Comprehensive Plan

February 1998

Prepared by:

Harland Bartholomew & Associates

RESOLUTION

WHEREAS, the Plan Commission of the City of Hazelwood has held numerous meetings over a 12 month period to prepare a Comprehensive Plan, and

WHEREAS, over the course of this 12 month period the Plan Commission sponsored two public workshops at which interested parties were invited and encouraged to attend to provide input to the new Comprehensive Plan, and

WHEREAS, the substantive portions of the Comprehensive Plan were discussed numerous times in meetings of the Plan Commission which meetings were open to the general public, and

WHEREAS, the Plan Commission, with assistance of planning consultants and city staff, made careful and comprehensive surveys and studies of the existing conditions and probable future growth of the municipality, and

WHEREAS, the Comprehensive Plan, with the accompanying maps, plats, charts and descriptive and explanatory matter, show the Plan Commission's recommendations for the physical development and uses of land, and

WHEREAS, the Comprehensive Plan is intended to serve as the city's plan to guide the development and redevelopment of the city over the next 20 years, and

WHEREAS, the Plan Commission held a public hearing on the Comprehensive Plan on January 8, 1998, after giving fifteen days' notice of the time and place of such hearing being published in a newspaper having general circulation within the municipality, and

WHEREAS, the Plan Commission of the City of Hazelwood wishes to adopt this Comprehensive Plan as the plan for the development of the municipality,

NOW, THEREFORE, BE IT RESOLVED by the Plan Commission of the City of Hazelwood that the attached Comprehensive Plan shall be the official Plan of the City of Hazelwood.

Approved this 12th day of February, 1998

Frank Stockmann, Chairman

City of Hazelwood

Mayor

David Farquharson

City Council Members

Robert Aubuchon, Ward 2
Jeanette M. Eberlin, Ward 6
Pat Jackson, Ward 7
Mary O'Reilly, Ward 4
Richard Piotrowicz, Ward 8
Mollie C. Rickey, Ward 5
Mathew Robinson, Ward 1
R. Ray Rohman, Ward 3

Administration

Edwin Carlstrom, City Manager
Coleen Klos, City Clerk
Barbara Clasby, Assistant City Clerk
Craig Owens, Assistant to the City Manager
Elizabeth Austin, Economic Development Coordinator

Public Works

Thomas Manning, Director
Mike Rambousek, City Planner
Patrick McSheehy, Code Administrator

City Attorney

Kevin O'Keefe

Finance

Donnie Bryant, Supervisor

Police Department

Carl Wolf, Chief

Fire Department

James Matthies, Chief

Plan Commission

Frank Stockmann, Chairman
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William Young, Secretary
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Roger Maddox
Mark Rodell
Bill Stinecipher

Planning Consultant

Harland Bartholomew & Associates
Richard Shearer, Project Manager

Table of Contents

Item *Page*

Urban Design Element (continued)

Land Use Element

Land Use Element (continued)

Economic Development Element

Housing Element

Transportation Element

Community Facilities Element

Recreation Element

Infrastructure Element

Municipal Finance Element

Municipal Finance Element (continued)

List of Figures

List of Tables

Introduction

Planning is a process of guiding and maintaining the orderly growth and development of a city. Its goal is the promotion of the public welfare through the application of sound planning principles, which reflect the basic social, cultural and economic values of the community. Planning assists decision-makers in thinking systematically and in understanding public issues. It is a process for determining the appropriate future action through a sequence of choices.

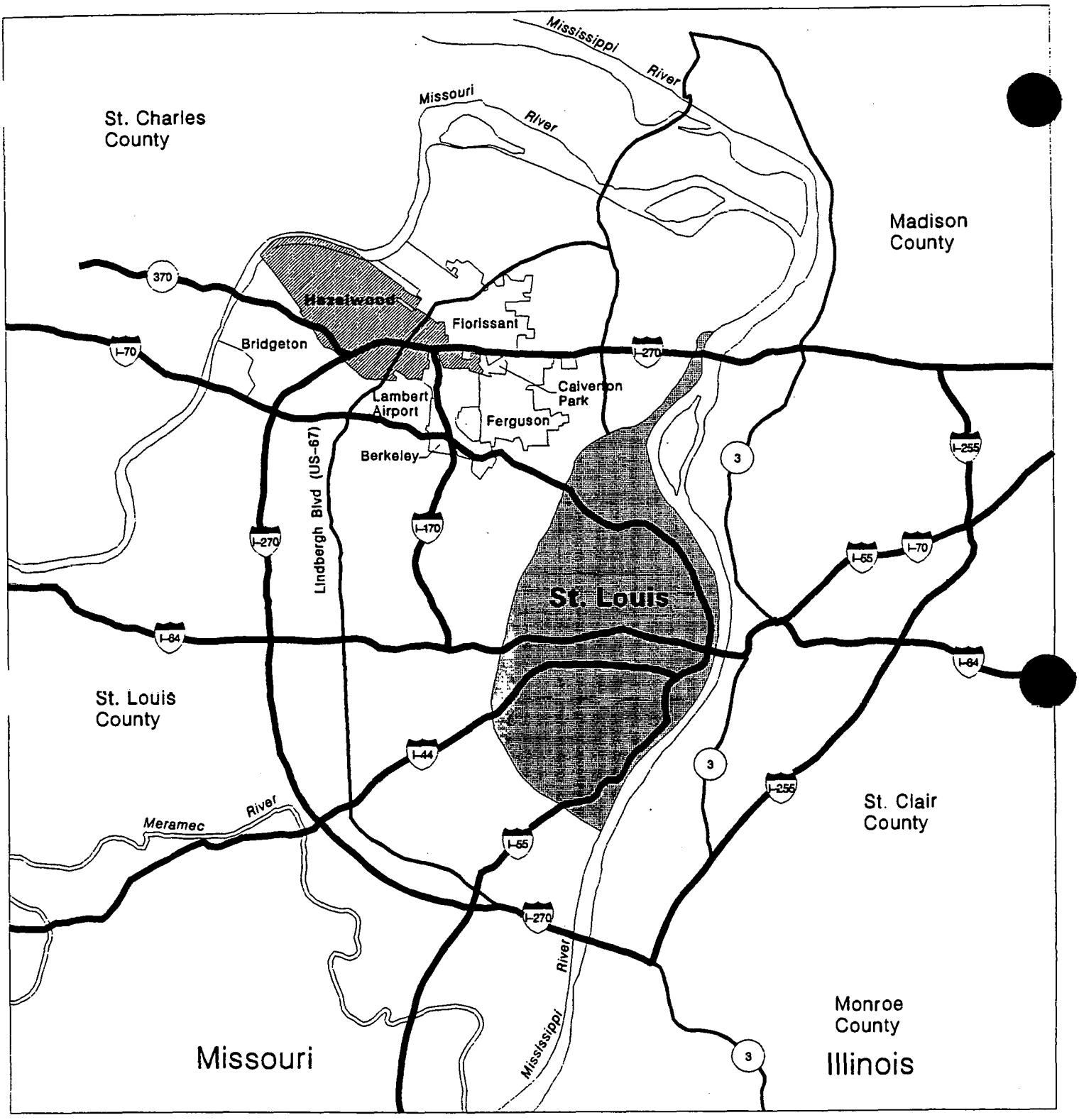
Hazelwood has realized the need to maintain a comprehensive plan to guide future development. On November 26, 1970 the city approved funding for its first comprehensive plan. A second comprehensive plan was prepared by the city in 1983. This current planning effort is designed to update these previous plans, provide a plan for all of the land within the city's jurisdiction and provide clear guidance to the city in realizing its long-range goals.

GEOGRAPHIC LOCATION

Hazelwood is located in the rolling hills of northern St. Louis County near the junction of the Missouri and Mississippi Rivers. Approximately 13 miles northwest of downtown St. Louis, Hazelwood is located in the east central part of Missouri immediately across the Mississippi River from Illinois. Hazelwood is part of the St. Louis Metropolitan Statistical Area, the fourteenth largest metropolitan area in the United States. Hazelwood has excellent access to the interstate highway system including direct access to both I-270 and I-170. I-70 is less than two miles south of the city and can easily be accessed via I-270, I-170 or Lindbergh Boulevard (U.S. 67). Highway 370, which connects I-270 in St. Louis County to I-70 in St. Charles County, is less than two miles west of Lindbergh. A regional location map is included in Figure 1.

MUNICIPALITIES IN THE AREA

Most of the area around Hazelwood is located within other municipalities. There are some small pockets of unincorporated St. Louis County located next to the city. Hazelwood has a common boundary with a number of municipalities including Berkeley, Bridgeton, Calverton Park, Ferguson, and Florissant. The population and area of these municipalities are summarized in Table 1. The area south of Hazelwood that contains Lambert-St. Louis International Airport is owned by the City of St. Louis but is within the unincorporated area of St. Louis County.



CITY OF HAZELWOOD

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SCALE IN MILES

Figure 1

REGIONAL LOCATION MAP

location.

Berkeley

Berkeley is located southeast of Hazelwood and immediately east of Lambert-St. Louis International Airport. Berkeley was incorporated in 1937, contains 4.87 square miles and had a population of 12,250 people in 1990, a significant drop from its 1970 population of 19,743. Berkeley is a Home Rule City, employing 150 full-time personnel and has an annual budget of $10.4 million.

Berkeley contains a broad mix of residential, commercial, industrial and institutional land uses. Industrial uses include the offices of Boeing Corporation. Some of the residential structures in the city have been purchased by the airport in recent years as part of the noise abatement buy-out program. This program targets areas that are adversely affected by high levels of noise from aircraft take-offs and landings. These properties are purchased by the airport and after the seller vacates the house, it is razed. Berkeley's comprehensive plan was completed in 1979 and the city's zoning ordinance was adopted in 1988. Most of the land in Berkeley that abuts Hazelwood is zoned for single-family residential uses or light industrial uses.

Bridgeton

Bridgeton is located southwest of Hazelwood along I-70. Bridgeton was incorporated in 1843 and covers an area of 16 square miles. The city contains a mixture of residential and commercial uses. Total population has declined in Bridgeton since 1970. The 1990 population was 17,779, a decline of 3.6 percent over the 1980 population level. Bridgeton is a Charter City, has 137 employees and has an annual budget of $12.0 million.

A significant factor influencing Bridgeton is its location immediately west of Lambert-St. Louis International Airport. Many houses in the city have been acquired through the airport's noise abatement buy-out program. The noise abatement buy-out program and airport expansion plans were key considerations in the city's efforts to update its most recent comprehensive plan (completed in 1994). A recommendation of the plan was a change to the building code to require more insulation and sound deterrent measures in new construction. The city's zoning ordinance was adopted in 1970.

Calverton Park

Calverton Park is located immediately southeast of Hazelwood on both sides of Florissant Road. The village was incorporated in 1940 and covers an area of .4 square miles. The village is developed entirely for residential uses and had a 1990 population of 1,473, down from its population of 2,025 in 1970. The village has an annual budget of approximately $400,000 and employs six full-time personnel. Calverton Park is within the Florissant Valley Fire Protection District. The village has no comprehensive plan, but has a zoning ordinance adopted in 1953. The zoning ordinance divides the village into four single-family zoning districts.

Ferguson

Ferguson, incorporated in 1894 is located southeast of Hazelwood and covers approximately 6.23 square miles. The city's 1990 population was 22,286, which is lower than its peak population of 28,759 in 1970. All of the area in Ferguson which is adjacent to Hazelwood is zoned for single-family residential use. The city employs 128 full-time personnel and has an annual budget of approximately $12.2 million. Ferguson is a Home-Rule City operating under a city charter and a council-manager form of government. Like Hazelwood and Berkeley, Ferguson has a municipal fire department operating from two fire stations. Ferguson's current comprehensive plan, the Vision 2015 Plan, was adopted in June of 1995. Ferguson adopted its first zoning ordinance in 1932. The current ordinance was adopted in 1985.

Florissant

Florissant is located north and east of Hazelwood, primarily on the north side of I-270. The city was incorporated in 1857 and covers a land area of 10.18 square miles. Florissant had a 1990 population of 51,038, significantly less than its 1970 population of 65,908. Florissant is a Home Rule City, employing 193 full-time personnel and has an annual budget of $16.3 million. Florissant is within the Florissant Valley Fire Protection District. Florissant's zoning ordinance was adopted in 1965. Areas in Florissant that are adjacent to Hazelwood have either commercial or residential zoning.

Table 1
Municipalities in the Area

Municipality	Area in Square Miles	1970 Population	1990 Population	Type of Government
Berkeley	4.87	19,743	12,250	Charter City
Bridgeton	16.00	19,992	17,779	Charter City
Calverton Park	0.40	2,025	1,473	Village
Ferguson	6.23	28,759	22,286	Charter City
Florissant	10.18	65,908	51,038	Charter City
HAZELWOOD	17.20*	14,082	15,324*	Charter City

*Hazelwood's area includes annexations since 1990. The city's current population is estimated to be 26,829 due to these annexations.

Lambert-St. Louis International Airport

Lambert-St. Louis International Airport is located immediately south of Hazelwood in unincorporated St. Louis County. The airport is owned by the City of St. Louis and is operated by the St. Louis Airport Authority. Based on the proximity of the airport to the city, Hazelwood is affected by aircraft noise as are its neighbors to the southeast and southwest. The three parallel runways which serve the majority of airport traffic are oriented northwest/southeast which diverts some aircraft away from Hazelwood.

PHYSICAL ENVIRONMENT

Physiography

Hazelwood is located in the Salem Upland portion of the Ozark Plateau physiographic province of the United States. The Ozark Plateau is part of the Ozark-Oachita Highlands physiographic division which covers most of Arkansas as well as south central and southeast Missouri. The Ozark Plateau is a deeply dissected plateau characterized by hills with steep intervening valleys cut by clear streams. The Salem Upland is characterized by hills and broad floodplains. Much of Hazelwood, and the area around it, consists of rolling upland although the northwest portion of the city is located in the Missouri River floodplain.

The topography in the Hazelwood is much different from that immediately across the Missouri River in St. Charles County. St. Charles County is within the Interior Plains physiographic province which covers most of the mid-west and north-central portions of the United States. The Interior Plains province is characterized by flat to gently rolling topography.

Geology

The lithology and physical structure of the underlying surface of Hazelwood consists of slightly to moderately tilted, older sedimentary rocks. These sedimentary rocks include dolomite, shale, sandstone and limestone. Bedrock formations exposed in the area represent three separate geologic systems, the Ordovician, Mississippian and Pennsylvanian, each of which were formed at different periods during earth's history. Ordovician rocks include sandstone, dolomite and moderate solution limestone. Overlying these formations are Mississippian rocks including cherty limestone, shale and extensive solution limestone. Pennsylvanian rocks (more than 300 million years old) overlay these older Mississippian formations and consist of cyclic strata of shales, sandstone and limestone with some seams of coal. These cyclic deposits are most common in the Hazelwood area except for the Missouri River floodplain which contains alluvial sediments and soil material left by Missouri River floods.

Climate

Hazelwood has a humid continental climate which is characterized by warm summers. Most of the city's annual precipitation occurs in the warmer months. The city is, however, subject to wide variations in temperature and precipitation from season to season. The total average annual precipitation is approximately 34 inches, with an average annual snowfall of approximately 18 inches. The highest monthly precipitation (approximately 3.7 inches) is in June and the lowest amount of precipitation occurs in January. Precipitation in the winter months is primarily in the form of snow which may occur from November through early April. The highest average snowfall (approximately 5.4 inches) is in January. While snow is generally the heaviest in January, ten inches of snow equals only one inch of precipitation.

Average temperatures vary considerably throughout the year. January has an average temperature of 31.3° F. and July has an average temperature of 78.2° F. Below zero temperatures occur at least one day during 80 percent of the winters and temperatures of 100° F. occur at least one day during 80 percent of the summers. It is unusual, however, for temperature extremes to last for more than two or three days.

The growing season (the period from the last killing frost in the Spring to the first killing frost in the Fall) is 210 days per year. The area around the city experiences relatively high humidity and experiences heavy fog approximately 11.6 days per year. The average annual relative humidity varies from 83 percent at 6:00 a.m. to 59 percent at noon to 61 percent at 6:00 p.m. The prevailing wind direction is from the south although winds from the northwest and west northwest prevail from December through April.

Vegetation

The Hazelwood area is covered primarily by broad-leaf deciduous and needleleaf deciduous trees. Historically, the naturally occurring trees have been oak and hickory varieties.

HISTORY

Much of the information in this section was obtained from a brochure published by the Hazelwood Historical Commission. The original text in the brochure was written by Bill Sisler, and edited and condensed by Kathy Murray.

Early History. In 1541, Spanish explorers were the first Europeans to set foot in the Hazelwood area. This area was subsequently claimed for Spain by de Soto and claimed for France by LaSalle. After King Louis XIV of France directed that a large area, including Hazelwood, be explored in 1658, French explorers from Quebec began searching for potential locations of trading posts in the Mississippi River Valley. In 1682, the French

formally took possession of a large portion of the United States which they named Louisiana. By 1760, French traders, trappers, and missionaries had penetrated the Mississippi Valley and established settlements as far south as the Missouri River in St. Charles County. Except for a brief period when the area was deeded to Spain, the territory remained under French control until acquired by the United States in 1803 as part of the Louisiana Purchase.

Early Settlers. David and Abraham Musick left Charlottesville, Virginia in 1797 for a new life in Spanish Louisiana. They led a group totalling more than 100 individuals who traveled 900 miles over a five month period. The group crossed the Mississippi River at Portage de Sioux into Spanish territory. The Spanish land grant stipulated that new settlers in Spanish Louisiana would earn land by working it. Land settled by the Musicks and others would eventually become the City of Hazelwood.

Naming Hazelwood. During the early 1800's, groups of settlers in the Florissant Valley were Spanish, French and new Americans from Virginia, Kentucky and the south. Many of the existing streets and roads in Hazelwood were named for these early settlers including Graham Road, Aubuchon Road, Utz Lane, Pershall Road, St. Cin Lane, Dunn Road, Taylor Road and Brown Road. The origin of the name of the city is attributed to a legend. This legend indicates that in 1828, Senator Henry Clay of Kentucky was campaigning for president and spent several days at the farm of Major Richard Graham (the farm had been purchased from David Musick). According to the legend, Senator Clay looked out over the orchards and fields and exclaimed to his host "Ah, Sir, this so much reminds me of Hazelwood, my Kentucky estate!" The legend continues that after Senator Clay left, Major Graham called his land Hazelwood Farms. Hazelwood Road was named for the farm.

Rail Connections. In 1855, the Wabash railroad was constructed, connecting the City of St. Louis to the Hazelwood Farms area and to cities to the north and west including Florissant and St. Charles. By 1875, the City of St. Louis was a thriving city with cobblestone streets and gas lights, substantial residences and a growing industrial base. On the other hand, St. Louis County was a large, sparsely populated rural area. County citizens petitioned the city to annex the entire county, but in 1876, city residents voted to reject the county petition and set permanent boundaries for the city. This action allowed almost 100 villages and cities to incorporate within the county over the next 120 years.

Incorporation as a Village. In 1948, the City of Florissant passed an ordinance to annex adjacent industrial properties and farmland contiguous to them which make up present day Hazelwood. Farmers in the area were opposed to annexation. Alfred Aubuchon, a descendant of one of the region's earliest settlers, and Lee Shuey rallied the neighboring farm families and formed the Florissant Valley Protective Association to fight annexation. John Mooney, attorney for the association, advised the association to petition the court for permission to incorporate as a village. Fifty-three of the 55 registered voters in the area, all farmers, signed the petition. The court ruled that this petition took

precedence over the Florissant ordinance of annexation. The association's petition was granted, Hazelwood was incorporated as a Village on September 7, 1949, and on September 26th of that year newly elected five member Board of Trustees met in the old Elm Grove Schoolhouse (Little Red Schoolhouse) to begin governance of the new Village. Another petition was filed by the Ford Motor Company and Wabash Transit Company for incorporation of the industrial area as the Village of Motorville. This petition was dismissed by the court without a hearing.

Home Rule City. The U.S. Census of 1950 reported 336 residents in the Village. Most of the old farms were still intact, but a trend toward urban development had begun. During the 1950s, much of the land was divided into new residential subdivisions. During this period, shopping centers began to replace individual retail stores. Village Square was constructed in 1958. In the 1960s, it became obvious that the increases in population and new commercial and industrial developments were stretching the capabilities of the corporate powers of the Village. Village Trustees appointed a group of citizens to analyze the situation and recommend whether or not Hazelwood should seek a city form of government. In 1968, the committee recommended that the Village change its governmental structure. The Village Board of Trustees authorized an election to select 13 Freeholders to serve on a charter commission. This commission drafted a proposed charter which was submitted to city voters. The charter was adopted and, effective on April 7, 1970, the city became a Home Rule City with a Council-Manager form of government.

Annexations and Growth. The city has continued to grow since 1970 based, in part on annexations of adjacent unincorporated lands. Twelve annexations have been approved since the city was incorporated. A significant annexation effective in 1996 added approximately 7,546 acres of land to the city and extended the city limits north and west to the Missouri River.

