of colors or patterns that are particular to the public communication system of the company or franchise. Buildings should be designed for re-use by other businesses without substantial renovations to their exterior appearances. This guideline is intended to create buildings that are compatible with the generally residential nature of the community and which are modest in their outward appearance.

Action: The City will support through zoning, site plan reviews and shared parking the creation of mixed-use developments that include housing or offices above shops.

Action: On major corner sites, it would be beneficial to locate a building near the street intersection. The City's requirements for a clear vision zone along the right-of-way lines of both intersecting streets must be maintained, however.

3. Office, Industrial and Business Park Design Guidelines

The following guidelines are intended to promote appealing office, industrial and business park development in Southeast Springfield. While consistency is critical in order to attract and retain the best corporate "citizens," these standards also permit design flexibility in order to address individual company needs. Precedence is given to any provisions of the Springfield Zoning Ordinance that are found to overlap these guidelines. In general, the development of industrial and office sites should be planned to provide pleasant and safe environments for employees and visitors. Multiple building projects should cluster building entries. Parking lots should be located for ease of access while minimizing their visual dominance. Care should be

taken to avoid a rigid strip-like arrangement of site elements in order to promote spatial diversity along street corridors. Sidewalks and paths should be provided to help encourage pedestrian activity and to link the pedestrians to various activities and facilities.

Action: All structures and buildings should provide a clear view of the public entry from adjacent public rights-of-way.

Action: Each principal building on a site should have a highly visible entry featuring no fewer than two of the following: canopies, overhangs, arcades, raised corniced parapets over the door, peaked roof forms, arches, outdoor patios, display windows, architectural details or integral planters .

Action: Driveway setbacks from adjacent property lines, other than along street frontages, should be a minimum of 10 feet, except where access driveways are shared by adjacent property owners.

Action: No landscape setback is required between warehouse and industrial uses provided this abutment is not common open space.

Action: All setbacks should be planted in accordance with the landscape setback treatments described in these guidelines.

Action: Landscaping should be regulated according to Section 6-1200 of the Springfield Zoning Ordinance.

Action: The design of parking areas should be regulated according to Section 6-1301 of the Springfield Zoning Ordinance. Refer also to the supplementary parking design guidelines in the Commercial District section of this chapter.

Action: Direct, continuous sidewalks should be built across all large parking areas.

Action: Internal pedestrian plazas should be used to create “place” and tie uses together.

Action: Building entries should be oriented toward plazas and walkways, not parking lots.

Action: Bicycle locking racks should be provided in visible and secure locations.

Action: Sidewalks adjacent to any buildings containing retail uses, should be 8 feet wide.

Action: All other sidewalks should have an unobstructed width of 5 feet where pedestrian movement is anticipated and should be handicapped accessible. The connection of the five-foot pedestrian path to the adjacent public sidewalks is encouraged.

Action: Office Development: Promote office development that includes attractive architecture and environmentally-sensitive site planning and which complements nearby housing and provides attractive outdoor spaces for employees and visitors.

Action: Service, Loading and Storage Area Guidelines Off-street loading should be regulated according to Section 5-1600 and 6-1302 of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action: All storage, loading or service areas must be located in the side or rear yards of buildings.

Action: No articles, goods, materials, machinery, equipment, vehicles, plants, trash, animals or similar items should be stored or kept in the open or exposed to view from adjacent properties, parking areas, public streets or pedestrian walkways.

Action: Loading and servicing areas should be designed so that the entire loading or servicing operations are conducted within the confines of the building site. In addition, these areas must be integrated into the building architecture. Loading doors should be recessed from the building face to minimize their visual prominence . No loading areas should be visible from public streets or building entries .

Action: Screening walls and fences should match the building architecture.

Action: All loading and storage areas should be screened from public streets and non-industrial land uses by using walls, fences and/or landscaping.

Action: Screening should be aesthetically pleasing and complementary to the building and its surroundings.

Action: Objects such as storage tanks, processing equipment, cooling towers, communication towers, vents, vehicles, or any other structures or equipment should be compatible with the building architecture or screened from adjacent properties, parking areas, public streets and pedestrian walkways by using fences or walls.