WARDS

Hazelwood is divided into eight wards, including two wards added after the 1994 annexation. The boundaries of these eight wards are depicted in Figure 2.

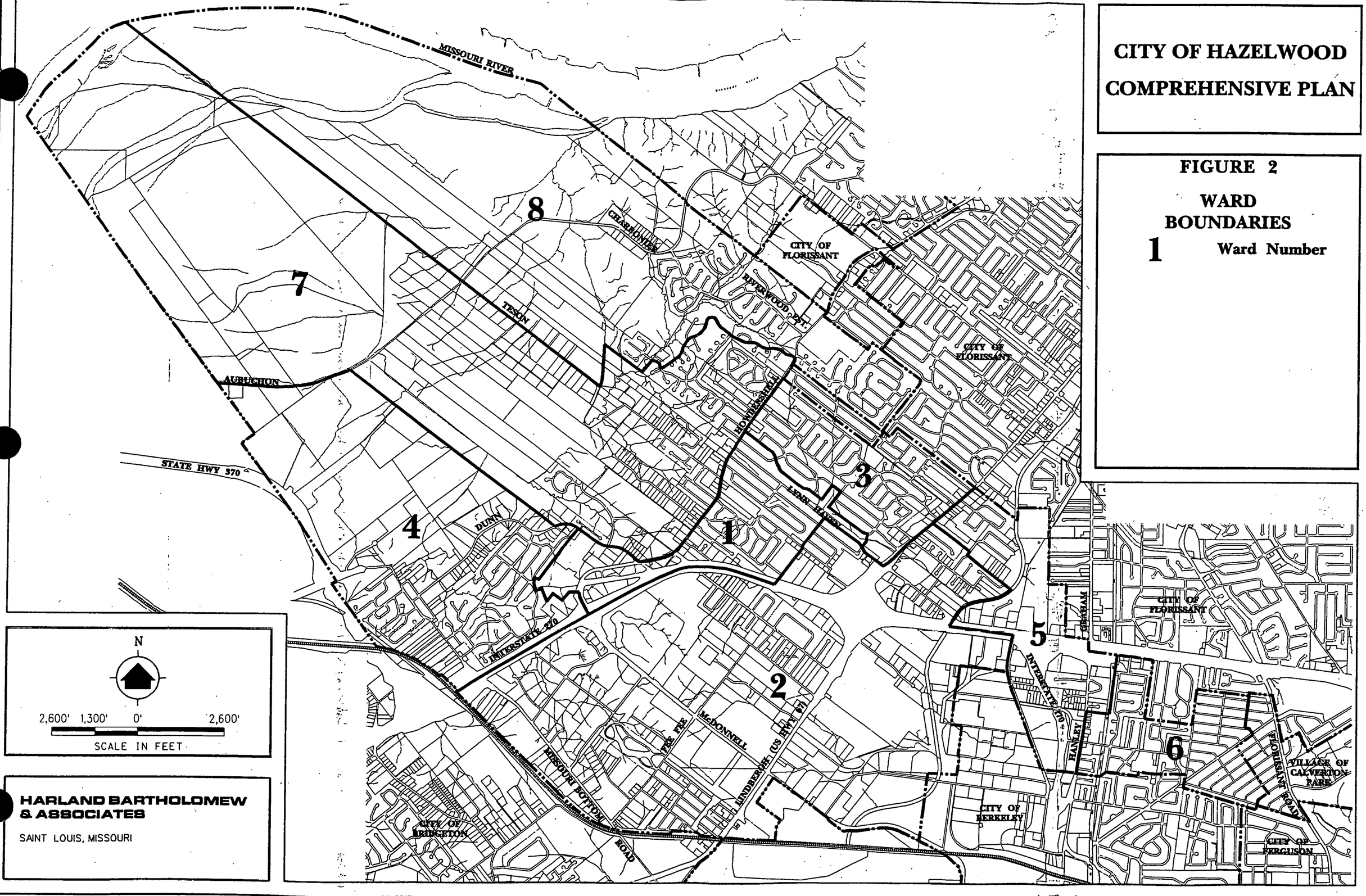
CONTENT OF THE PLAN

Hazelwood's comprehensive plan contains several elements which were prepared after a thorough examination of existing conditions, the development of goals and objectives, and the preparation of a concept plan which was reviewed by the Plan Commission. Each plan element begins with a review of existing conditions relative to the element, and includes goals and objectives followed by a plan.

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 2
WARD BOUNDARIES

1 Ward Number



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Demographics

INTRODUCTION

A review of socioeconomic data for Hazelwood was performed by examining trends in various demographic characteristics over the preceding decade. U.S. Bureau of the Census data from the 1990 census, 1980 census, and some previous years were used to compare social and economic characteristics of Hazelwood's population over several decades as well as to compare Hazelwood to six similar, nearby cities: Bellefontaine Neighbors, Berkeley, Ferguson, Bridgeton, Overland and University City.

POPULATION

Hazelwood's population grew from 336 people in 1950 to 15,324 in 1990. Since 1990, the city's population has increased due to annexations. In 1995, Hazelwood had an estimated population of 26,829. Historical population data is summarized in Table 2.

Table 2
Historical Population Growth

Year	Population	Percent Increase
1950	336	--
1960	6,045	1,699.1%
1970	14,082	132.9%
1980	13,098	-7.0%
1990	15,324	17.0%
1995 estimate	26,829	75.1%

Source: U.S. Census

Hazelwood's population growth between 1950 and 1980 reflected the general population trends of St. Louis County. Like many municipalities in St. Louis County, Hazelwood experienced substantial population growth through the 1950s and 1960's. But in the 1970's, the city's population leveled off and began to decline until the annexations of the 1980s and 1990s helped to increase the total population.

Hazelwood's total population declined eight percent between 1970 and 1980. However, the city's population has increased substantially since 1980. This decline in population between 1970 and 1980 was less than any of the other cities in the comparison group. All of the comparison cities experienced substantial declines in population since 1970, ranging from 14 to 24 percent, between 1970 and 1990. Population characteristics for Hazelwood and the six comparison cities is included in Table 3.

The population declines in the other cities were the result of fewer persons per household. The average household size in Hazelwood decreased from 3.15 in 1970 to 2.41 in 1990. Similarly, all of the comparison cities experienced decreases in houschold size during this same time period. These decreases in household size are consistent with national trends towards smaller households. Smaller households are the result of lower birthrates (common since the mid 1960s) and higher rates of divorce. Hazelwood's 23.5 percent decrease in household size between 1970 and 1990 was the highest of the comparison group. This decrease was, however, offset by a large increase in the number of housing units available in the city. While total population declined in all of the other comparison cities, the population in Hazelwood increased.

SOCIAL CHARACTERISTICS

In 1990, 24.5 percent of Hazelwood residents were enrolled in school. This percentage was significantly less than the comparison group's average of 32.9. However, Hazelwood residents have high school and college graduation rates well above the comparison group's average. The graduation rates for Hazelwood's total population indicate that the city's residents are well-educated. Therefore, it is likely that the percentage of total residents enrolled in school in 1990 was negatively affected by the city's relatively low percentage of high school and college-aged residents.

The 1990 male labor force from Hazelwood (81.7% of men over 16) was highest of the comparison group cities. The female labor force (69.0% of women over 16) was also the highest of the comparison group. The 1990 unemployment rate of 3.9 percent was the second lowest of the comparison group's cities.

In 1990, median household (householder living alone or with non-family members) income ranged from $26,732 in Berkeley to $38,619 in Bridgeton (Hazelwood had the second highest level at $35,197) while median family (householder living with one or more persons related by birth, marriage or adoption) income ranged from $29,514 in Berkeley to

$45,938 in Bridgeton (again, Hazelwood had the second highest level at $40,757). The city's 4.5 percent of persons below the 1990 poverty level was significantly less than the comparison group's average of 8.8 percent. Social characteristics are summarized in Table 4.

Table 3
Population Characteristics

	Hazelwood	Ferguson	Bellefontaine Neighbors	Berkeley	Bridgeton	Overland	University City
Population							
1970	14,082	28,759	14,084	19,743	19,992	24,819	47,527
1980	13,098	24,549	12,082	15,922	18,445	19,620	42,690
1990	15,324	22,286	10,922	12,450	17,779	17,987	40,087
Change in Population							
1970-1980	-8.1%	-14.6%	-14.2%	-19.4%	-7.7%	-20.9%	-10.2%
1980-1990	+17.0%	-9.2%	-9.6%	-21.8%	-3.6%	-8.3%	-6.1%
1970-1990	+8.8%	-22.5%	-22.5%	-36.9%	-11.1%	-27.5%	-15.7%
Average Household Size							
1970	3.15	3.22	3.06	3.51	3.33	3.20	2.80
1980	2.55	2.63	2.57	3.04	2.77	2.64	2.54
1990	2.41	2.52	2.35	2.90	2.54	2.50	2.40
Change in Household Size							
1970-1980	-19.0%	-18.3%	-16.0%	-13.4%	-16.8%	-17.5%	-9.3%
1980-1990	-5.5%	-4.2%	-8.6%	-4.6%	-8.3%	-5.3%	-5.5%
1970-1990	-23.5%	-21.5%	-23.2%	-17.4%	-23.7%	-21.9%	-14.3%

Source: U.S. Census

Table 4
1990 Social Characteristics

	Hazelwood	Ferguson	Bellefontaine Neighbors	Berkeley	Bridgeton	Overland	University City
Enrolled in School	24.5%	25.5%	19.8%	32.9%	23.9%	48.0%	55.8%
High School Graduates	82.5%	77.0%	66.4%	71.5%	81.3%	70.0%	83.6%
College Graduates	20.2%	16.8%	11.7%	8.2%	23.3%	10.8%	41.3%
Male Labor Force	81.7%	74.2%	62.4%	76.6%	77.9%	75.2%	60.9%
Female Labor Force	69.0%	59.0%	48.0%	66.0%	61.9%	59.0%	65.0%
Unemployment	3.9%	6.5%	5.0%	11.9%	3.0%	6.3%	6.4%
Median Household Income	$35,197	$29,450	$31,726	$26,732	$38,619	$28,727	$32,150
Median Family Income	$40,757	$33,359	$37,930	$29,514	$45,938	$32,917	$39,067
Persons below Poverty	4.5%	6.4%	3.5%	15.5%	2.9%	8.3%	12.8%

Source: 1990 U.S. Census

ECONOMIC CHARACTERISTICS

The overall structure of Hazelwood's employment in 1990 was fairly similar to that of the comparison group. The industry employing the largest percentage of Hazelwood residents in 1990 was manufacturing, which employed 27.1 percent of the city's labor force. The second largest provider of jobs was retail trade, which provided 17.5 percent of the jobs for the city's labor force. Transportation and utilities industry firms were the third largest provider of jobs, employing 10 percent of Hazelwood's labor force.

The percentage of Hazelwood residents employed in manufacturing, retail trade, finance, insurance and real estate was higher than the comparison group's average. The percentage of Hazelwood residents employed in agriculture, transportation and other utilities, wholesale trade, services and education was average for the comparison group.

Hazelwood was below the comparison group's average in construction and health.

The types of occupations held by Hazelwood residents in 1990 were also similar to the comparison group. Hazelwood had a high percentage of residents employed in management, professional/technical and administrative occupations. The percentage of the city's residents employed as farmers and craftsmen was average for the comparison group. The percentage of Hazelwood's residents employed in business services and as operators was below the comparison group's average for those occupations. Work industries and occupations are summarized in Table 5.

Table 5
1990 Work Industry and Occupation

	Hazelwood	Ferguson	Bellefontaine Neighbors	Berkeley	Bridgeton	Overland	University City
Employment by Industry							
Agriculture	0.9%	0.7%	0.7%	0.7%	0.9%	1.0%	0.4%
Construction	3.8%	6.1%	5.3%	3.5%	5.1%	7.2%	1.8%
Manufacturing	27.1%	21.5%	21.2%	25.6%	23.5%	23.9%	15.3%
Transport/ Utilities	10%	10.2%	12.7%	11.2%	10.1%	8.4%	7.1%
Wholesale Trade	5.4%	5.1%	6.4%	3.3%	6.0%	7.5%	4.1%
Retail Trade	17.5%	5.1%	19.8%	15.7%	19.1%	19.4%	14.3%
Finance, Insurance, & Real Estate	8.2%	7.7%	7.4%	6.8%	7.6%	7.3%	8.0%
Services	8.8%	9.7%	6.6%	11.1%	7.7%	10.2%	9.3%
Health	5.6%	8.3%	8.7%	8.6%	8.1%	6.7%	14.8%
Education	8.3%	8.5%	5.7%	9.0%	7.2%	4.9%	19.7%
Public Admin.	4.3%	3.6%	5.4%	4.7%	4.7%	3.3%	5.2%
Occupation by Employment Category							
Managers	15.3%	12.7%	14.4%	8.3%	16.1%	11.4%	14.5%
Prof./Tech.	22.2%	21.0%	16.2%	12.2%	22.4%	13.4%	36.6%
Sales	11.6%	12.2%	10.1%	8.8%	14.0%	10.9%	10.5%
Admin/Sec	23.4%	21.8%	25.5%	26.7%	23.0%	25.6%	16.6%
Services	11.3%	12.9%	12.7%	22.1%	10.2%	14.9%	12.4%
Farming	0.6%	0.4%	0.3%	0.9%	0.6%	0.6%	0.3%
Craftsmen	10.6%	12.4%	14.4%	9.7%	9.6%	14.8%	4.0%
Operators	5.0%	6.5%	5.9%	11.2%	4.0%	8.4%	5.1%

Source: 1990 Census

Urban Design Element

VISUAL QUALITY

The appearance of a city makes a strong statement about the community, its residents, its institutions and its businesses. If the city appears dirty, unkempt or untidy, that perception can be transferred to its residents and businesses. While a clean, orderly and well kept city is desirable, it is quite difficult to ensure that all portions of a city are maintained in such a manner. In 1959, Kevin Lynch, a prominent architect and urban designer, observed:

> A beautiful and delightful city environment is an oddity, some would say an impossibility. Not one American city larger than a village is of consistently fine quality, although a few towns have some pleasant fragments. It is hardly surprising, then, that most Americans have little idea of what it can mean to live in such an environment. They are clear enough about the ugliness of the world they live in, and they are quite vocal about the dirt, the smoke, the heat, and the congestion, the chaos and yet the monotony of it. But they are hardly aware of the potential value of harmonious surroundings, a world which they may have briefly glimpsed only as tourists or as escaped vacationers. They can have little sense of what a setting can mean in terms of daily delight, or as a continuous anchor for their lives, or as an extension of the meaningfulness and richness of the world.

Lynch described five key components of city image: Paths, Edges, Nodes, Districts and Landmarks. These components are described below with their application to Hazelwood.

URBAN DESIGN ELEMENTS

Paths

Paths are the channels along which people move. They include streets and highways, transit lines, walkways and railroads. In Hazelwood, I-270, Lindbergh Boulevard and to some extent I-170 are the major paths. For most people, paths are the predominant city elements, particularly for people who know the city well.

Edges

Edges are linear elements which include boundaries and linear breaks in continuity such as shorelines, railroad lines, and edges of development. In Hazelwood, the steep slope between the Missouri River Floodplain and the bluffs overlooking the floodplain is an edge. Another significant edge is the Missouri River. For some observers, I-270 might seem to be more of an edge than a path because it divides the city into two portions.

Nodes

Nodes are points or strategic spots in the city which an observer may enter and which are the focus of travel. They may be junctions, places of a break in transportation or the nodes may simply be concentrations which gain their importance from being the condensation of some use or physical character. A node could be a particular intersection and the prominent land uses at the intersection.

Districts

Districts are relatively large sections of a city which are conceived of having two-dimensional extent. Individuals can enter a district mentally and describe common identifying characteristics of the district. Districts are identifiable from the inside and used for exterior reference if visible from the outside. A neighborhood could be considered a district.

Landmarks

Landmarks are a type of point reference. They are usually a rather simply defined object such as a building, large sign, or a hill. In many cities, landmarks are prominent churches, high schools, a particularly large and memorable sign or billboard, or a significant hill. Landmarks gain importance from a distance. For example, a church steeple may be seen from many blocks away.

URBAN DESIGN ELEMENTS IN HAZELWOOD

Some of the significant urban design elements in Hazelwood are listed below and graphically depicted in Figure 3.

Paths:
- I-270
- Lindbergh Boulevard
- I-170
- 370

Paths (cont'd):	Aubuchon Road Charbonier Road Dunn Road Fee Fee Road Hanley Road Howdershell Road McDonnell Boulevard Missouri Bottom Road Teson Road Utz Lane
Edges:	Missouri River Missouri River Bluff Norfolk Southern Railroad
Nodes:	Parks Village Square
Districts:	Brown Campus Burke City Cedar Brook Coachlight Riverwood Estates Riverwood Place Riverwood Trails Robertson Ville Maria
Landmarks:	Boeing Aircraft Civic Center East Community Center Ford Assembly Plant Hazelwood City Hall Hazelwood West Junior and Senior High Schools Lambert Field Mallinkrodt St. Stanislaus Seminary

GOALS AND OBJECTIVES

GOAL: Development and redevelopment of the city should be accomplished in an attractive manner maintaining consistency with the scale of existing development.

Objective: The visual impact of new commercial and industrial uses shall be compatible with adjacent residential areas.

Objective: New development shall provide appropriate landscaping to provide shade, reduce glare, and maintain the attractive appearance of the city.

Objective: Signage shall be provided in a manner to be attractive and minimize the unnecessary proliferation of signs.

Objective: New buildings shall be constructed out of appropriate materials to maintain a pleasing appearance.

URBAN DESIGN PLAN

Hazelwood contains a number of visually pleasing areas and many lovely buildings. The maintenance of these buildings and areas and the expansion of certain qualities of these areas into other parts of the city is highly desirable. Maintenance and enhancement of the city's visual image can be achieved by various positive actions including landscaping and buffering to minimize visual impact, tree protection, appropriate control of signage, and establishing design guidelines for certain areas of the city.

Visual Impact of New Commercial and Industrial Uses

Attractive residential areas can be maintained by ensuring that adjacent city, public, commercial and industrial areas provide landscaping and buffering between their property and that of the residential areas. New developments should also provide landscaping to enhance the appearance of their buildings.

Tree Conservation

The City Council annually budgets money for new trees and the removal of dead trees. Planting of new street trees throughout the city needs to be continued. The City should attain the designation Tree City USA. The only item the city lacks to attain this designation is a tree ordinance and application. New development should provide appropriate landscaping to provide shade, reduce glare, and maintain the attractive

appearance of the city. A tree conservation ordinance should be considered to prohibit the unnecessary removal of trees when development occurs and to ensure that appropriate landscaping is provided. The city should maintain a list of appropriate street trees and require all new development to install trees from the approved list. Such trees should be primarily deciduous hardwood trees that have a clear trunk height of six feet and which are reasonably disease resistant. These street trees should be a minimum of two and one-half inch caliper size when installed and selected from the following species:

1) Columnar Norway Maple *(Acer platanoides erectum (columnare))*
2) Red Maple *(Acer rubrum)*
3) Hedge Maple *(Acer campestre)*
4) Red Oak *(Quercus rubra)*
5) Willow Oak *(Quercus phellos)*
6) Pin Oak *(Quercus palustris)*
7) White Ash *(Fraxinus americana)*
8) Seedless Green Ash *(Fraxinus pennsylvanica 'Marshall Seedless')*
9) Thornless Honey Locust *(Gleditsia triacanthos 'inermis')*
10) Silver Linden *(Tilia tomentosum)*
11) Little Leaf Linden *(Tilia cordata)*
12) Ironwood *(Ostrya virginiana)*
13) Japanese Zelkova *(Zelkova serrata)*
14) Ginkgo *(Ginkgo biloba)* (male varieties only)
15) Callery Pear *(Pyrus calleryana)*

Signs

Signs are a critical element in the urban environment. They are necessary for traffic control, the identification of buildings of business, commerce and institutional use, and the dissemination of political and real estate messages. They can, however, be so numerous or so large as to cause visual blight. The city should continue its reasonable regulation of signs. The city does, however, need to revise its sign regulations to stress content neutral regulations and ensure that political and temporary election sign regulations meet federal court guidelines. Content neutral sign regulations are designed to regulate the time, place and manner of signs and do not regulate the message.

Billboards

A concern among many Missouri municipalities is the regulation of billboards. Missouri statutes limit the ability of cities to regulate billboards. Currently, cities are able to regulate the height, spacing and lighting of billboards if the city engineer is a member of the planning commission. Cities may not prohibit billboards in commercial and industrially-zoned areas within 660 feet of the right-of-way of an interstate or primary

highway.

Absent appointing the city engineer to the plan commission, the city currently has little discretion in regulating billboards along interstate and primary highways. Potential strategies to discourage additional billboards could include acquiring scenic easements along such rights-of-way to preclude erection of billboards or rezoning vacant portions of land adjacent to the rights-of-way to a residential zoning classification. If the city desires to regulate billboards, professional assistance should be sought through a competent city planner to work with the city attorney.