Action: Fences or walls should be of height at least equal to that of the materials or equipment being stored.

Action: Materials and colors for fences and walls should be compatible with the building architecture.

Action: Chain link fencing is not permitted in areas visible from non-industrial properties, parking areas, public streets and pedestrian walkways.

Action: A fence of heavy wood, brick or masonry columns should be installed where a non-residential development abuts a residential area. Landscaping should be provided on the residential side of the fence.

Action: Long runs of fencing parallel to public streets are discouraged. Where long runs cannot be avoided, the horizontal alignment of the fences should be varied to create visual variety and to provide planting “pockets” between the fence and the street.

Action: All permanent utilities should be underground unless otherwise approved.

Action: Utility appurtenances, utility meters, irrigation system, backflow precentors, transformers, etc., should not be visible from adjacent properties, parking areas, public streets and pedestrian walkways. Transformers should be grouped with utility meters whenever possible.

Action: Lighting should be regulated according to Section 6-1400 of the Springfield Zoning Ordinance. The following guidelines are supplementary.

Action: Lighting should be restrained, limited in extent, and respectful of each sites visual environment.

Action: Durable and vandal resistant fixtures should be used.

Action: Lamps should be efficient, long lived, readily available and easily replaced.

Action: Light levels should be uniform along streets and primary pedestrian paths.

Action: Lights should not be placed to cause glare or excessive light spillage onto neighboring sites.

Action: Security lighting fixtures should not project above the roof-line of the building and should be shielded. The shields should be painted to match the surface to which they are attached. Security lighting fixtures should not be substituted for

parking lot or walkway lighting fixtures, and should be restricted to lighting only loading and storage locations, or other similar service areas.

Action: Exterior wall-mounted floodlights are expressly prohibited, except for security lighting called for in areas called out above.

Action: Exterior lighting fixtures are to be as follows:

- parking lot driveway fixtures: cut-off type, metal halide, rectilinear style, aluminum extrusion luminaries, thirty-foot mounting height. Single or double luminary configuration on square or round pole. Luminary and pole should match street light finish or be compatible with the building materials.
- Pedestrian area and walk lights: at applicant's option.

Action: It is recommended that accent illumination be provided at such key locations as building entries, driveway entries, and project signage.

Action: Signs should be controlled according to Section 5-1400, Signs, and Section 5-1410, Scenic Corridor Overlay District, of the Springfield Zoning Ordinance.

4. Mixed- and Multiple-Use Districts

Action: Whenever the market can support it, the City should allow and encourage investments that combine more than one type of land use on a site. Mixed-use development implies a vertical relationship (e.g., offices or housing over shops) while multiple-use development means a side-by-side positioning. Either case promotes more efficient land use, reduces auto trips somewhat and creates a more interesting urban environment.

5. Arterial Roads

Action: Arterial roads are another major public design opportunity. Arterials create a framework for the land use pattern and provide visual clues to the structure and order of the city. Sometimes these roads can be unattractive because of the width of their pavement and when they serve major traffic generators that demand large parking lots.

Action: Therefore, it is imperative that the City embark on a program of landscaping along roads such as Glenstone Avenue, Highway J, Battlefield Road, National Avenue or the planned East-West Arterial. Trees should be planted in the public right-of-way

– either during initial construction or as a retrofit project – as well as in the private setback. The same goes for the Major Arterials such as the James River Freeway or US 65, although those plantings would be entirely public responsibility. (Additional guidance on this subject can be found in the Community Visual Image and Character Plan of *Vision 20/2*0.) The City has an opportunity to create a highly landscaped network of roads across the community and on its perimeter, including River Bluff Road. The relatively small additional cost of such landscaping and decorative lighting will be returned to the community in tax base, economic development and quality of life.

6. Indigenous Materials

Action: Designers of either private or public improvements should use native materials
and plant species to the extent possible to harmonize their projects with the local environment. These include the limestone that is abundant and visible as rocky outcrops and bluff walls as well as the dominant tree species from the river alley and the uplands. The limestone might be a very appropriate material for bridge fenestration or entry monuments. The rocky outcroppings should be preserved, not leveled, as they are symbolic of the Ozarks.