Urban Design Guidelines

Certain aspects of urban design guidelines have been established for certain areas of the city. The city needs to review these guidelines and consider establishing such guidelines city-wide. Of particular interest is preparing lists of appropriate building materials for various land uses and for use in certain portions of the city. For example, many types of metal are not appropriate for areas near the airport because of the way they reflect light. The Robertson area has been specifically identified as an area where design guidelines are desirable as that area redevelops for industrial uses.

Significant Architectural Features

Churches, institutions of higher education, and significant buildings housing commerce should be allowed buildings with substantial architectural features. Such architectural features include steeples, spires, domes, cupolas and towers. These features assist in making these buildings stand out as landmarks and promote interest in the architectural landscape. A city comprised of flat roofs and short buildings with low pitched roofs is monotonous and tends to blend in with other suburbs.

Entranceways

While not specifically identified by Kevin Lynch as urban design features, many urban designers and architects feel that entranceways are a key element to a city or an area of the city. Entranceway improvements are proposed at Lindbergh Boulevard at the north city limits to improve the visual impression as individuals enter the city.

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 3

URBAN DESIGN ELEMENTS

- Paths
- Edges
- Districts
- Landmarks
- Nodes

MISSOURI RIVER
CHARBONIER PARK
TESON
AUBUCHON
STATE HWY 370
MISSOURI RIVER BLUFF
DURN
COMMUNITY CENTER
PARK
HAZELWOOD WEST
VILLA MARIA
PARKS
CEDAR BROOK
INTERSTATE 270
MALLINKRODT
PARK
BROWN CAMPUS
CITY OF FLORISSANT
RIVERWOOD ESTATES
RIVERWOOD EST.
RIVERWOOD PLACE
ST. STANISLAUS SEMINARY
RIVERWOOD TRAILS
HOWDERSHELL
PARK
PARK
COACHLIGHT
PARK
PARK
CITY HALL
PARK
PARK
PARK
VILLAGE SQUARE
PARK
PARK
CIVIC CENTER EAST
CITY OF FLORISSANT
GRAHAM
PARK
FORD ASSEMBLY PLANT
INTERSTATE 170
HANLEY
PARK
PARK
BURKE CITY
FLORISSANT ROAD
VILLAGE OF CALVERTON PARK
CITY OF FERGUSON
CITY OF BERKELEY
LAMBERT FIELD
BOEING AIRCRAFT COMPANY
ROBERTSON
MISSOURI BOTTOM ROAD
CITY OF BRIDGETON
McDONNELL
LINDBERGH BLVD. (US HWY 67)
PAGE
N
2,600' 1,300' 0' 2,600'
SCALE IN FEET

HARLAND BARTHOLOMEW & ASSOCIATES

SAINT LOUIS, MISSOURI

Land Use Element

In preparing a land use plan for Hazelwood, the city began with an analysis of how land is used, what trends in land use characteristics occurred during the preceding decade, and what factors affect the use of land. The accompanying text discusses existing land use, land use trends and factors affecting development.

EXISTING LAND USE

The land use in and around Hazelwood was influenced by a number of natural and man-made factors. While the rolling hills in the area provide natural beauty and interest, other natural factors such as floodplains, sinkholes, wetlands and steep slopes tend to hinder urban development. Man-made conditions such as Lambert Airport and I-270 have also influenced development.

Hazelwood encompasses an area of approximately 17.2 square miles. Existing land uses consist of single-family and multi-family residences, commercial facilities, industrial development and public uses. Historically an agricultural area, there are still significant agricultural properties in the northwest portion of the city. There also is a large amount of undeveloped land in the city, although much of it is in floodplains. Existing land uses are depicted in Figure 4.

Residential Areas

Approximately one-half of the developed land in Hazelwood is devoted to residential uses. Housing opportunities in the city range from large two-story single-family homes to apartments while duplexes and townhouses are also available. After single-family homes, the predominant housing type is apartments. Apartment complexes are primarily concentrated near collector and arterial streets throughout the city.

Commercial and Industrial Areas

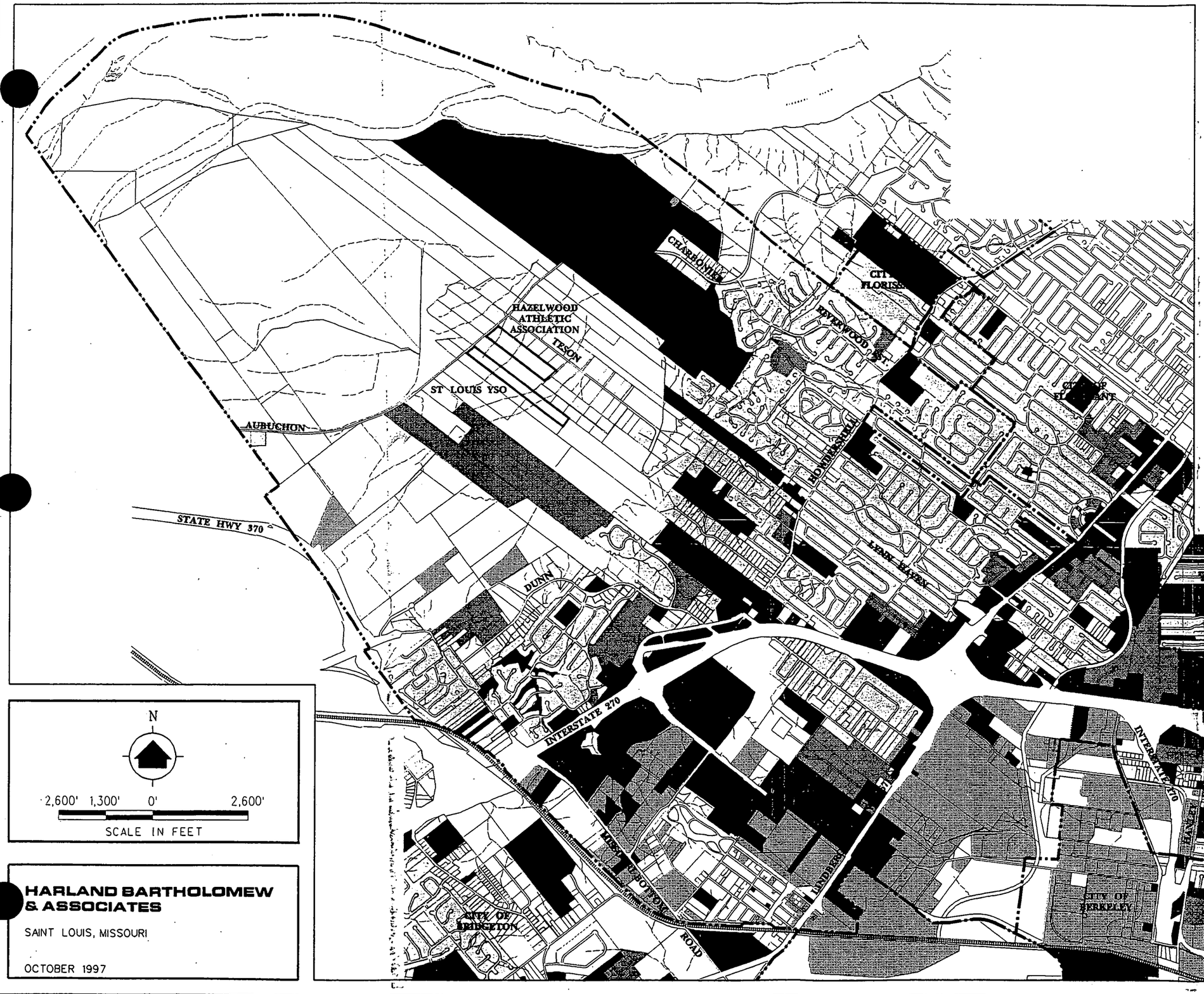
Hazelwood is home to more than 800 businesses. In the city, commercial uses are primarily located at I-270 interchanges and along Lindbergh Boulevard. There is a broad mix of retail and office commercial uses. A significant number of automobile dealers are located in the city along the I-270 corridor.

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 4

EXISTING LAND USE

- Single-Family Residential
- Multiple-Family Residential
- Commercial
- Industrial
- Public/Semi-Public
- Parks
- Recreation
- Sod Farm
- Vacant/Undeveloped



N

2,600' 1,300' 0' 2,600'

SCALE IN FEET

HARLAND BARTHOLOMEW & ASSOCIATES

SAINT LOUIS, MISSOURI

OCTOBER 1997

Hazelwood has a number of industrial uses including the Ford Assembly Plant, several Boeing facilities, Hazelwood Farm Bakeries, bioMerieux Vitek and Mallinckrodt Medical. A number of other industrial facilities also are located in the city including storage businesses, light manufacturing and research and development facilities.

Public and Semi-Public Areas

Public and semi-public uses in Hazelwood are scattered throughout the city. These uses include community facilities, schools and churches. Existing community facilities include the city hall complex, the city's two fire stations, the city's two recreation centers, and the Public Works garage. Hazelwood West Senior and Junior High School, and Russell, Armstrong and McNair elementary schools in the Hazelwood School District are located in the city: Several religious denominations are represented in the city by over 20 churches.

Parks

Hazelwood and St. Louis County provide a large number of parks within the city. City parks include Aubuchon, Birchwood, Brookes, Friendship, Harry S. Truman, Howdershell, Little White Birch, Musick, Pershall, Queen Ann, Red Bud, Rock Pointe, St. Cin, White Birch, Wildflower and Wildlife parks. A portion of St. Stanislaus Park is leased to and managed and maintained by the Missouri Department of Conservation. The remaining portion of the park is under the jurisdiction of St. Louis County but is planned to be leased to and managed and maintained by the Missouri Department of Conservation in the future.

Vacant/Undeveloped Lands

Vacant and Undeveloped Lands include lands which generally have no buildings. However, some of these lands, particularly in the Missouri Bottoms, are devoted to agricultural use and have agricultural buildings and farm houses. Vacant and undeveloped lands in the Missouri Bottoms also include a sod farm and some recreational uses including soccer and ball fields.

FACTORS AFFECTING DEVELOPMENT

The consideration of factors affecting development is essential prior to the preparation of a land use plan. An inventory of these factors provides a framework to develop the most efficient and prudent assignment of future land uses to support future development. Two types of factors affect the use of land: natural features and man-made features. Terrain is an example of a natural feature that may influence development. The presence of infrastructure and airport noise contours are man-made factors that may affect

the use of land.

Physical aspects of the city's natural and man-made environment significantly affect small portions of Hazelwood. This is partly due to the fact that the much of the land in the city is already devoted to urban land uses. Physical factors including natural features and man-made features are discussed in this analysis. Each factor in its own way constrains urban-type development.

Natural Features

The natural resources of an area can have significant impacts on future development. For example, natural features often cause significant limitations in the construction of buildings, roadways, utility systems, and other structures. Most of the easily developable land in St. Louis County has already been developed. Remaining undeveloped land includes floodplains (which includes floodways and flood fringe areas), wetlands, and areas with steep slopes. The primary natural features that constrain development in the Hazelwood area are steep slopes and floodways.

Steep Slopes. Steep slopes in the city predominate along the bluff adjacent to the Missouri River floodplain. Lands immediately east and south of the bluff also contain areas which have steep slopes. The city should be concerned with areas where the slope exceeds ten percent. It is difficult for large trucks to traverse streets that exceed an eight percent slope and minor streets should not have a slope exceeding ten percent.

Floodplains. Historically, with the exception of areas within the Coldwater Creek floodplain, the major portion of the area within the city's corporate limits has been outside of any floodplain. This changed with the annexation of a large area along the Missouri River. Large areas within the northwest portion of the city are in the Missouri River floodplain and are subject to flood hazards. These areas, which are located within the 100-year floodplain, are identified on the development constraints map.

The significance of floodplains includes the fact that of the remaining undeveloped land within St. Louis County, approximately one-third is within the floodplains of the Mississippi, Missouri, and Meramec Rivers. Effective measures to address floodplain management was underscored following the Midwest Flood of 1993 when the Mississippi River and many of its tributaries flooded. Within St. Louis County, more than 1,000 homes and 450 businesses were either temporarily or permanently displaced as the Mississippi, Missouri, and Meramec Rivers overflowed their banks.

Floodways Within floodplains, there are areas designated as floodways. These areas include the channel of a river or watercourse and the adjacent land areas that must be reserved in order to discharge the 100-year flood without cumulatively increasing the water

surface elevation more than one foot at any point. Construction within floodways is prohibited. Therefore, they represent a significant constraint to development.

Wetlands. Section 404 of the U.S. Clean Water Act defines wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." Based on this definition, an analysis of low lying areas of Hazelwood was conducted to determine the existence of wetlands.

Man-Made Features

The man-made features of an area also may constrain future development. In the Hazelwood area, the primary man-made features that constrain development are high noise levels associated with Lambert-St. Louis International Airport operations.

Areas Subjected to High Levels of Aircraft Noise. Aircraft noise is comprised of a series of separate events when aircraft overflights are followed by relative quiet periods between flights. The Federal Aviation Administration (FAA) requires aircraft noise impacts to be calculated over a continuous period of time, such as a 24-hour period. Sound levels are measured in Day-Night Average Sound Levels (DNL) which represent the average sound levels over a 24-hour period. The DNL metric takes into account quiet periods as well as aircraft overflights, and adds a penalty to flights occurring at night. The DNL serves to identify those areas where the average daily noise is most significant. The DNL noise levels are mapped as airport noise contours on a noise exposure map.

According to the FAA, certain land uses may be determined to be incompatible with the aircraft noise levels greater than 65 DNL. Table 6 includes the compatibility of certain land uses with different levels of aircraft noise.

As outlined by the FAA, Lambert Airport has determined that residential use of properties within the 75 DNL noise contour is undesirable. Properties within the 75 DNL noise contour in Hazelwood are located in the southwest portion of the city. These properties are shown on the development constraints map as indicated by the 1991 DNL noise exposure map.

Significant Factors Affecting Development

The significant factors affecting development in the Hazelwood area are steep slopes, floodways and areas subjected to high levels of aircraft noise. The locations of these factors are depicted in Figure 5.

Table 6
Airport Land Use Compatibility

Land Use	Day-Night Average Sound Level (DNL)				
	Less than DNL 65	DNL 65-70	DNL 70-75	DNL 75-80	Greater than DNL 80
Residential	Yes	Yes[1]	No[1]	No	No
Public Facilities	Yes	Yes[1]	Yes[1]	No	No
Commercial	Yes	Yes	Yes[1]	Yes[1]	No
Industrial	Yes	Yes	Yes[1]	Yes[1]	No[1]
Recreation	Yes	Yes[2]	Yes[2]	No	No

[1] Can be compatible if appropriate sound-level reduction measures are taken.
[2] Certain uses are excluded.
Source: *Lambert Part 150 Noise Compatibility Program Update*

AIRPORT COMPATIBILITY

The City of St. Louis is in the process of updating its Part 150 Noise Compatibility Program for Lambert-St. Louis International Airport. This update will consider three types of noise reduction strategies: modifications to aircraft operations, remedial land use measures, and compatible land use planning. First, the noise compatibility program will evaluate actual operational strategies to find ways to reduce aircraft noise impacts. Operational strategies could include changes to airfield use and flight patterns. The effectiveness of current operational noise reduction procedures also will be studied as part of this analysis.

The noise compatibility program will also evaluate the need for remedial measures to handle areas where aircraft noise cannot be reduced by operational measures. A pilot program has been developed to compensate Hazelwood residents within the 75 DNL noise contour for the noise pollution generated by aircraft approaching and departing from Lambert Airport. It is a voluntary program which will offer three options to the homeowners in the program area: 1) outright purchase of air avigation easements; 2) acoustical treatment of homes; and 3) sales assistance to those who wish to sell which will give financial incentives to the buyer. In addition, several residential properties in

southwestern Hazelwood will be purchased by the City of St. Louis Airport Authority.

Finally, the noise compatibility program will examine the need for compatible land use planning and land use control strategies. The municipalities in the airport area can use these strategies to promote future land uses that will be compatible with airport operations. For example, properties within the 75 DNL noise contour in Hazelwood may be designated for industrial land uses. Such a designation would encourage and accommodate the redevelopment of these properties to a use more compatible with airport operations.

The 1994 DNL noise exposure map was the most recent map available during the development of this plan. However, it should be noted that the DNL noise contours are expected to change due to the use of quieter aircraft, the increased number of takeoffs and landings, and the planned expansion of Lambert Airport. Noise levels in Hazelwood are expected to improve by 1999.

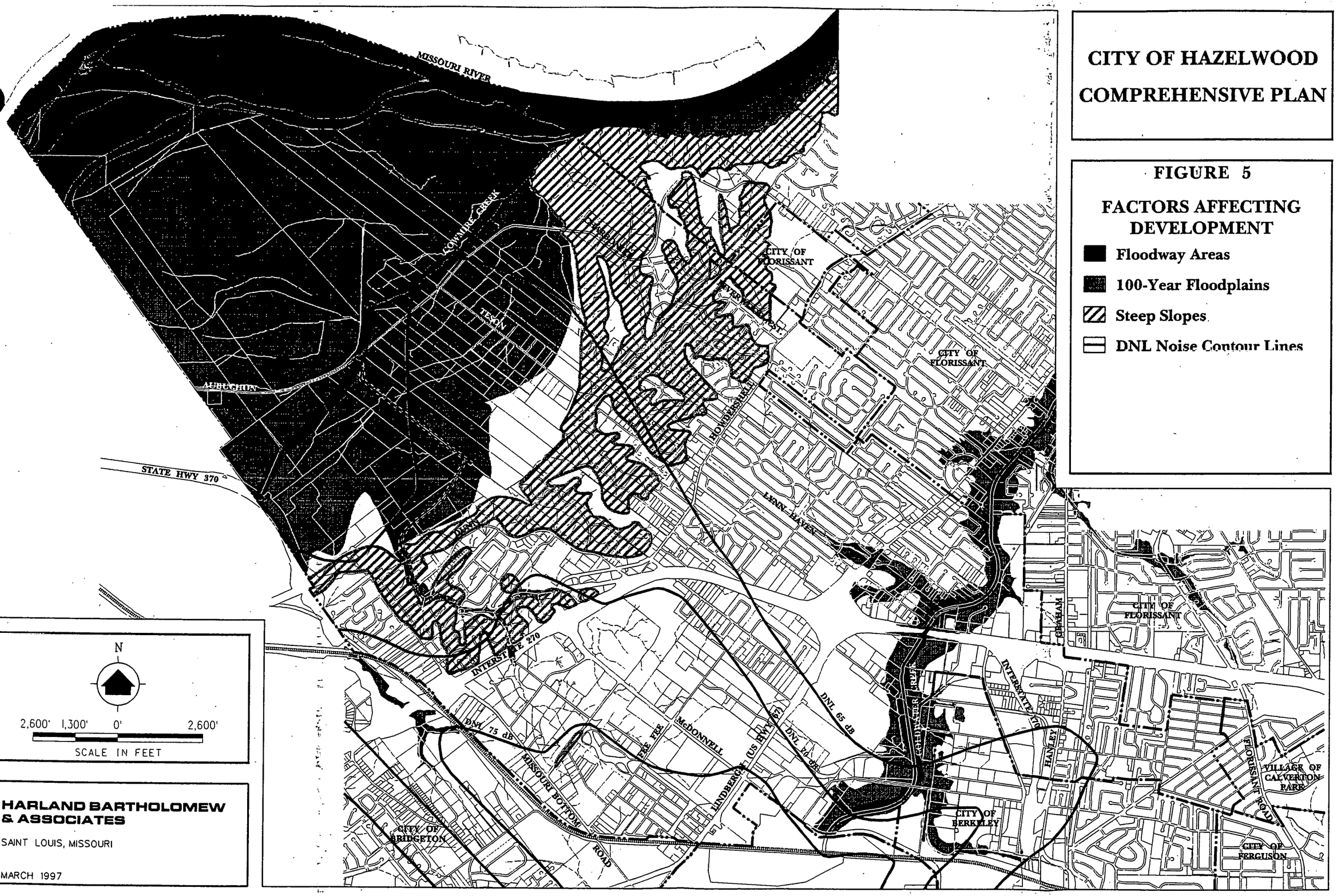
Much of the information contained in this section was obtained from *Plane Talk: Lambert Highlights, Issue 1* published by the City of St. Louis Airport Authority in Summer 1994.

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 5

FACTORS AFFECTING DEVELOPMENT

- Floodway Areas
- 100-Year Floodplains
- Steep Slopes
- DNL Noise Contour Lines



HARLAND BARTHOLOMEW & ASSOCIATES

SAINT LOUIS, MISSOURI

MARCH 1997

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GOALS AND OBJECTIVES

GOAL: Land in the city will be developed and redeveloped in a manner to compliment and be consistent with existing development patterns, providing additional residential, commercial, recreational and industrial land uses while maintaining green space.

Objective: Development of vacant land shall provide green space so as not to overcrowd the land with buildings and other impermeable surfaces and to provide a pleasant environment.

Objective: Areas of the city which are significantly impacted by airport noise shall be developed and redeveloped with land uses that are compatible with such noise levels.

Objective: The city's zoning ordinance and other land development regulations shall be amended to be consistent with this plan and provide for implementation of the plan.

Objective: Establishment of a levee district for the Missouri Bottoms area should be investigated to provide developable land.

Objective: Development of the Missouri Bottoms shall be concentrated in protected floodplains with adequate levies and outside of any floodways.

LAND USE PLAN

Introduction

A concept land use plan for the city was prepared for the city to serve as the basis for the land use plan. The concept plan was based on the following:

(1) The existing land use pattern, as documented in the Existing Conditions Report and Figure 4 of this plan;
(2) The factors affecting development map as documented in the Existing Conditions Report and Figure 5 of this plan; and
(3) The goals and objectives as revised by the Plan Commission.

Based on the concept land use plan reviewed by the Plan Commission, a land use plan for the city was prepared. Land use plan designations for all lands within the city are described in this section and are graphically depicted in the land use plan map in Figure 6. A land use

plan for unincorporated parts of St. Louis County which are adjacent to the city is graphically depicted in Figure 7. This land use plan in Figure 7 was prepared because of the possibility of the city annexing all or portions of these unincorporated areas in the future. The land use designations described below also apply to unincorporated areas adjacent to the city.

Floodway

That portion of the city located in the channel of the Missouri River, Coldwater Creek, Cowmire Creek, or other significant creek and depicted as floodway on the city's Flood Insurance Rate Maps (FIRM) are designated as Floodway. Development in the floodway will be limited to recreation facilities, conservation uses or infrastructure support facilities such as storm water management facilities. Permanent structures shall be strictly regulated in these areas.

Conservation

This land use designation includes areas within the 100-year floodplain, but outside the floodway, and areas with significant slopes. Development in these areas will be limited to agricultural, conservation, cultural, recreational use, very low-density residential development (densities not exceeding one dwelling unit per acre), and public utility uses. Residential development shall be concentrated in areas outside of the 100-year floodplain or elevated above the base flood elevation. Residential areas shall also avoid areas of extremely steep slopes.

Low-Density Residential

Low-Density Residential areas will primarily consist of single-family dwellings. The maximum residential density in these areas will not exceed five dwelling units per acre. This land use classification covers lands with few development constraints. In addition to traditional single-family detached dwellings, this area may also include single-family cluster developments and duplexes. Besides residential developments, this land use classification will include schools, churches, parks and similar institutional and recreational uses that are commonly found in residential areas.

Medium-Density Residential

Medium-density residential areas will include single-family detached dwellings, single-family attached dwellings, duplexes, and multiple-family housing as regulated by the city's zoning ordinance. This land use category is designed to accommodate densities of up to 12 dwelling units per acre, although average densities will average less than eight units per acre. In addition to residential dwellings, this land use classification will include

schools, churches, parks and similar institutional and recreational uses that are commonly found in residential areas.

Parks

Existing city and county park lands are indicated on the land use plan map. These lands shall be limited to park and recreation use and customary accessory activities. Beyond the existing parks owned by the city or county, the plan proposes the development of additional land located between St. Stanislaus County Park and Harry S. Truman Park as park land. This space would connect the two parks and provide for additional park land. Much of this land is owned by St. Louis County.

Public and Semi-Public Lands

Major concentrations of public and semi-public lands are identified on the land use plan map. These uses include major cemeteries, Hazelwood West Junior and Senior High School, city hall, elementary schools, and several other similar uses identified in the existing land use survey. Some existing public and semi-public lands are not depicted on the concept land use plan map because of their relatively small size.

Commercial

The commercial land use category is intended primarily for retail and office uses. This category will allow a broad range of retail uses from florists to new car dealers and will include many uses allowed in the city's commercial open display zoning district. Office uses will primarily consist of business and professional offices. Specific commercial land uses will be regulated by the city's zoning regulations.

Business

This classification is intended to allow a broad range of commercial and light industrial uses including large retail operations, research and development facilities, office-warehouse uses, light industrial and light manufacturing uses. The specific uses allowed in this category would be based on the underlying zoning classification. This land use classification is primarily located on the south side of and adjacent to I-270 and is intended to present a good image of the city to passing motorists.

Industrial

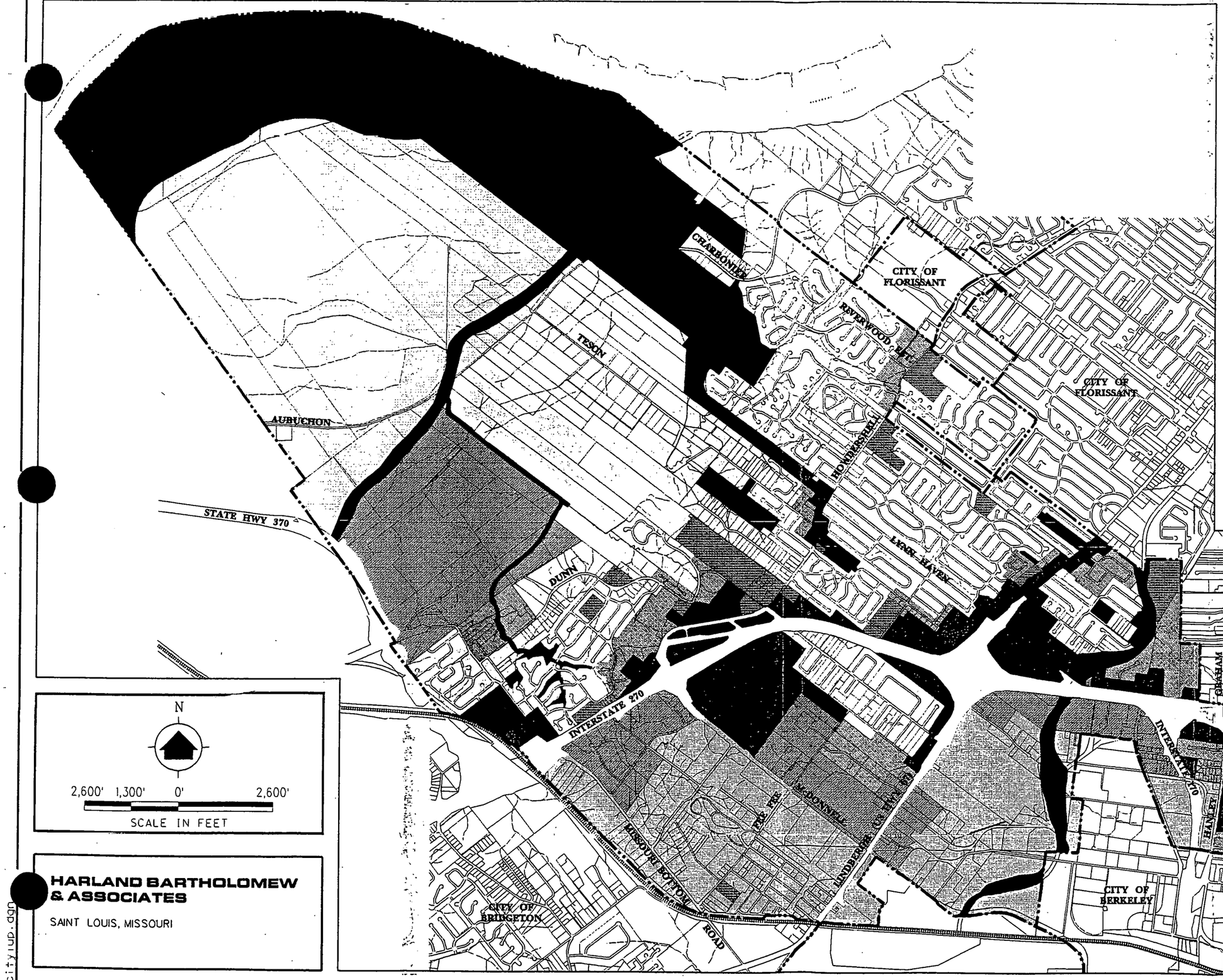
The industrial classification is designed to allow most light and general industrial uses as well as selected heavy industrial uses. This classification includes much of the existing industrially-zoned areas of the city. This classification is primarily for lands north

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 6
LAND USE PLAN FOR HAZELWOOD

LAND USE DESIGNATIONS

- Floodway
- Conservation
- Low-Density Residential
- Medium-Density Residential
- Parks
- Public/Semi-public
- Commercial
- Business
- Industrial



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CITY OF HAZELWOOD

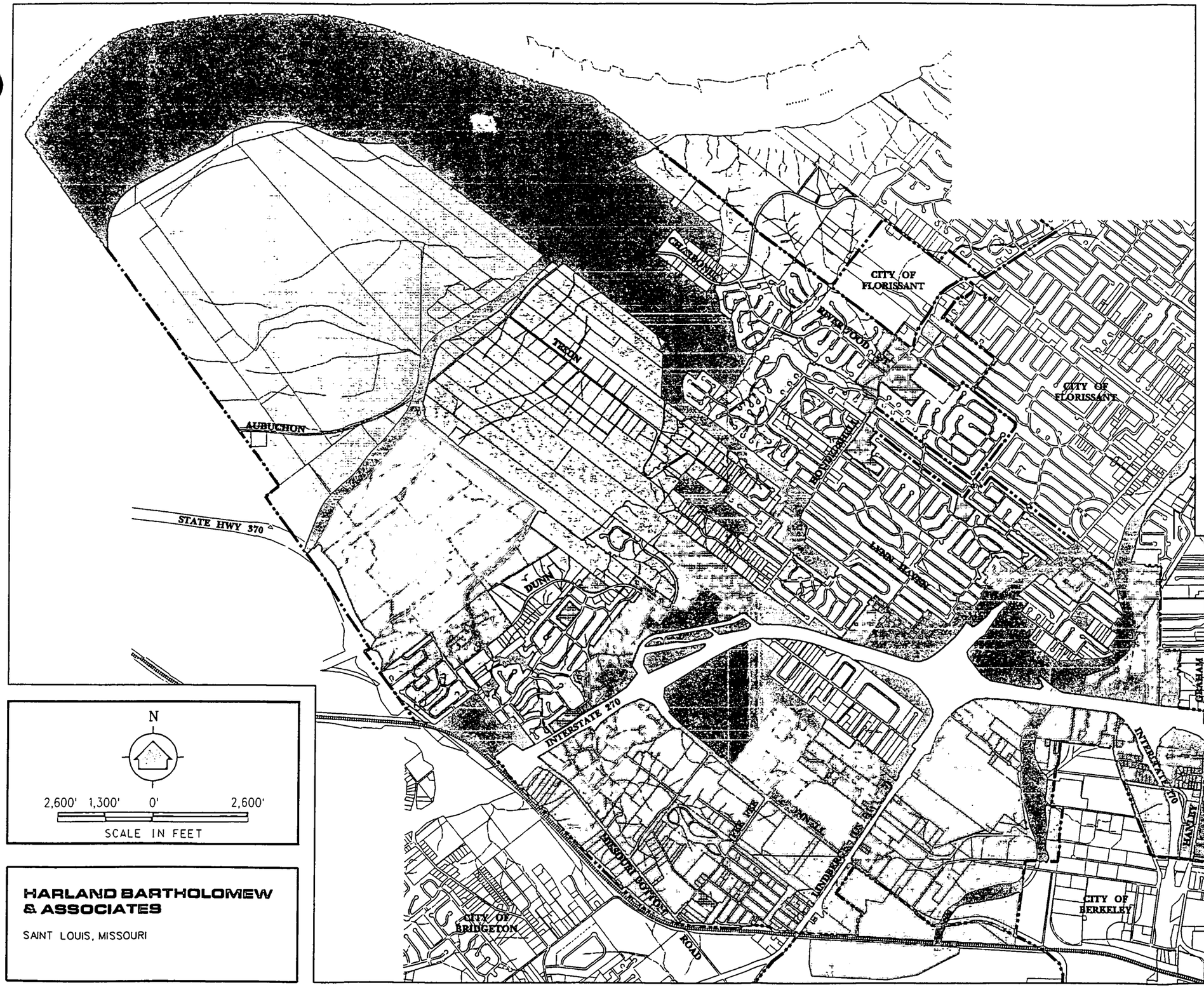
COMPREHENSIVE PLAN

FIGURE 7

LAND USE PLAN FOR SURROUNDING AREA

LAND USE DESIGNATIONS

- Floodway
- Conservation
- Low-Density Residential
- Medium-Density Residential
- Parks
- Public/Semi-public
- Commercial
- Business
- Industrial



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of the airport and south of I-270.

Of the areas designated industrial, an area of particular concern is the Robertson area. This area historically consisted primarily of single-family residences, but is proposed for industrial use. Since this area is characterized by many small lots, some special land development regulations are needed to guide redevelopment of this area. Minimum land assembly requirements, limited access to major streets and design guidelines are all desirable for this area. It is recommended that access to individual lots be limited, particularly along Lindbergh and Fee Fee, and that traffic be directed to Summit Avenue for access to the arterial street system.

Fulfillment of Land Use Objectives

Provisions of the land use plan to fulfill objectives outlined in this element are discussed below. In some cases, specific provisions of the plan in relation to an objective are discussed, and in some cases actions necessary to implement the plan are discussed.

Provision of Green Space

An objective of this plan is to ensure that future development provides green space so that land does not appear to be overcrowded with buildings and impermeable surfaces. The city's zoning ordinance needs to be reviewed to ensure that there are adequate limitations on building coverage and site coverage in each zoning district. The provision of open space and landscaping on each lot in the city needs to be ensured.

Airport Noise

Another objective of this plan indicates that areas of the city which are significantly impacted by airport noise should be developed for land uses which are compatible with that noise. Figure 5 shows areas in the city which are currently impacted by airport noise. Table 6 indicates appropriate land use activities for various noise levels. Table 7 provides an analysis of recommended land use designations for various noise levels and the appropriateness of those land uses. As indicated in Table 7, the land use plan recommendations are consistent with land uses which are appropriate based on noise levels. Most of the areas recommended for residential use which is impacted by airport noise is already developed for residential use. These areas should be encouraged to install sound proofing in any new dwellings or remodelling of existing dwellings.

Zoning Ordinance Amendments

One objective of the plan is to amend the city's zoning ordinance and other land development regulations to be consistent with this plan and to assist in its implementation.

It is recommended that after adoption of the final comprehensive plan, a list of land use related recommendations be prepared and then compared to existing city regulations. This would serve as the basis for identifying need amendments to the city's land development related regulations. The city's current zoning district map is included as Figure 8.

Table 7
Proposed Land Use/Noise Compatibility Matrix

Day-Night Average Sound Level (DNL)	Appropriate Land Uses	Existing Land Uses	Proposed Land Uses
75-80 DNL	Commercial[1] Industrial[1]	Residential Public Facilities Commercial Industrial	Business Industrial
70-75 DNL	Residential[2] Public Facilities[1] Commercial[1] Industrial[1] Recreation[3]	Residential Public Facilities Commercial Industrial Recreation	Residential Public Facilities Commercial Industrial Recreation
65-70 DNL	Residential[1] Public Facilities[1] Commercial Industrial Recreation[3]	Residential Public Facilities Commercial Industrial Recreation	Residential Public Facilities Commercial Industrial Recreation

[1]Can be compatible if appropriate sound-level reduction measures are taken.
[2]Not normally appropriate, but allowed if sound-level reduction measures are taken.
[3]Certain recreation uses are excluded.

Levee District

Investigating the establishment of a levee district for the Missouri Bottoms area is an objective of the plan. The purpose of this levee district would be to ensure that developable land in the Bottoms is protected from seasonal and catastrophic flooding. The city needs to consider establishing a district prior to allowing substantial development in the floodplain.

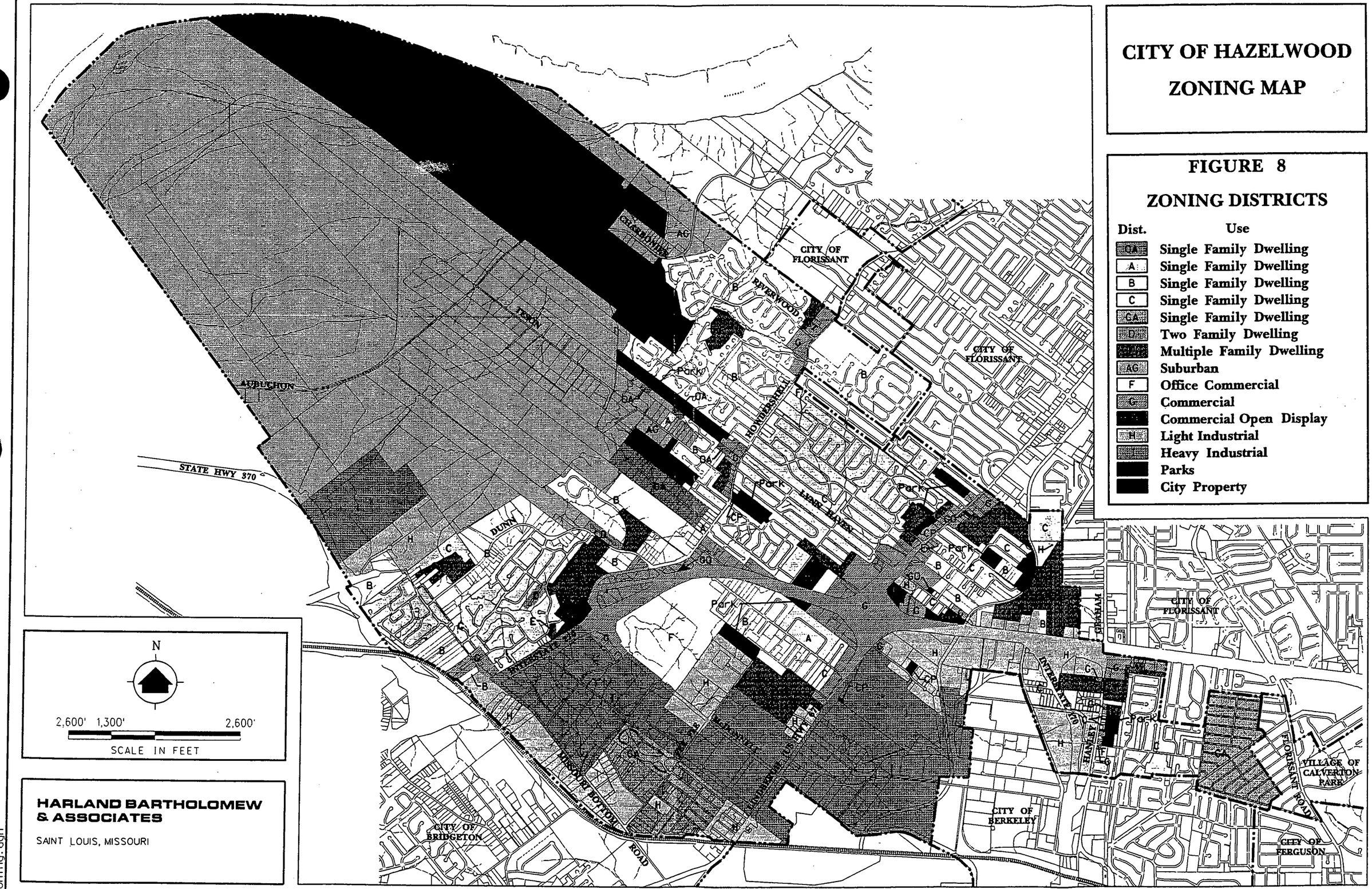
CITY OF HAZELWOOD

ZONING MAP

FIGURE 8

ZONING DISTRICTS

Dist.	Use
OA	Single Family Dwelling
A	Single Family Dwelling
B	Single Family Dwelling
C	Single Family Dwelling
CA	Single Family Dwelling
D	Two Family Dwelling
E	Multiple Family Dwelling
AG	Suburban
F	Office Commercial
G	Commercial
GO	Commercial Open Display
H	Light Industrial
I	Heavy Industrial
	Parks
	City Property



HARLAND BARTHOLOMEW & ASSOCIATES

SAINT LOUIS, MISSOURI

zoning.dgn

Development of Missouri Bottoms

A related objective indicates that development of the Missouri Bottoms needs to be concentrated in protected floodplains with adequate levies and outside of any floodways. The land use plan designates the floodways as areas that will not be developed for urban uses. However, much of the Missouri Bottoms is designated for conservation, low-density residential and business uses which would allow much more intense development than currently exists. Provisions need to be made to ensure these areas have adequate levies and flood protection.

Much of the Missouri Bottoms is designated for low-density residential uses. Based on historical development patterns in this area, and concerns about potential flooding of this area based on memories of the 1993 flood, it is unlikely that all of this residentially-designated property will develop for residential uses over the 20 year life of this plan. If there is considerable demand for business uses in the Missouri Bottoms area, the city should consider expanding the area designated as business into areas currently designated for low-density residential use. This would require an amendment to the comprehensive plan. It is not anticipated that such amendment would be necessary over the next five years (through the year 2002). Beyond that point, it is difficult to predict what the demand for business and residential use will be in the Missouri Bottoms. If more business land is needed than currently anticipated, it would be appropriate to amend the plan to expand the currently designated business area.

Economic Development Element

INTRODUCTION

Many individuals consider Hazelwood a residential community and clearly that has been a major focus of the city throughout its history. However, Hazelwood has a broad mix of land uses including residential, commercial, institutional, park, and industrial land uses. It must be realized that residential land use generates small amounts of tax revenue. Hazelwood derives much of its revenue from sales tax and utility gross receipts taxes. Another significant source of revenue is property tax. Residential land uses generate small amounts of property taxes and no sales tax. In addition, utility gross receipts are subject to major variances based on weather conditions. For example, thc Winter of 1994-95 was very mild and there was a subsequent decline in utility gross receipts. In order to generate revenues to support city government expenditures in the future, it is necessary to provide areas in the city for commercial and industrial activities which will generate sales tax and property taxes.

Commercial Areas

Existing commercial areas in the city are concentrated in the Lindbergh Boulevard corridor and near the I-270 interchanges. Small areas of neighborhood commercial developments are located on Howdershell Road and Hanley Road. A significant commercial use in Hazelwood is auto-related commercial uses including new car, truck and recreational vehicle sales, auto parts and auto repair shops. Other significant commercial uses are furniture sales and office facilities for a number of major companies including Boeing Aircraft, Mallinckrodt Medical, Inc., and bioMerieux Vitek.

Industrial Areas

Industrial areas in the city are primarily located south of I-270, along McDonnell

and Lindbergh Boulevards. The Ford assembly plant and the manufacturing facilities of bioMerieux Vitek comprise some of the more significant uses. Light industrial uses predominate along Hanley Road, I-170, and Missouri Bottom Road. Research and development industries are located along McDonnell Boulevard, particularly in and around the Brown Campus. Major facilities operated by the Boeing Company are located immediately south of the city, south of the McDonnell Boulevard and Lindbergh Boulevard intersection.

Economic Development Strategic Plan

The city hired an Economic Development Coordinator in May of 1996. One of the responsibilities of this individual is to develop and maintain a strategic plan for economic development of the city. This plan consists of the following:

Existing Business and Industry Search. This task includes regular visits to local businesses to keep apprised of their concerns and potential needs.

Community Documentation. This effort consists of maintaining community statistics, creating marketing materials, and keeping specifications on available buildings and land. As part of this work, a Web Page is maintained on the internet. In addition, City Council meetings are televised on cable television.

Establishing Key Partnerships. Relationships are maintained with local utilities, site consultants, banks, commercial realtors, Chambers of Commerce and staff from the Missouri Department of Economic Development.

Prospecting. A number of activities have been initiated to prospect for new businesses. These activities include gathering target industry lists and advertising in site selector and industry magazines. Also planned are attendance at annual trade shows focusing on identified target industries.

GOALS AND OBJECTIVES

GOAL: Sufficient economic development in the city will be provided to ensure stable municipal finances, to provide business and employment opportunities for residents in the area, and to present the image of a vibrant community.

Objective: Redevelopment of Village Square as a viable commercial center shall be encouraged.

Objective: Development of a viable neighborhood shopping center with a

supermarket, mini-department store, and other neighborhood shopping and service establishments shall be encouraged.

Objective: Redevelopment of the Taylor Road Shopping Center shall be encouraged.

Objective: Redevelopment of the Robertson area will focus on light industrial uses and appropriate commercial uses that are compatible with the airport.

Objective: Communication with the city of St. Louis shall be undertaken to encourage redevelopment of St. Louis-owned property in the Robertson area and to ensure that such redevelopment is consistent with Hazelwood's plans and development guidelines for the area.

Objective: Redevelopment of the Taylor Road corridor shall be encouraged.

Objective: A review of available infrastructure in the Robertson area should be undertaken to determine improvements necessary to support appropriate redevelopment.

Objective: Redevelopment of the I-270/Lindbergh interchange area shall be encouraged.

Objective: Design guidelines, including access requirements, should be formulated for the Robertson area to ensure that new development presents a good image.

Objective: The appearance of Lindbergh Boulevard shall be improved to encourage redevelopment of this corridor by appropriate commercial uses.

ECONOMIC DEVELOPMENT PLAN

Redevelopment of Village Square

Redevelopment of Village Square is important to the city. A number of problems with redeveloping the site have been mentioned including access or perceived access problems and the fact that the shopping center is not in the center of a large residential area. In other words, since most of the land south of the center is developed in commercial and industrial uses, it does not function well as a neighborhood or district shopping center. Such a location in the center of residential areas is crucial to attracting major retailers who depend on market studies.

Redevelopment of the center may have to focus on alternative commercial uses to neighborhood retail establishments. Opportunities for office uses should be investigated while encouraging additional retail outlets. It may be difficult to improve access to the site.

However, improved signage might improve the perception of ease of access to the site. Both on-site and off-site signage could be utilized to improve directions to the shopping center.

Neighborhood Shopping Center

Many city residents have expressed a desire for a neighborhood shopping center with a supermarket, mini-department store, and other neighborhood shopping and service establishments. Developers of such a center would desire a location on a major street such as Lindbergh and would want to be near the center of relatively large residential area. Unfortunately, siting such a facility in Hazelwood is difficult. Much of the southern portion of the city is developed for nonresidential uses and many of the eastern and northern portions of the city are served by neighborhood shopping centers located in other municipalities. There is space for development of a neighborhood shopping center in the Missouri Bottoms area, but this area suffers from access problems and lack of a residential base. It will probably be several years before a neighborhood shopping center will be viable in the bottoms.

Redevelopment of Taylor Road Shopping Center

Redevelopment of the Taylor Road Shopping Center will likely occur in the future. Such development probably will for a discount retailer or a heavy commercial use, possibly a use desiring open display areas. The city should be cautious about proposed developments. Such large buildings often attract indoor flea markets and other similar uses which are not associated with vibrant communities such as Hazelwood and which pay small amounts of sales tax.

Redevelopment of Robertson Area

The land use plan designates the Robertson area for light industrial uses which is consistent with the objectives of this element. Such uses were chosen because of their compatibility with the airport and the fact that this area is not suitable for retail development because of its distance from major concentrations of residential developments. This redevelopment will generate increased property taxes and utility taxes for the city.

Communication with City of St. Louis

An objective of this plan element is to encourage redevelopment of St. Louis-owned property in the Robertson area and to ensure that such redevelopment is consistent with Hazelwood's plans and development guidelines for the area. This objective can be reached by rezoning this area to an appropriate industrial zoning district which is consistent with the land use plan designation for this area, and further discussions with the City of St. Louis. It is likely that St. Louis will be interested in marketing this property as industrial in the future. Hazelwood needs to ensure that the appropriate zoning regulations and guidelines

are in place prior to active development occurring.

Redevelopment of Taylor Road Corridor

Another objective of this plan element is to encourage the redevelopment of the Taylor Road corridor. The land use plan proposes that this area be developed for commercial uses. It is anticipated that these commercial uses will be consistent with commercial uses to the south and will consist of commercial service uses rather than small retail shops. Designating this corridor as commercial rather than residential will encourage redevelopment.

Review of Robertson Infrastructure

In order to ensure that the Robertson area redevelops, it has been suggested that a review of available infrastructure be undertaken. Union Electric and Laclede Gas have indicated that they can support redevelopment. Water and sewer lines should be adequate to support most light industrial uses. Manufacturing uses that require large amounts of water probably would not be interested in this area because of the difficulty in acquiring enough lots to support their building requirements. The remaining infrastructure concern is adequate streets. The Thoroughfare Plan proposes improving Summit Avenue as a three-lane collector street to enhance accessibility in this area. Based on the existing infrastructure and proposed improvement to Summit Avenue, it appears that adequate infrastructure will be available to support light industrial redevelopment.

Redevelopment of I-270/Lindbergh Interchange

Redevelopment of the I-270/Lindbergh interchange area is being encouraged through the planned commercial redevelopment of the Taylor Road corridor, planned signage improvements at Village Square, and proposed landscaping improvements to Lindbergh Boulevard. In addition, marketing efforts for Village Square should focus on retail uses and commercial service uses to broaden the mix of uses in the square.

Design Guidelines for Robertson

Design guidelines including access requirements should be formulated for Robertson to ensure that new development presents a good image. These guidelines could be prepared as an overlay zoning district for the Robertson area or could be incorporated into general zoning regulations for city-wide application. A key concern in the Robertson area is to ensure that access be consolidated as the many small lots redevelop.

Appearance of Lindbergh Boulevard

An objective of this element is to improve the appearance of Lindbergh Boulevard to encourage redevelopment of this corridor in appropriate commercial uses. Lindbergh

Boulevard is a crucial path into Hazelwood and includes major entranceways to the city from Bridgeton to the south and from Florissant to the north. The addition of significant landscaping along the corridor, and particularly at the entrances to the city would add to the appearance of the road. Funds are available from the U.S. Department of Transportation to fund such enhancements through the Intermodal Surface Transportation Efficiency Act (ISTEA). Many cities in North St. Louis County have already made use of such funds for improvements along St. Charles Rock Road.

Housing Element

Hazelwood's housing stock is dominated by sound single-family homes, the vast majority of which have been constructed since 1960. A large variety of duplexes and multi-family units also exist. In 1990, 54.7 percent of the housing in the city had been constructed between 1960 and 1969. Only 19.7 percent of the housing was constructed prior to 1960.

HOUSING CHARACTERISTICS

Hazelwood's housing stock increased from 5,126 units in 1980 to 6,765 units in 1990. This represents an increase of 31.9 percent. Most of this increase is due to annexation of existing residential units. City building permits issued for residential units between 1970 and 1994 totaled 206 single-family and duplex dwellings and 168 multi-family units. All of the multi-family units were permitted in 1973.

During this same time period, the average household size in Hazelwood decreased from 2.55 to 2.41 persons per household. This decrease reflects a nation-wide trend towards smaller households, especially in mature suburban communities. This decrease in average household size was offset by the increased number of housing units available in the city contributing to Hazelwood's increase in population over the decade. Housing data for the city for 1980 and 1990 is summarized in Table 8.

Hazelwood's vacancy rate increased from 2.6 percent in 1980 to 6.1 percent in 1990. Though the city's vacancy rate was very low in 1980, the 1990 vacancy rate was slightly above the national average of five percent.

The relative standing of a particular community's characteristics often is best expressed through comparison with similar, nearby cities. Hazelwood's housing characteristics have been compared to the following cities: Bellefontaine Neighbors, Berkeley, Ferguson, Bridgeton, Overland and University City. Housing information from the 1990 census for the comparison cities is summarized in Table 9.

Table 8
Hazelwood Housing Data

Characteristic	1980	1990
Housing Units	5,126	6,765
Occupied Housing Units	4,971	6,352
Vacancy Rate	2.6%	6.1%
Average Household Size	2.55	2.41
United States Consumer Price Index	100.0 (1982)	130.7

Source: U.S. Census and Statistical Abstracts

Table 9
Housing Characteristics

	Hazelwood	Ferguson	Bellefontaine Neighbors	Berkeley	Bridgeton	Overland	University City
Housing Units (1980)	5,126	9,430	4,534	5,337	6,735	7,550	17,383
Housing Units (1990)	6,765	9,346	4,562	4,706	7,123	7,517	17,706
Household Size (1980)	2.55	2.63	2.57	3.04	2.77	2.64	2.54
Household Size (1990)	2.41	2.52	2.35	2.90	2.54	2.50	2.40
Vacancy Rate	6.1%	6.4%	2.4%	9.1%	4.6%	4.6%	6.5%
Median Housing Value (1990)	$68,500	$57,100	$57,500	$44,600	$89,600	$54,000	$75,200
Median Contract Rent (1990)	$427	$365	$418	$332	$421	$342	$400

Source: U.S. Census

Like Hazelwood, four of the comparison cities had relatively stable housing stocks between 1980 and 1990. Although these cities experienced both losses and gains to their respective housing stocks, none of the cities experienced a loss or gain greater than two percent. In contrast, Berkeley's housing stock decreased by 11.8 percent while Hazelwood's housing stock increased by 31.9 percent.

Much of the decrease in Berkeley was due to the airport's noise abatement buy-out program while most of Hazelwood's increase was due to annexation. All of the comparison cities, including Hazelwood, experienced a decrease in household size between 1980 and 1990. However, fewer persons per household resulted in an increase in the number of housing units needed by the cities to accommodate their residents, even those cities with declining populations.

Despite the number of additional housing units needed to accommodate smaller households, all of the comparison cities experienced an increase in vacancy rates between 1980 and 1990. Bellefontaine Neighbors and Overland were the only cities in the comparison group with vacancy rates below the national average of five percent. Hazelwood's vacancy rate was slightly above the group's average of 6.1 percent.

Over the decade, all of the comparison cities experienced real price increases in the cost of owner-occupied housing as well as in the cost of rental housing. In 1990, the median value of owner-occupied housing ranged from $44,600 in Berkeley to $89,600 in Bridgeton while median contract rent ranged from $332 in Berkeley to $427 in Hazelwood. Median contract rent was highest in Hazelwood in 1990 compared to the other cities. The median value of owner-occupied housing in Hazelwood was average for the comparison group in 1990.

HISTORIC HOUSES

A large number of houses and buildings in Hazelwood are more than 100 years old. The oldest remaining residence (the Utz-Tesson House) was built in 1827 by the family of Major James Utz, a Civil War veteran, on what is now Utz Lane. This house was recognized by the National Register of Historic Places in 1973 and is the only Hazelwood structure so listed. A residence at 6102 Fee Fee Road (at Fee Fee Hills Drive) was built in 1850 by the St. Cin family, some of the earliest settlers in the area. The original Elm Grove School was built in 1852. In 1961, this historic school building, known as the Little Red Schoolhouse, was moved by the Hazelwood Historical Society into Brookes Park. The Knobbe house has also been moved to Brookes Park.

HOUSING PROGRAM

Hazelwood has a Home Improvement Program administered by the Public Works Department. This program is funded by Federal Community Development Block Grant funds which are acquired through applications prepared by the city staff. The program is designed to finance home repairs for low income residents of the city and eligibility is strictly based on income and not assets. A large percent of the applicants are female head of households and retired individuals.

Once an application is filed with the city, the county inspects the house to verify needed repairs. After the repairs are completed, the county reinspects the house to ensure that the identified repairs were completed. The applicant is then reimbursed for 50 percent of the cost of the repairs. Typical repairs consist of new roofs, new furnaces, new energy-efficient windows, electrical repairs and repairs to bathrooms.

Since the program began in Hazelwood in 1980, more than 400 families have participated and received $2 million in reimbursements. The Home Improvement Program has been used throughout the city, not just in one or more small areas. Approximately six percent of all housing units existing in the city in 1990 have made use of the program.

GOALS AND OBJECTIVES

GOAL: Hazelwood's housing opportunities will provide adequate choices for all residents and potential residents of the city including both single and multi-family housing, located in safe and convenient areas of the city.

Objective: The city should enforce the housing maintenance code to ensure the integrity of the city's housing stock.

Objective: New housing shall be located in desirable areas and not in areas subject to high levels of airport noise.

Objective: The development of a retirement center to support the independent living of middle-income residents should be encouraged.

Objective: To maintain the attractive appearance of residential areas, a city ordinance should be enacted to limit the use of carports to the storage of automobiles, boats and similar vehicles.

Objective: Development of upper-income single-family housing shall be encouraged.

HOUSING PLAN

Critical issues facing Hazelwood's future include the maintenance of its existing housing stock, the provision of additional housing and a variety of housing to meet housing demand. While the city is fortunate to have a solid base of sound housing stock, maintenance of this housing stock will be increasingly important over the next 20 years as this stock continues to age. A diversity of housing types to meet the needs of an aging population will also be necessary.

Program for Maintaining Housing Stock

As the housing stock of a community ages, more and more dwellings belong to absentee owners. This is partly due to the fact that some people who move from a home retain ownership and then rent it for income. It is also due to individuals buying housing units for rental income. Problems with this phenomenon are that some owners of rental property (particularly absentee owners who do not live in the community) do not maintain the property as well as many owner-occupied dwellings are maintained. Often times, health and/or safety problems occur in dwellings that are not properly maintained.

In order to protect current and future housing renters in Hazelwood as the city's housing stock continues to age, it would be beneficial for the city to enact a program which would require inspections of rental housing when there is a change in occupancy to ensure that there are no health or safety problems. Any problems identified by city inspectors could then be reported to the owner of the property who would be responsible for correcting the problem.

The city's existing housing program that provides funds to home owners to maintain their dwellings needs to be continued. This program will assist greatly in efforts to maintain the city's high quality housing stock and encourage home owners to correct deficiencies to prevent these homes from deteriorating in the future.

Locate Housing in Desirable Areas

An objective of this plan is to locate new housing in desirable areas and not in areas subject to high levels of airport noise. In the land use element of the plan, there is a table that indicates that the land use plan map designates residential land uses in areas which are not adversely impacted by airport noise. Large areas of the Missouri Bottoms have been proposed for residential development. These areas are not impacted by airport noise, are outside of the 100 year floodplain, and are away from highway noise and more intensive land uses (such as commercial and industrial areas.

Diversity of Housing

A diversity of housing including single-family, two-family and multiple-family residences needs to be encouraged by the city including the possibility of nontraditional housing types such as single-family attached dwellings and zero-lot line dwellings. Opportunities exist for relatively large-scale residential developments in the city and the development of alternative housing (i.e., housing other than single-family detached dwellings) needs to be encouraged to provide adequate housing opportunities.

Transportation Element

Hazelwood holds a key location in the St. Louis area's transportation network. The city is well served by the interstate highway system with I-270 running through the center of the city, I-170 serving the east portion of the city, and I-70 is located a short distance south of the city. Missouri Highway 370 and Lindbergh Boulevard (US 67) also run through the city.

INVENTORY OF TRANSPORTATION FACILITIES

An inventory of existing transportation facilities in the Hazelwood area was prepared as a basis for identifying existing roadway deficiencies, projecting needed roadway improvements, and identifying transportation alternatives. The inventory includes a list of major roads in the city, inter-city bus service, mass transit, airports and railroads. Available traffic counts are also provided.

Existing Roadway System

The major traffic facilities within Hazelwood consist of I-270, Missouri Highway 370, Lindbergh Boulevard, I-170, Howdershell Road, Lynn Haven, Dunn Road, McDonnell Boulevard, Missouri Bottom Road, Fee Fee Road, Pershall Road, Teson Road, and Charbonier. In addition to the many highways and major streets that serve Hazelwood, a number of other significant modes of transportation are available in the area. These modes include inter-city buses, bus and light rail transit service, airports and railroads.

Inter-City Bus Service

Inter-city bus service in the St. Louis area is provided by Greyhound Bus Lines, Mid-American Coaches, Inc. and Vandalia Bus Lines, Inc.

Mass Transit

Buses. Bi-State Development Agency operates over one hundred bus routes covering the St. Louis Metropolitan Area. The Hazelwood area is served by five intersecting routes: Number 27 Hazelwood Shuttle, Number 29 Berkeley Shuttle, Number 47 Cross County, Number 61 Chambers Road and Number 74 Florissant.

Light Rail Transit. Bi-State Development Agency introduced service on MetroLink, a light rail system in July 1993. MetroLink connects Lambert-St. Louis International Airport through downtown St. Louis to East St. Louis over one 18-mile long line which has 18 stations. MetroLink was projected to carry an estimated 12,000 passengers per day during its first year of operations. The system greatly exceeds that projection and currently averages more than 30,000 riders per day.

The North Hanley MetroLink station is the closest station to Hazelwood and currently is the second busiest MetroLink station. This facility has a park-n-ride lot with 1,000 parking spaces next to the MetroLink station, enabling MetroLink passengers to park their automobiles for free while they use the system. In addition, several buses serve the North Hanley MetroLink Station.

There are plans to expand MetroLink in St. Louis County and St. Clair County, Illinois. Currently, the St. Clair County extension is the top priority. The plans for St. Louis County include a route connecting a new line along I-170 from approximately Lindbergh on the north to the I-55/I-270 interchange in south St. Louis County.

Airports

Lambert-St. Louis International Airport. Lambert-St. Louis International Airport, operated by the St. Louis Airport Authority, covers approximately 1,930 acres of land and is located immediately south of Hazelwood. The airport authority owns a total of 2,360 acres including land that has been purchased through the noise abatement buy-out program.

Lambert has five runways. Three parallel runways are oriented northwest/southeast and have lengths as follows: runway 12R/30L is 11,019 feet long, runway 12L/30R is 9,003 feet long and runway 13/31 is 6,286 feet long. There are two cross-wind runways. Runway 6/24 is oriented northeast/southwest and is 7,602 feet long. Runway 17/35 is oriented north/south and is 3,008 feet long. The shorter runways (13/31 and 17/35) are primarily used for general aviation traffic (small planes). Aircraft are designed to operate into the wind and at Lambert the predominant wind direction is from the northwest. Approximately 60 percent of aircraft take-offs and landings are to the northwest using runways 30L, 30R and 24. Approximately 40 percent of aircraft take-offs and landings are to the southeast using runways 12R, 12L, and 6.

Lambert averages approximately 1,100 scheduled daily departures and in 1994 served approximately 11.5 million enplaned passengers. Lambert serves as a hub for Trans World Airlines and other airline service is provided by American Airlines, American West Airlines, Continental Airlines, Delta Airlines, Northwest Airlines, Southwest Airlines, United Airlines and USAir. The airport also is served by three commuter airlines: Comair, Exec Express II, and Trans World Express. In 1994, Lambert had 478,248 total aircraft

operations and had 63,150 tons on enplaned cargo.

Spirit of St. Louis. Spirit of St. Louis Airport is located in Chesterfield, Missouri, approximately 14 miles southwest of Hazelwood and is operated by St. Louis County as a general aviation/reliever airport. The airport has parallel asphalt runways (8R/26L and 8L/26R). The main runway is 7,000 feet long and the secondary runway is 3,800 feet long. Spirit supports many of the corporate jets and other small aircraft in the St. Louis area.

Mid-America Airport. Due to an increase in air traffic at Lambert-St. Louis International Airport, it was determined that an additional airport was required to ease congestion in the region. Mid-America Airport, a joint-use (military/civilian) airport is located at Scott Air Force Base (AFB), approximately 30 miles southeast of Hazelwood. A 10,000 foot long runway (designated 14L/32R) was constructed to serve civilian traffic. This runway is parallel to the main runway for Scott AFB and the two primary runways are connected by a crossover runway. In addition to a passenger terminal with potential for up to 85 gates, the airport also has a large cargo terminal.

St. Louis Regional Airport. St. Louis Regional Airport, a general aviation airport, is located in Illinois, approximately 16 miles southeast of Hazelwood.

Creve Coeur Airfield. Creve Coeur Airfield is located in Maryland Heights, Missouri, just east of the Missouri River and is approximately six miles southwest of Hazelwood. The airfield has two runways including a 2,850 foot long asphalt runway (runway 16/34) and a 3,236 foot long turf runway (runway 7/25). The airfield serves small private aircraft.

St. Charles County-Smartt Airport. St. Charles County-Smartt Airport is a general utility reliever airport under the St. Louis Regional Systems Plan. It is located in St. Charles County approximately eight miles northwest of Hazelwood. The airport has two asphalt runways, including a 2,000 foot long runway (runway 9/27) and a 3,800 foot long runway (runway 18/36). Both runways are asphalt and are designated for visual flight rule operations. There are 100 to 120 small aircraft based at Smartt. There are long-range plans to extend both runways to 4,000 feet.

Railroads

St. Louis has traditionally been a major rail center. Freight-hauling railroads serving the metropolitan area include Burlington Northern Santa Fe, CSX Corporation, Illinois Central, Norfolk Southern, St. Louis Southwestern Railway (Cotton Belt) and Union Pacific. The Norfolk Southern has a major line that runs along the southern limits of the city in an east-west direction. Passenger service in the metropolitan area is provided by Amtrak which operates stations in Kirkwood and St. Louis, and East Alton, Illinois. Direct

passenger service is available to and from Chicago, Kansas City, Little Rock, New Orleans, Dallas and San Antonio.

Ports

Port of Metropolitan St. Louis. St. Louis County is located at the center of the Mississippi River inland waterway system. The Port of Metropolitan St. Louis encompasses several port districts and authorities in Missouri and Illinois, including the St. Louis County Port Authority, and is the second busiest port in the U.S.

St. Louis County Port Authority. The St. Louis County Port Authority, has acquired an 80 acre site on the Mississippi River in South St. Louis County. The Port Authority plans to develop a port terminal and multi-modal industrial park on this site. Site improvements will include a docking facility, a liquid dock, a rehabilitated 230,000 square foot building for public warehousing and light manufacturing, and related access roads and rail spurs.

Tri-City Regional Port. Tri-City Regional Port is located on the Chain of Rocks Canal in Granite City, Illinois, approximately 12 miles east of the city. It has a minimum operating depth of nine feet to facilitate commercial traffic and is open year-round.

TRAFFIC CONDITIONS

Traffic Counts

Traffic counts for major roads in and around Hazelwood are listed in Table 10. These traffic counts are a critical component for determining the level-of-service of a roadway.

Table 10
Average Weekday Traffic Counts

Road	Segment	Traffic Count
Interstate 270	East of Florissant Road	132,330
	Florissant Road to I-170	138,820*
	I-170 to Lindbergh Boulevard	129,290*
	Lindbergh Boulevard to Route 370	131,770*
	West of Route 370	128,310
Interstate 170	South of Interstate 270	63,030
Lindbergh Blvd.	South of McDonnell Blvd.	37,320
	McDonnell Blvd. to Utz Lane	40,810
	Utz Lane to I-270	38,370
	I-270 to Elm Grove Road	57,480*
	Elm Grove Road to Charbonier/Washington	52,760
McDonnell Blvd.	South of I-270	27,850
Howdershell	I-270 to Dunn Road	29,230
	Dunn Road to Riverwood Estates	29,850
	Riverwood Estates to Charbonier	29,610
Dunn Road	East of Lindbergh	8,370
	Lindbergh to Howdershell	4,550
	West of Howdershell	6,870
Teson Road	West of Howdershell	1,570
Aubuchon Road	Southwest of Teson Road	3,180

Source: Missouri Department of Transportation
Note: All counts are 1994 counts except as noted with an *. Counts followed by an asterisk are 1995 counts.

Level-of-Service Analysis

Level-of-service is a qualitative measure which describes the operational conditions of a road and the perception of the operational conditions by motorists. Level-of-service generally describes these conditions in terms of speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels-of-service are defined with letter designations of A through F. Level-of-service A represents the best operating conditions and F represents the worst. The six levels-of-service are described as follows:

> ***Level-of-Service A*** represents free flow conditions. Individual motorists are virtually unaffected by the presence of other vehicles in the traffic stream. Operators have a high degree of freedom to select desired speed and to change lanes. The level of comfort and convenience to the motorist or passenger is excellent. An example of level-of-service A is traffic conditions along Teson Road west of Howdershell.
>
> ***Level-of-Service B*** is clearly in the range of stable flow although other vehicles in the traffic stream are noticeable. Ability to select desired speed is relatively unaffected although there is a slight decline in the ability to change lanes over the conditions present in level-of-service A. The level of comfort and convenience to the motorist or passenger is very good although it is less than that of level-of-service A because the presence of other vehicles in the traffic stream begins to affect individual behavior. An example of level-of-service B is traffic conditions along Aubuchon Road southwest of Teson.
>
> ***Level-of-Service C*** is still in the range of stable flow, but the operation of individual users is significantly affected by interactions with other vehicles in the traffic stream. Ability to select and maintain a desired speed is affected by the presence of other vehicles and changing lanes becomes more difficult. The general level of comfort and convenience is good although it has declined considerably from level-of-service A. An example of level-of-service C is Dunn Road between Lindbergh and Howdershell.
>
> ***Level-of-Service D*** consists of high-density yet stable flow. The ability to select a desired speed and to change lanes is severely restricted, and the driver or passenger experiences a fair level of comfort and convenience. Small increases in traffic flow can cause operational problems at this level-of-service. An example of level-of-service D is Dunn Road between Taylor Road and Graham Road.
>
> ***Level-of-Service E*** represents unstable flow and indicates that the road is at or near capacity. Speeds are generally reduced to a low, but relatively uniform volume during peak periods. The ability to change lanes is

extremely difficult and is generally accomplished by forcing another vehicle to slow down to accommodate such maneuvers. Comfort and convenience is poor and driver frustration is high. Small increases in traffic volume or other minor problems such as a stalled vehicle can cause traffic to come to a complete stop for relatively long periods. An example of level-of-service E is I-270.

Level-of-Service F describes forced or breakdown flow. This condition exists when the amount of traffic approaching a point exceeds the amount that can be accommodated on the roadway. Lines of vehicles form behind such locations. Operating conditions within the line include stop and go cycles which are extremely unstable. Vehicles may move at reasonable speeds for several hundred feet, then be required to stop for half a minute or more. The level of comfort and convenience to the driver or passenger is extremely poor. An examples of level-of-service F is Lindbergh between I-270 and Elm Grove Road.

A level-of-service analysis was conducted for major roads by segment based on the traffic counts listed in Table 10. The level-of-service of these major roads is listed in Table 11.

PROGRAMMED TRANSPORTATION IMPROVEMENTS

A number of transportation improvements are currently programmed for the Hazelwood area. Transportation improvements programmed in the Missouri Department of Transportation (MoDOT) Program for Highway Right-of-Way Acquisition and Construction and the St. Louis Metropolitan Area Transportation Improvement Program are outlined below. Over the next five years, MoDOT will be concentrating on rehabilitation projects in lieu of major new construction.

Interstate 270 Rehabilitation and Bridge Work. Resurfacing and pavement repair to I-270 between Lindbergh Boulevard and Bellefontaine Road is ongoing and is scheduled for completion in 1998. Bridges over local streets are being widened as part of this work. A companion project is the redecking and widening of bridges over Bellefontaine and Riverview Roads and resurfacing of I-270 from Bellefontaine Road to the Mississippi River which is scheduled for 1999.

Interstate 270 Widening. MoDOT has plans to widen I-270 between Lindbergh Boulevard and the Chain of Rocks Bridge (over the Mississippi River) to an eight-lane section. This project includes revising some of the existing interchange ramps within this corridor. This improvement is programmed for fiscal years 2003 to 2007. These

improvements should improve traffic flow in this corridor, especially the interchanges.

MetroLink. The Bi-State Development Agency is planning to build an extension of the MetroLink system through Forest Park to I-170, then north in the I-170 corridor to Hazelwood. This extension is planned between 2003 and 2006. A similar extension southward in the I-170 corridor to the I-55/I-270 interchange is also planned.

Lambert-St. Louis International Airport. Expansion of Lambert-St. Louis International Airport is imminent. The FAA and the Airport Authority have updated the master plan for Lambert. This update included an evaluation of the feasible airfield alternatives including existing alternatives, new alternatives and a "do-nothing" alternative. The effects of potential runway changes on the surrounding area and transportation system were considered in developing the most effective redevelopment of the airport. The plan updated the Airport Layout Plan, Terminal Area Plan, Airport Access Plan and the Airport Land Use Plan.

Creve Coeur Airfield. There are plans to improve both runways at Creve Coeur Airfield. Plans include extending runway 16/34 from 2,850 feet in length to 3,400 feet and paving the 3,236 foot long turf runway (runway 7/25).

Table 11
Level-of-Service

Road	Segment	Level-of-Service
Interstate 270	East of Florissant Road	E
	Florissant Road to I-170	F
	I-170 to Lindbergh Boulevard	E
	Lindbergh Boulevard to Route 370	E
	West of Route 370	E
Interstate 170	South of Interstate 270	C
Lindbergh Blvd.	South of McDonnell Blvd.	F
	McDonnell Blvd. to Utz Lane	D
	Utz Lane to I-270	F
	I-270 to Elm Grove Road	F
	Elm Grove Road to Charbonier/Washington	F
McDonnell Blvd.	South of I-270	C
Howdershell	I-270 to Dunn Road	C
	Dunn Road to Riverwood Estates	C
	Riverwood Estates to Charbonier	C
Dunn Road	East of Lindbergh	D
	Lindbergh to Howdershell	C
	West of Howdershell	C
Teson Road	West of Howdershell	A
Aubuchon Road	Southwest of Teson Road	B

Source: Harland Bartholomew & Associates

GOALS AND OBJECTIVES

GOAL: A safe, efficient and convenient transportation system shall be provided to residents of the city and travellers in the area while providing choices in the mode of travel.

Objective: Alternatives to allowing additional traffic on Lindbergh Boulevard should be explored.

Objective: Developers shall install necessary transportation improvements in conjunction with receiving approval of final development orders.

Objective: Extension of a MetroLink line to Hazelwood or the surrounding area shall be encouraged.

Objective: Internal traffic circulation within the city shall be improved.

Objective: Heavy traffic on Lynn Haven will be alleviated through transportation improvements to provide better connections between Lindbergh Boulevard and Howdershell.

Objective: Development of an interchange at Missouri Highway 370 and Missouri Bottom Road is necessary to provide access to the Missouri Bottoms.

Objective: Redevelopment of small lots in the Robertson area shall require special access control.

Objective: Direct access to major roads shall be limited to other major roads and major trip generators.

TRANSPORTATION PLAN

Planned Transportation Improvements

Transportation improvements which are planned to improve traffic circulation in the city and encourage economic development. These improvements are summarized below and are included in the Thoroughfare Plan map in Figure 9.

Dunn Road. In order to improve traffic circulation in the city generally, and between Howdershell and Lindbergh specifically, it is recommended that Dunn Road be improved. This improvement would entail widening the existing roadway to a three or four-

lane facility between Howdershell and Lindbergh and improving its intersection with Lindbergh. This improvement would make an attractive connection between Howdershell and Lindbergh in order to entice motorists away from Lynn Haven. Improving the intersection of Lindbergh and Dunn Road is also proposed to improve access to Village Square. One change proposed at the intersection is a change in signing for westbound traffic. Signage would be changed to direct traffic bound for Howdershell to use Dunn Road. Another potential change is to make Lynn Haven a one way eastbound street from a point approximately 500 feet west of Lindbergh to Lindbergh.

I-270/Dunn Road Slip Ramp. To further improve traffic flow between Lindbergh and Howdershell, it is recommended that slip ramp type exit be installed on west bound I-270 to allow traffic to exit on Dunn Road between Lindbergh and Howdershell. Currently, some existing west-bound I-270 traffic exits at Lindbergh and travels on local streets to destinations along north Howdershell. The slip ramp would allow such traffic to exit on Dunn Road and follow collector streets to north bound Howdershell.

370/Missouri Bottoms Interchange. This interchange is proposed to improve acccss to the Missouri Bottoms area and western portions of the city. In addition, a collector road system based on this interchange is proposed.

Missouri Bottoms Collectors. New collector roads are proposed for the Missouri Bottoms area. This area is under-served by roadways, and major improvements are necessary to sustain development. Roadways are proposed to connect Teson Road with Missouri Bottom Road and between Missouri Bottom Road and Aubuchon.

Summit Avenue. Summit Avenue should be upgraded and improved as a three-lane collector street to improve access to the Robertson Area. This improvement would be constructed from Lindbergh Boulevard to Fee Fee Road. An extension to the northwest to connect with Phantom Road is also desirable as that area redevelops.

Byassee. Upgrading and widening Byassee Road to a three-lane facility is recommended to improve truck access to this area of the city. This improvement is proposed to increase economic development opportunities in this under-developed industrial area. This improvement should include a substantial improvement to the intersection of Byassee and McDonnell Boulevard. Intersection improvements would include widening of the Byassee approach, adding a left turn lane on the Byassee approach, and improving intersection geometrics to allow easier turning movements for large trucks.

Access Limitations. A city ordinance should be prepared to limit access to Lindbergh and Fee Fee in the Robertson area. Traffic should be routed to Summit Avenue. This could be accomplished by an overlay zoning district for this area or could be a city wide ordinance limiting access to specific major thoroughfares.

Functional Classification

The city's existing and future roadways are classified by functional characteristics to determine future right-of-way width requirements. Streets and highways are classified as follows:

Freeways. Facilities that are divided and have full control of access such that no traffic crossings or intersections occur at grade. Freeways are designed solely for the purpose of moving high speed traffic and are not designed to provide access or service to abutting properties. Rights-of-way should be a minimum of 200 feet and will generally average 300 feet or more in width. Pavement shall consist of two roughly parallel strips of pavement separated by a grassed median. Each strip of pavement will be a minimum of 24 feet wide (to accommodate two 12-foot wide lanes) plus paved shoulders. Freeways in Hazelwood include I-270, I-170 and highway 370.

Principal Arterials. Principal arterials have considerable continuity and are the major streets and highways moving traffic through the Hazelwood area. These arterials primarily connect the city to other cities in the area. This classification includes all limited access facilities that are not classified as freeways and includes most of the roads on the state road system. Limited access facilities include portions of Lindbergh Boulevard. Minimum rights-of-way should be 100 feet and minimum pavement widths should be 48 feet or 64 feet when constructed with a 16 foot center median. Because principal arterials are designed to move traffic, they should provide no driveway access to adjacent residential land uses. Residential lots should back or side onto arterial streets. Commercial land uses may be provided access to arterial streets, but only when access to local or collector streets cannot be obtained.

Minor Arterials. Minor arterials have good continuity within Hazelwood and serve a high percentage of the automobile trips originating in the city. Those roads also provide connections to most areas of the city to facilitate intracity trips. Minimum rights-of-way should range from 60-to-80 feet.

Collector Streets. Collector streets are facilities that collect traffic from local streets and channels it to the arterial street system. Collector streets serve a large portion of the trips beginning and ending in Hazelwood. Collector streets have good continuity within the city. Minimum rights-of-way shall be 60 feet.

Local Streets. A facility providing direct access to single-family lots or to the parking facilities for multiple-family dwelling units. While some local streets have moderate continuity, most consist of cul-de-sacs and loop streets which will normally terminate at a T-intersection with another local street or collector street.

The thoroughfare plan for the Hazelwood area is depicted in Figure 9.

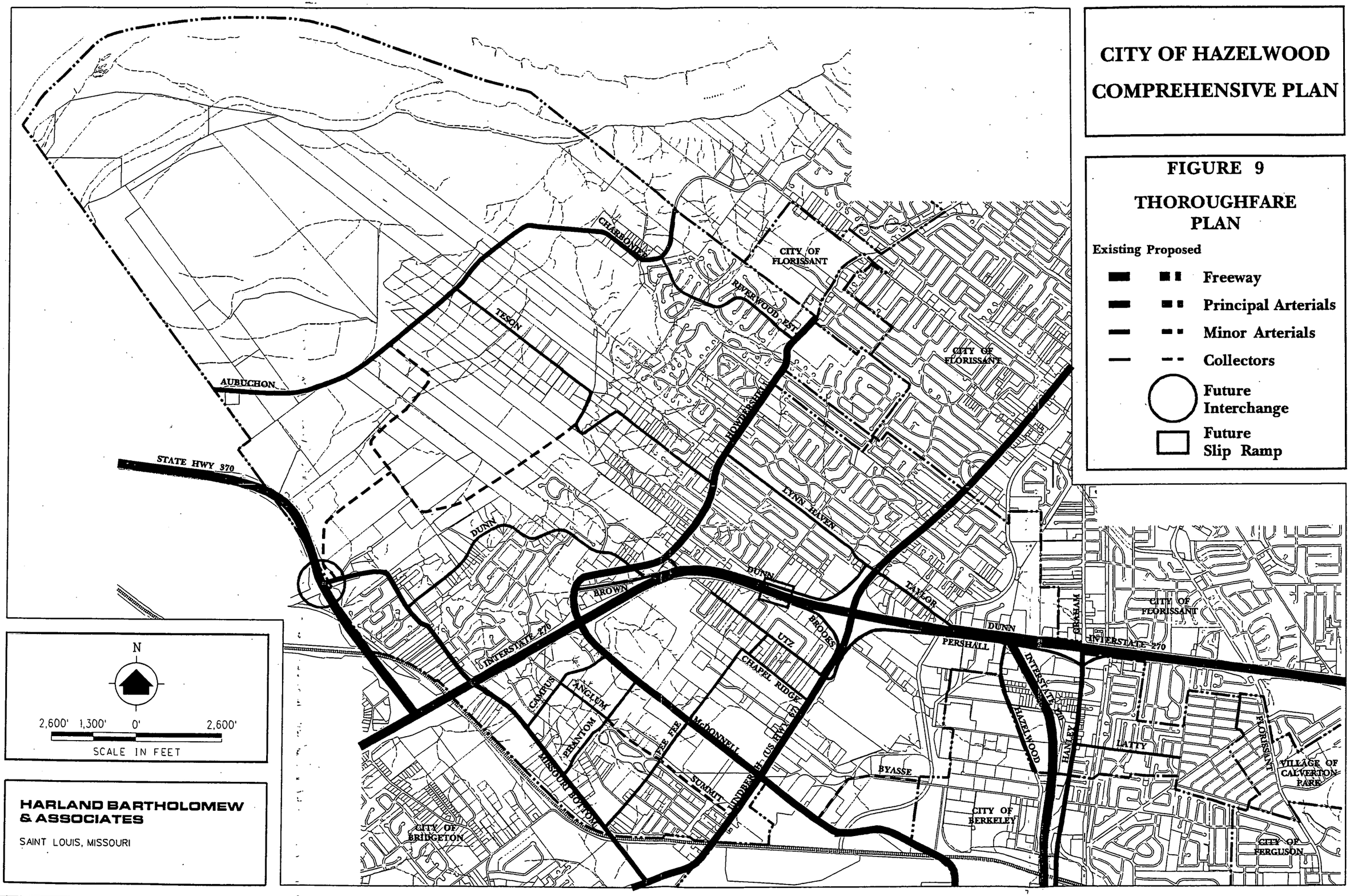
CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 9

THOROUGHFARE PLAN

Existing Proposed

- Freeway
- Principal Arterials
- Minor Arterials
- Collectors
- Future Interchange
- Future Slip Ramp



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Community Facilities Element

The City of Hazelwood controls a large number of parcels of land and a number of public buildings. Some of this land and all of the public buildings are necessary to provide city services including police and fire protection, public works, and community services (including the recreation division). Community facilities to house municipal activities include the city hall (including the police department) at 415 Elm Grove Road, the city's two fire stations (station 1 at 6100 North Lindbergh and Station 2 at 6800 Howdershell), the Public Works facility at 115 Ford Lane, and the Parks and Recreation Division with recreation centers at 1186 Teson Road and 8969 Dunn Road. A map indicating the location of city buildings and city parks is included in Figure 10.

CITY HALL COMPLEX

The city hall and police complex, completed in 1984, includes the city administrative offices. The administrative space includes offices for the city manager, city clerk, finance department, public works director, and police department. The city council chambers are located in the building and serve as the meeting space for several boards and commissions and the municipal court.

POLICE DEPARTMENT

Hazelwood's Police Department is located in the city hall complex although the police have separate entrances for employees, the jail and other functions. Facilities include nine jail cells (three long-term for men, one long-term for females, one juvenile cell, and four short-term cells), dispatching facilities and other administrative space.

The department has 53 sworn officers and 12 full-time civilians. In addition, a number of volunteer city residents assist the department in administrative duties and traffic control at city sponsored activities. The sworn officers include eight detectives, a DARE officer, two neighborhood action team officers, and patrol officers and supervisors. There are a minimum of one supervisor and five patrol officers on duty at any given time. In

addition to the sworn officers, the department employees part-time jailers. The full-time civilian employees include seven dispatchers, two clerks, and a secretary. Part-time dispatchers are also employed by the department.

The police department provides dispatching for the city's fire department and for the Calverton Park police department. In addition, Calverton Park occasionally uses the city's jail services on a short-term basis. Hazelwood police officers use the Berkeley police department's pistol range for practice.

FIRE PROTECTION

Hazelwood enjoys exceptional fire protection. Fire protection is provided by the city's fire department, by the Robertson Fire Protection District and the Florissant Valley Fire Protection District. Hazelwood's fire department covers approximately one-half of the geographic area of the city (serving approximately 17,000 persons), Robertson covers approximately one-quarter of the city, and Florissant Valley covers approximately one-quarter of the city.

Hazelwood Fire Department

Commercial Risk Services, Inc., a property insurance rating organization assigns fire insurance class ratings to fire departments based on a scale of 1 to 10 with 1 being the highest rating and 10 being the lowest rating. Hazelwood's fire department has an Insurance Service Organization (ISO) rating of 4. Very few fire departments have a rating better than 4. In fact, no fire department in St. Louis County has a rating of 1 or 2, and only a few departments in the county have a rating of 3. Approximately 75 percent of the fire protection providers in St. Louis County have an ISO rating of 4.

The city's fire department operates two stations. Fire Station Number 1 is located at 6100 North Lindbergh Boulevard and the Fire Station Number 2 is located at 6800 Howdershell.

Fire Stations. Fire Station Number 1 is a two-bay facility located at 6100 North Lindbergh. It has 3,000 square feet of floor area and was constructed in 1966. Fire Station Number 2 is a three-bay facility located at 6800 Howdershell. It has 6,000 square feet of space on the lower level and 1,900 square feet of administrative space on the upper level. Construction of this station was completed in 1982.

Fire Equipment. The department operates a quint from Fire Station Number 1, and a quint and rescue truck from Fire Station Number 2. A quint is a combination pumper and ladder truck that carries water, hose and some rescue equipment in addition to the pump and ladder. A list of the department's major equipment is included in Table 12. The department also has a car and a jeep for the chief and assistant chief.

Personnel. The city has 33 fire fighters including the chief and assistant chief. A minimum of nine fire fighters are on duty for each 24-hour shift with four personnel assigned at Station Number 1 and five personnel assigned at Station Number 2. During optimum personnel levels, a sixth fire fighter is assigned to Station Number 2. The personnel at Station Number 1 include a captain on each shift while Station Number 2 has a battalion chief and a fire inspector on each shift. In addition to their fire fighting duties, each battalion chief is assigned additional responsibilities. One battalion chief is responsible for public relations, one is responsible for training, and one is the medical officer.

Table 12
Fire Equipment

Apparatus	Year and Manufacturer	Special Equipment
Quint	1996 Spartan/Smeal[1]	85 foot ladder, 1,500 gpm pump
Quint	1997 Spartan/Smeal[1]	60 foot ladder, 1,500 gpm pump
Rescue Truck	1996 Chevrolet Suburban	Rescue Equipment
Reserve Pumper	1987 Pierce	1,500 gpm pump

[1]Both quints were assembled by Smeal on chassis constructed by Spartan. Smeal was subsequently purchased by Spartan.
Source: Hazelwood Fire Chief

Mutual Aid. The fire department has mutual aid agreements with every municipality and every fire protection district in St. Louis and St. Charles counties, the City of St. Louis, and Boeing Aircraft. In addition, the department also belongs to the state-wide mutual aid program. Through mutual aid agreements, fire departments respond to alarms within other jurisdictions. This is advantageous for not only large fires, but also provides that the nearest fire equipment is dispatched to large fires.

Dispatching. Fire dispatching is handled by a joint police/fire dispatching office in the police department. The fire department responded to 1,289 calls in 1996. Of these calls, 459 were medical calls, 224 were structure fire calls in the city, 243 were mutual aid calls, 64 were nonemergency assists and approximately 300 were miscellaneous alarms including car fires and trash fires.

Emergency Medical Services

Hazelwood contracts with Christian Hospital for ambulance service. Christian Hospital has an ambulance stationed at Fire Station Number 2. If this ambulance has to leave the city, the next available Christian Hospital ambulance is reassigned to the fire station. Currently, the fire department provides basic life support services and is in the process of upgrading to advance life support. In this new program, a paramedic will respond on a fire engine to medical calls. Christian Hospital will continue to be responsible for transporting individuals to hospitals.

Robertson Fire Protection District

The Robertson Fire Protection District covers a large portion of west Hazelwood. Robertson also has an ISO rating of 4. This district operates two fire stations, Fire Station Number One at 12641 Missouri Bottom Road in Hazelwood and Fire Station Number 2 at 12195 Gist Road in Bridgeton. The District's headquarters is located next to the station on Missouri Bottom Road. A pumper is assigned to the station on Missouri Bottom Road. A quint with a 75 foot ladder and an ambulance are assigned to the station on Gist Road.

Florissant Valley Fire Protection District

Florissant Valley Fire Protection District has an ISO rating of 4 and operates three fire stations. Fire Station Number 1 is located at 605 St. Catherine Street, Fire Station Number 2 is located at 1955 Washington Street, and Fire Station Number 3 is located at 675 Hume Road. The District operates a quint from the Fire Station Number 1 and pumpers at each of the other stations. Approximately one-quarter of Hazelwood, along the eastern and northeastern boundaries, is protected by Florissant Valley.

PUBLIC WORKS

The Director of Public Works is responsible for public works, building inspection, community development, and parks and recreation. The department includes a Superintendent of Public Works who is responsible for maintenance of all city streets, parks, buildings and vehicles. These duties include maintenance of 139 miles of city-owned streets. A Superintendent of Parks and Recreation is responsible for recreation programs and scheduling activities in city parks. These duties include planning and development of parks and recreation facilities. A City Planner is responsible for preparing block grant applications, the city's Home Improvement Program and serves as the staff liaison to the Plan Commission. The Code Administrator is responsible for all construction permits and inspections. Two code enforcement officers report to the Code Administrator. They perform exterior inspections, and enforcement of city codes.

Most of this administrative staff is housed together in city hall. The Superintendent of Public Works has an office at the city garage and the Superintendent of Parks and Recreation has an office at the community center. Street maintenance services provided by the public works department include street sweeping, seasonal leaf vacuuming, curbside limb chipping and snow removal.

SCHOOLS

Students attending public schools in Hazelwood are served by three school districts: Hazelwood, Ferguson-Florissant, and Pattonville. Hazelwood is also served by several private schools: Lutheran Church of the Good Shepherd, St. Martin de Porres Catholic School, and Our Lady of Mercy Catholic School.

Most students attending public schools in Hazelwood are served by the Hazelwood School District. The district has a current enrollment of approximately 17,880 students and maintains 19 elementary schools, three middle schools and three high schools. Hazelwood West Senior and Junior High School, and Russell, Armstrong, Garrett and McNair elementary schools are located in Hazelwood.

Some students in Hazelwood are served by the Ferguson-Florissant school district. This district has an enrollment of approximately 11,000 students and maintains 16 elementary schools, three middle schools and three high schools. Ferguson-Florissant does not have any schools located in Hazelwood.

The Hazelwood, Ferguson-Florissant and Pattonville School Districts are all AAA rated, the highest accreditation awarded by the State of Missouri. All three districts maintain a combined average student-to-classroom teacher ration of 20 to 1. In addition, each district estimates that 58 percent or more of their teachers have advanced degrees. Schools in the Hazelwood area are shown in Figure 10.

GOALS AND OBJECTIVES

GOAL: Necessary community facilities will be provided throughout the city to provide services to the residents of Hazelwood.

Objective: Adequate public safety facilities shall be located throughout the city to ensure quick response times in emergencies.

Objective: The existing excellent community facilities provided by the city shall be maintained at or above their existing level of service.

COMMUNITY FACILITIES PLAN

Hazelwood has very good community facilities. In order to maintain this high level of community facilities, some improvements will be necessary over the next 20 years. Some new facilities are discussed in this section and recreation type facilities are discussed in the recreation element of this plan.

Fire Stations

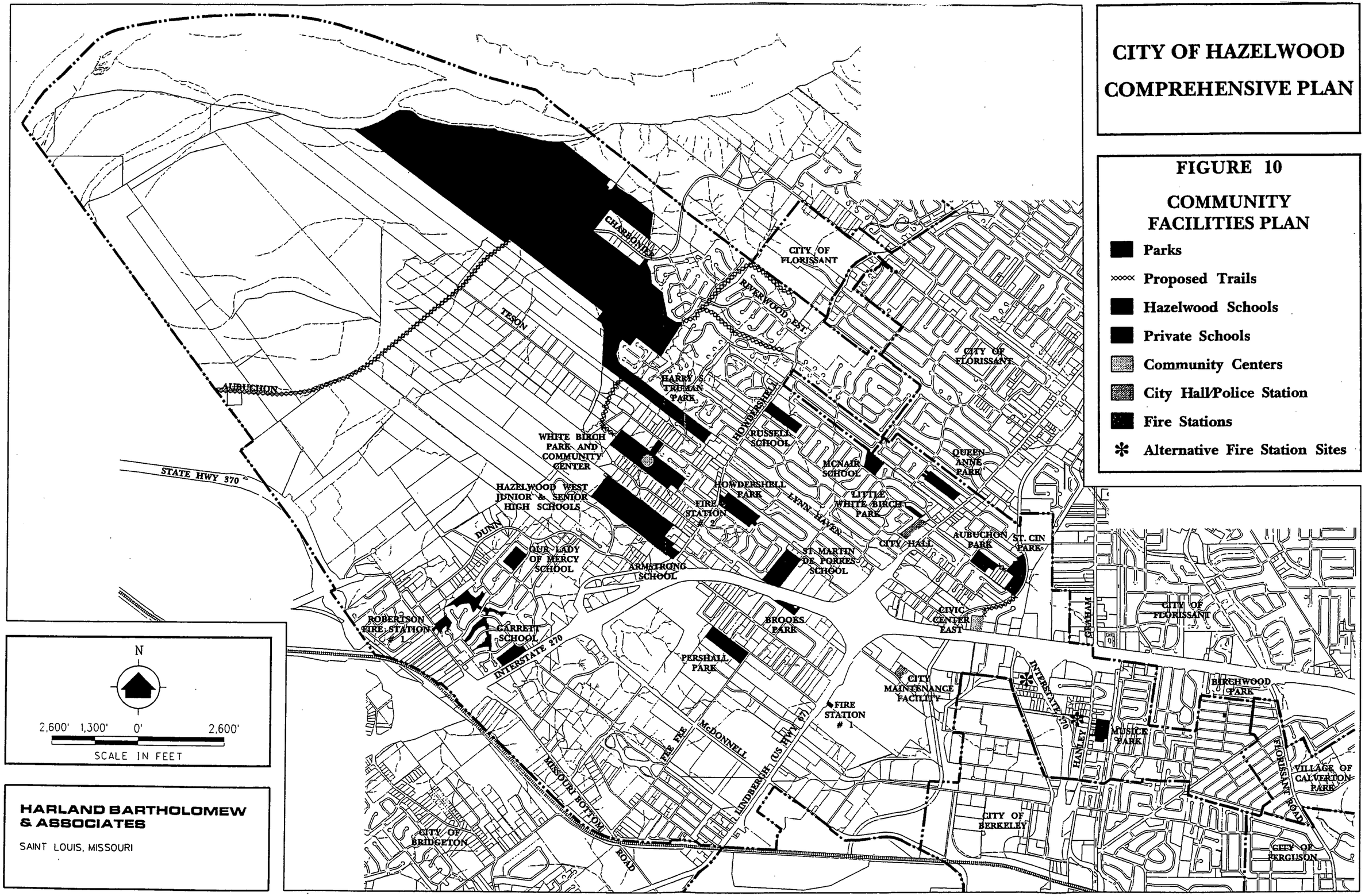
The city's two fire stations are adequate to meet current demands and the availability of assistance from nearby fire departments and fire protection districts through mutual aid agreements is sufficient. However, the city's Fire Station Number 1 is in excess of 30 years old and will need renovations in the future. Instead of investing a substantial amount of money in renovating this facility, a replacement facility was considered. A new Fire Station Number 1 could be located on Hanley Road, south of I-270, or near the intersection of Hazelwood Road and Pershall Road. The advantage of either of these two locations would be to put the station closer to the concentrations of apartments in the eastern portion of the city. Since these apartment complexes have high life hazards, they are more critical to be protected than the commercial and industrial buildings on Lindbergh which generally are protected by automatic sprinklers. Either of the two proposed sites would still allow for reasonable response times to the industrial areas of the city. Potential locations for a relocated Fire Station Number 1 are provided in Figure 10.

CITY OF HAZELWOOD
COMPREHENSIVE PLAN

FIGURE 10

COMMUNITY FACILITIES PLAN

- Parks
- Proposed Trails
- Hazelwood Schools
- Private Schools
- Community Centers
- City Hall/Police Station
- Fire Stations
- Alternative Fire Station Sites



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Recreation Element

The city is fortunate to have two community centers, a large number of parks and a substantial number of recreational programs available to all age groups. The Parks and Recreation Division is responsible for these recreational programs while the Public Works Department Maintenance Division is responsible for park maintenance.

COMMUNITY CENTERS

Hazelwood Community Center. The city opened the Hazelwood Community Center in 1975. This center is located at 1186 Teson Road and includes 32,000 square feet of space. The facility has a gymnasium capable of seating 400 people. A kitchen is located adjacent to the gymnasium which allows the space to be used for large receptions, banquets, and meetings. An arts and crafts room offers outdoor access to the preschool playground and an observation deck which has a view of the multi-purpose court and disc golf course. Two 25-person meeting rooms are included in the facility which are adjacent to an open lounge area with an efficiency kitchenette. A lounge, game room, weight room and offices are also located in the community center.

Hazelwood Civic Center East. A second facility was opened in 1990. Hazelwood Civic Center East is located at 8969 Dunn Road. This center includes a gymnasium with suspended walking/jogging track, weight room, game room, multi-purpose rooms, conference/reading room and office space. The center has three multi-purpose rooms, each capable of seating 75 individuals and containing kitchenettes.

EXISTING PARKS

The city maintains 16 parks with a variety of facilities and equipment. The city's Recreation Department operates recreation programs at a number of locations. The various parks and their characteristics are summarized in Table 13 and are located on the map in Figure 10.

Table 13
Hazelwood City Parks

Park	Acreage	Type of Park
Aubuchon Park	6.0 acres	Neighborhood Park
Birchwood Park	0.25 acres	Play Lot
Brookes Park	3.4 acres	Mini Park
Friendship Park	2.0 acres	Mini Park
Howdershell Park	13.5 acres	Neighborhood Park
Little White Birch Park	1.5 acres	Mini Park
Musick Park	6.6 acres	Neighborhood Park
Pershall Park	12.5 acres	Neighborhood Park
Queen Ann Park	8.0 acres	Neighborhood Park
Red Bud Park	4.0 acres	Mini Park
Rock Pointe Park	4.0 acres	Mini Park
St. Cin Park	10.0 acres	Neighborhood Park
Harry S. Truman Park	36.6 acres	Neighborhood Park
White Birch Park	35.5 acres	District Park
Wildflower Park	12.39 acres	Neighborhood Park
Wildlife Park	1.62 acres	Mini Park

Source: Booker Associates, Parks and Recreation Needs Analysis and Master Action Plan, 1996, and Superintendent of Parks and Recreation Division

GOALS AND OBJECTIVES

GOAL: Park and recreation facilities will be expanded and improved to maintain an optimum level of leisure and recreational services.

Objective: Provisions should be made to connect city parks to county and state parks in the area by means of pedestrian paths and trails.

Objective: Existing civic centers are good facilities and shall be maintained at their current level of service.

Objective: Renovation of existing aquatic facilities should be undertaken.

Objective: Development of an indoor swimming pool should be investigated.

Objective: Development of an indoor ice rink should be considered.

Objective: Development of a "Mathew Dickey-type" facility should be investigated.

Objective: A municipal-owned golf course, open to the general public, should be developed in a protected floodplain near the bluffs.

Objective: The Dunn Road facility should be developed further.

RECREATION PLAN

In December of 1996, a final Parks and Recreation Needs Analysis and Master Action Plan was completed for the city. Based on this recent park and recreation planning effort, the city's comprehensive plan does not need to replicate this document and that document is hereby incorporated into this plan by reference. Planned major park and recreation improvements are described below.

Park Connections

An objective of this plan is to investigate possibilities to connect existing city and county parks. A connection is planned between Harry S. Truman Park and the County's St. Stanislaus Park. Much of the land incorporated in this proposal currently belongs to St. Louis County. This connection is adjacent to the Missouri River Bluff overlooking the Missouri Bottoms. Additional connections are shown in the community facilities plan in Figure 10 and are described below.

1) Connect St. Cin Park and Civic Center East by using MSD right-of-way adjacent to Coldwater Creek;
2) Connect White Birch Park and St. Stanislaus Park by securing easements along the bank of the Aubuchon Creek;
3) Connect St. Stanislaus Park to developing areas in Missouri Bottoms by providing a trail along Aubuchon Road.

Indoor Pool

An aquatic feasibility study has been prepared for the city. This study developed conceptual plans for an aquatic center in White Birch Park at the Kline Pool site. An indoor leisure pool is proposed including a therapy pool, joint use bathhouse for the indoor and outdoor facility with a multi-purpose room and upgrades to the existing Kline Pool including zero depth entry, leisure components, a sand play area and pavilion in the outdoor complex.

Ice Rink

Renovation of the existing outdoor ice rink is planned. Plans include putting the rink under roof, and renovating the changing/warming room. Also considered is the possibility of enclosing the entire facility. There has been discussion about locating an ice rink more conveniently to primary roads and paths in the city for visibility and access.

Municipal Golf Course

Another objective is the development of a municipal owned golf course. While a location for this potential golf course has not been specifically identified, a logical location is in the Missouri Bottoms. If developed, the course should be located outside of the 100-year floodplain in areas with gentle relief. The city has commissioned a separate golf course feasibility study and that study is incorporated into this plan by reference.

Infrastructure Element

Infrastructure in Hazelwood can basically be divided into two categories: utilities; and streets and sidewalks. Utility services are not provided by the city. Most streets and sidewalks are maintained by the city.

UTILITIES

Utility services in the city are provided by a number of private and public utility companies. Water service is proved by St. Louis County Water Company and wastewater service is provided by the Metropolitan St. Louis Sewer District. Laclede Gas Company provides natural gas and Union Electric provides electricity. Telephone service is provided by Southwestern Dell.

Water Service

St. Louis County Water Company provides water service to Hazelwood and the surrounding area except for the City of Florissant. Florissant has its own water company although it receives its water from the county water company. The St. Louis County Water Company has four treatment plants, 3,855 miles of mains and distribution lines, and 31 storage tanks throughout the County which can pump 474,000 gallons of water per minute. The four water plants include the North County Plant located just northeast of Hazelwood on the Missouri River and the Central plant located on the Missouri River south of Maryland Heights. The North County Plant has a daily capacity of 91 million gallons while the Central plant has a daily capacity of 247 million gallons. The source of water for both of these plants is the Missouri River. The other two plants in the County use the Meramec River as their source. The water purification process used by the water company includes chemical coagulation, settling, sand filtration, chlorination, calcium softening and fluoridation.

Wastewater Service

The Metropolitan St. Louis Sewer District (MSD) provides wastewater (sanitary sewer) collection and treatment as well as storm water drainage service to a 520 square mile area including the City of St. Louis, north St. Louis County and most of south and west St. Louis County (the extreme western parts of the county are not included in the district).

MSD was created in 1954 by the voters of the City of St. Louis and St. Louis County and began operation in 1956. MSD is a special service district created by the Missouri Constitution.

MSD has 4,295 miles of sanitary sewer pipes which carry wastewater to the district's sewage treatment plants. MSD also has 1,780 miles of combined sewers which carry wastewater and stormwater in one pipe. These combined sewers are not efficient because during heavy rains a great deal of stormwater is carried to the treatment plants. There also is a problem with sanitary sewer overflows when too much water gets into the sanitary sewer pipes. This is caused by cracks in sewers, downspouts connected to sanitary lines, sump pumps or loose pipe joints. Overflows result in sewage discharging into creeks or wastewater backing up into homes and other buildings.

MSD treatment plants remove pollutants from 320 million gallons of wastewater per day. Two of these treatment plants are located in North St. Louis County. Because sanitary sewers rely mostly on gravity to move the wastewater, sewer lines and treatment plants are often designed to serve drainage basins. Hazelwood is primarily located within the Coldwater Creek area of the Missouri River Basin. Areas east of the city are located in the Bissell Point area of the Mississippi River Basin. The Coldwater Creek wastewater treatment plant provides secondary treatment and has a design capacity of 40 million gallons per day. The Bissell Point wastewater treatment plant provides secondary treatment and has a design capacity of 150 million gallons per day.

Stormwater

MSD is also responsible for stormwater drainage. The district has more than 2,260 miles of stormwater sewers to carry stormwater runoff to nearby creeks or streams. In addition, the district's 1,780 miles of combined sewers also carry stormwater runoff. A problem with combined sewers is that during heavy rains, the combined flows in these sewers is too great to be handled at the treatment plants and wastewater has to be released into the Mississippi River. Control of stormwater runoff has received considerable attention in recent years and MSD has identified approximately $600 million in stormwater improvements. In addition, MSD has estimated that correcting the problem of combined sewers would cost another $700 million.

Natural Gas

Natural gas service is provided by Laclede Gas Company. Natural gas is brought into the St. Louis area by two Mississippi River Transmission Corporation pipelines and two pipelines of the Missouri Pipelines Company. Laclede has underground natural gas storage in a sandstone formation under north St. Louis County which has storage capacity for 35

billion cubic feet of natural gas. Laclede also stores propane underground in north county in a cavern which has storage capacity of 800,000 barrels.

Electrical Service

Electrical service in all of St. Louis County is provided by Union Electric Company. The company provides service to parts of Missouri, Illinois and Iowa with a service population in excess of 2.7 million people. Union Electric operates nine generating plants with a capability of generating 7,536,000 kilowatts.

TELECOMMUNICATIONS

Telecommunications technology is divided among four categories: broadcasting (radio and television), cable television, computer networks and telephone services. However, this breakdown is becoming more artificial because phone companies can deliver video programming and cable companies can provide phone service. Telecommunications technology has exploded over the past several years and is destined to continue expanding rapidly. This expansion must be considered by cities in planning for the future. The basic types of telecommunications technology and issues to be considered in the near future are outlined below.

Broadcasting

Broadcasting provides video and audio programming over the airwaves to radios and televisions within range of a signal of a specific station. The technology is point to multi-point or a signal from a station to a large number of receivers. The physical capacity of the usable electromagnetic spectrum limits the number of frequencies available to broadcasters. To provide for the orderly allocation of these scarce frequencies, the Federal Communications Commission (FCC) has the authority under the Communications Act of 1934 to license broadcasters based on "public interest, convenience, and necessity."

Cable Television

Cable television sends video programming as analog signals over coaxial cable. Analog signals are measurable impulses of voltage and differ from digital signals which are gaining favor among telecommunications providers. Digital signals will be discussed further under the section on personal communication services (PCS). As with broadcasting, cable allows for primarily one-way transmission. Unlike broadcasting where viewers only receive what the broadcaster sends in a single signal, the subscribers select from a basic package of programming that may be supplemented with premium channels. Cable systems

currently carry approximately 75 channels of programming although the technology exists to carry over 500 channels.

Computer Networks

Computer networks and electronic information services have expanded rapidly over the past two decades. Accessing a network requires a computer, modem and phone line. Users dial the "host" computer of the network or service, and, once connected, can communicate over the network through the modem. The modem translates digital data from the sending computer into analog signals appropriate for phone lines. The best known computer network is the Internet, a noncommercial information highway that connects universities, laboratories, government bodies, and more than ten million individual users in 102 countries. These networks and electronic information services provide a multitude of functions. Some operate as electronic mail boxes and allow users to communicate via electronic mail (E-mail). Networks also provide access to electronic bulletin boards which allow users to post and read messages on specific topics.

Telephone Technology

Telephone technology has traditionally sent voice conversations by analog signals over networks of copper wires which link individual phones. Telephone companies use their switching technology to route millions of phone calls to the individual numbers dialed. Unlike cable or broadcasting, telephones are designed for point-to-point, interactive communication. Telephone networks are divided into local and long-distance carriers. Regional telephone companies operate local telephone networks within cities. These networks consist largely of copper wires, but many companies have upgraded their networks to use fiber-optic cables. Fiber-optic cables carry streams of digital information (bits of ones and zeroes) at the speed of light. This speed is hundreds of thousands of times faster than the speed information can be transmitted over copper wire. Long distance phone companies operate cross-country fiber-optic cables that run between cities.

With the expansion of telecommunication services, it is important to define the various types of telephone, cellular phone and digital personal communications systems (PCS) available and the technological implications of cellular and digital phones. This plan must consider the increasing demand for cellular and digital PCS phones and the need to plan for expanded fiber-optic services.

Recent technological developments have allowed telephone companies to expand beyond their traditional sphere to send video programming over their copper or fiber-optic wires. Video programming differs from that provided by cable or broadcasting. A video signal sent over a phone line goes to a single user and to every television in the area similar to a voice conversation goes only to the number dialed and not to every telephone. The

technology that allows telephone companies to switch millions of calls to the correct telephone also allows them to switch video programming to whomever request it. Telephone companies can sent out as many video signals as it has lines so a switched video network has as many channels as it has users.

Regional Phone Service

Southwestern Bell Telephone Company, a subsidiary of Southwestern Bell Corporation, provides local telephone service to portions of Missouri, Arkansas, Kansas, Oklahoma and Texas. All of St. Louis County is included in this service area. In 1996, there were more than 900,000 active phone lines in the St. Louis Metropolitan area controlled by Southwestern Bell.

Telecommunications Act of 1996

Congress enacted the federal *Telecommunications Act of 1996* P.L. No. 104-104 on February 8, 1996. One purpose of this Act is the deregulation of the telecommunications industry to provide a more competitive environment for wired and wireless telecommunication services in the U.S.

The 1996 Act preserves the authority of the City to regulate the placement, construction, and modification of Towers and Antenna Support Structures and to protect the health, safety and welfare of the public. In addition, the City has been granted the authority to enact legislation to regulate the construction, placement, and operation of telecommunications towers and antennae pursuant to its zoning powers delegated to the City by the State of Missouri.

The Federal Communications Commission (FCC) has exclusive jurisdiction over the regulation of the environmental effects of radio frequency emissions from telecommunications facilities, and the regulation of radio signal interference among users of the radio frequency (RF) spectrum.

Demand for Wireless Communication Facilities

In May of 1997, there were more than 43 million portable wireless telephones operating within the United States, including 350,000 personal communications services (PCS). To serve this demand, there were more than 22,000 cellular transmission sites (cellular transmission sites include various types of communication towers and antennae). The number of portable cellular telephones is expected to increase substantially in the future and the number of PCS units are projected to increase to 47 million by the year 2001. To keep up with this increase in portable cellular and PCS units, there will be an increasing need for more cellular and PCS transmission sites.

Cellular/PCS History

In 1974, the Federal Communications Commission (FCC) expanded the radio spectrum available to the public. The purpose of this expansion was to provide space for expanding cellular telecommunications technology. In 1978, a mobile radiotelephone system was tested in Chicago. That system, which was a miniature version of a large radio network, was named for the unit cells into which it divides an area. Each cell has a radius of about one to two and one-half miles. Over the next five years, the industry developed higher-quality transmission devices and cellular technology was marketed to consumers as car phones. Cellular technology made it possible for a caller to travel while talking with someone at a conventional telephone or with another mobile user. Over the past few years, personal communication services (PCS) have been developed and expanded to include hand-held portable phones and paging systems. Cellular technology is an analog based system while PCS is a digital system.

The January 1993 issue of *Consumer Reports* presented the results of a survey that indicated that during 1992 an average of 7,300 new cellular phone users were added each day. At the end of 1992, it was estimated that there were 10 million cellular phones in the U.S. This number increased to 24 million by the end of 1994 and was estimated at more than 40 million in September 1996. Time magazine estimated that in May of 1997 this number had increased to 43 million subscribers. A similar expansion occurred in cellular transmission sites. In the mid 1980s there were 384 sites. This increased to 17,920 in December of 1994 and increased to more than 22,000 sites in September of 1996.

Based on the increasing demand for mobile communication options, the FCC opened another portion of the airwaves for industry use in March 1995. Airwave rights were divided geographically into 99 licenses that went to commercial mobile radio service (CMRS) carriers nationwide. Through an FCC auction, licenses were awarded to the highest bidders among a combination of older and newly formed companies. These newly licensed carriers then began acquiring sites for towers and their accompanying equipment buildings that has spurred the demand for such sites.

Cellular Technology

Cellular technology differs from land-based communications (telephone lines), microwave or satellite communications systems because it is based on a network of short-range cell sites with a fixed capacity. The cells must be linked by cellular towers, microwave dishes, or ground-wired towers or the transmission will fail. In addition, if a cell is crowded by too many users, it must be split into two cells, each having its own radius. A single cellular phone service provider must have a number of dispersed antennae to successfully provide service.

Low-power mobile radio (cellular) communication is accomplished by linking a wireless network of radio wave transmitting devices such as portable phones, pagers or car phones, to conventional ground-wired communications (telephone lines) through a series of contiguous cells. This technology entails a signal being transmitted from a portable phone to the nearest cellular antenna. This signal is then relayed from the cellular antenna to the nearest land-based telephone line or microwave dish, and then to a central switching computer. The computer then sends the call to its destination. If the destination is a land-based telephone, the call is transmitted over telephone lines. If the destination is another mobile communication device, the call is sent to the closest cellular antenna.

Calls originate or are received from a wireless source because antennae share a fixed number of frequencies across the cellular grid. When a caller cannot successfully place a call or maintain a call (the call is "dropped"), the caller is either out of range or the nearest antenna is at full capacity. Calls originate within the radius of a cell antenna site. While the caller is moving in a vehicle, the call proceeds uninterrupted as the transmission is "patched" from one antenna to the next as the caller moves among the radii of various cell sites. While the caller is moving, the cellular antennas are automatically looking for an unoccupied frequency on the next antenna to enable continued transmission.

As the demand for cellular telecommunications increases, cells in a given area must be subdivided, or additional carriers must be permitted to operate there. The end result is the need for more antennas.

PCS Technology

PCS technology is also wireless and is similar to cellular technology although it operates on a network of small cells and uses a lower frequency in the spectrum to transmit data in a digital format. PCS operates in the form of "follow me calling" such that communication is routed to an individual rather than a telephone number via a more sophisticated version of a pager. The receiving end of the system is generally a phone, fax, video screen or a database. PCS systems are networked via cell sites which operate at higher frequencies on the electromagnetic spectrum than cellular phones. PCS frequencies are between 1,850 and 2,200 MHz and have small radii than cell technology. It has been estimated that by the year 2003 there will be 167 million PCS users which will require 100,000 cell sites.

Towers and Antennas

The height of wireless communications towers generally range from 50 to 200 feet in order to be taller than trees, buildings and other objects. Required height is generally proportional to a combination of the distance antennas can cover and the demand within their radius. Generally, higher towers cover a larger geographic area, but have a lower

service demand. These towers are known as coverage sites. Shorter towers generally cover smaller radii with high demand and are known as capacity sites. Towers may be freestanding cellular monopole towers, guyed towers and lattice towers which have three or four legs. Antennas are placed on these towers or can be placed on other tall objects such as power poles, water towers, or roofs of buildings. In addition, antennas can be placed inside of some tall structures such as church steeples. In order to receive approval from municipalities with concerns about aesthetics, wireless communications providers have developed camouflaged or stealth antennas which may be disguised as trees or flag poles.

The city has prepared an ordinance to control the placement, design, lighting, construction, and approval of communication towers including prohibitions on advertising.

GOALS AND OBJECTIVES

GOAL: Adcquate infrastructure will be available to support the further development and redcvelopment of the city consistent with the city's comprehensive plan.

Objective: The city shall coordinate with the various utility providers to ensure that adequate utilities are available as land develops and redevelops.

Objective: Use of existing rail sidings in the Robertson area should be encouraged as redevelopment occurs.

INFRASTRUCTURE PLAN

General

Most of the infrastructure necessary to support development in Hazelwood is provided by private and semi-public utility providers. For the most part, these providers have indicated that adequate infrastructure is or will be provided to support the development and redevelopment of the city as proposed in the land use plan. Additional infrastructure in the form of streets is primarily the responsibility of the city. New streets will be provided by developers as development occurs and major streets will be provided by the city consistent with the Thoroughfare Plan as outlined in the Transportation Element of this plan.

Wireless Communications Facilities

Based on the increasing demand for wireless communication devices including cellular phones and PCS phones, it is likely that the existing wireless communications

facilities in the city will not be adequate to keep up with demand. There will be additional inquiries of the City concerning locating such facilities within Hazelwood in the future. It is recommended that the City allow such facilities based on a set of policies prepared which are designed to protect the beauty and unique characteristics of the City. These policies also need to recognize the guidance set forth in the Telecommunications Act of 1996.

Based on a review of the Telecommunications Act of 1996, the regulations enacted by surrounding municipalities, and regulations of other municipalities similar to Hazelwood the following policies have been prepared to guide the approval of wireless communications facilities within Hazelwood:

Policy 1: It is the City's intent to be consistent with the Telecommunications Act of 1996.

Policy 2: The purpose of this plan and its implementation is to provide reasonable regulations for location and erection of communication antennae, concealed communication antennae, stealth antennae and communication towers.

Policy 3: The City recognizes the rights of individuals to erect and maintain small receive-only antennae including satellite dish antennae less than one meter in diameter;

Policy 4: Proposed regulations are intended to encourage competition in the telecommunications industry but discourage a proliferation of many communication towers or many buildings with unsightly communication antennae.

Policy 5: Stealth and concealed communication antennae are allowed and encouraged to be located in appropriate areas of the City subject to reasonable conditions enumerated in the City's zoning ordinance and additional reasonable conditions imposed by the City Council.

Policy 6: Wireless communications facilities shall only be allowed as conditional uses in nonresidential zoning districts.

Policy 7: Co-location of multiple communication providers on a single tower or other facility shall be accomplished whenever possible.

Policy 8: Any new communication tower or similar or suitable structure erected within the City shall provide for co-location of at least two other communication providers in the future.

Policy 9: Communication towers and other structures supporting communication antennae shall be inspected on an annual basis to ensure the integrity of such structure.

Policy 10: The design of any communication facilities shall maximize the use of building materials, colors, textures, screening and landscaping that effectively blend the facilities with the surrounding natural setting and built environment.

Policy 11: Wireless communication facilities shall be provided based on the following order of preference: concealed communication antenna, roof-mounted communication antenna, stealth communication towers, monopole towers, guyed towers.

Policy 12: For communication towers, all accessory uses, and any guy wire anchors, shall be subject to height and setback requirements generally applicable to principal uses in the district.

Policy 13: For guyed communication towers, all guy wire anchor locations, equipment shelter structures of buildings, fencing, and similar structures or improvements shall be located on the same parcel of land occupied by the communication tower.

Policy 14: No advertising signs or lights shall be allowed on any communication facility.

Policy 15: Any site containing a communication tower shall be surrounded by a sight-proof fence of at least six feet in height.

Policy 16: As a condition of approval, every wireless communication facility shall submit an annual report to the City documenting compliance with its conditional use permit and documenting compliance with all applicable federal regulations including regulations in effect when the permit was issued and any subsequently adopted or amended regulations.

Policy 17: These policies shall be implemented by adoption of a comprehensive set of amendments to the City's zoning ordinance.

Fiber Optics

There has been considerable discussion about the information superhighway. This information superhighway will consist of a fiber-optic network that will carry virtually

limitless television channels, home shopping and banking, interactive entertainment and video games, computer data bases, and commercial transactions. Technically a broadband communications network, the information superhighway will link households, business, and schools to virtually all available information resources. Rather than the traditional technology of analog signals and electromagnetic waves, the superhighway will carry all information (from voice to video) in the form of digital bits.

Completion of the information superhighway will require a substantial upgrade of existing networks including expanded use of fiber-optic technology, interconnection of existing networks, linking individual users to the network, and deployment of complex hardware and software to manage and direct the flow of information. It is apparent that the private sector will have the primary responsibility for constructing the network. Cable companies have had a competitive edge of the telephone companies in beginning construction. However, the telephone companies have steady streams of revenue and huge amounts of capital because of their local phone monopolies. Cooperation between the cable and phone companies will be key in constructing the information superhighway. Governments at all levels need to ensure that their regulations to not unreasonably hinder construction of the information superhighway.

In Hazelwood, it is imperative that the city cooperate with cable and telephone companies in the installation of fiber-optic lines. Road rights-of-way need to be available for this installation. In addition, the city should consider making provisions for easements or other means of ensuring that fiber-optic cable can be installed in all new subdivisions as they develop.

Municipal Finance Element

Missouri municipalities have a number of means of financing their operations and capital improvements. These techniques include property taxes and sales taxes, intergovernmental transfers, and special taxes and fees.

Hazelwood has annual revenues of approximately $13.3 million. This revenue is derived from a large number of sources including taxes, fees, permits and surcharges. These revenues are used to pay for capitol and operating expenses of the city.

The difference between capital and operating expenses is based on two criteria: cost and frequency. Operating expenses include personnel salaries and other routine expenses used in the normal day to day operations of the city. Capital improvement expenses are defined by the city as any project or item with a life of more than one year and a cost of over $15,000. A new public building is a capital improvement because it would cost more than $15,000 and have a life expectancy of more than one year. A police car is not a capital improvement because it would cost less than $15,000.

EXISTING REVENUE SOURCES

Property Taxes

A major source of local government revenues has traditionally been the property tax. However, there has been a steady and consistent decline in reliance on the property tax in Missouri cities since 1970. In 1994, approximately 14 percent of total revenues in Missouri municipalities were derived from property taxes compared to 16.3 percent in 1988. For cities with populations over 10,000, such as Hazelwood, the property tax generated only 13.5 percent of total revenue. Part of this decline in reliance on the property tax has been the cities' ability to generate revenue from other sources, specifically sales taxes. In Hazelwood, the property tax generates approximately $822,000 annually, or about six percent of the revenue needed to fund the city's expenses. This is based on a city tax rate of 31 cents per 100 dollars of assessed valuation. This rate has been lowered substantially by the city council over the past 40 years from an original rate of 50 cents per 100 dollars of assessed valuation.

Sales Taxes

General Sales Tax. Sales taxes generate the greatest amount of municipal revenue in Missouri. In St. Louis County, general sales taxes are collected county-wide and split among municipalities and the county based on a formula. The revenue from this general sales tax is used for general fund expenditures such as operating expenses. In addition to this tax, the state allows municipalities to levy a 1/2 cent capital improvements sales tax and a 1/2 cent transportation sales tax. For fiscal year 1997, the city estimates $3,672,280 will be derived from the general sales tax.

Capital Improvements Sales Tax One of the most important sources of capital improvements financing is the city's 1/2 cent capital improvements sales tax. This tax was approved by city voters to fund capital improvements. Funds can be used for streets, water mains, storm sewers, bridges, park improvements, public buildings, major equipment, and for maintenance of those improvements. Proceeds can also be used for debt service on a bond issue used to construct public improvements. It is estimated that this capital improvements sales tax will generate $926,480 per year in Hazelwood.

State Highway Funds

Municipalities with populations over 100 share 15 percent of the state highway fund. This fund includes revenues from the motor fuel tax, license and registration fees and one-half of the regular state sales tax on automobiles (municipalities also collect sales taxes directly on automobile sales). In 1994, these revenues provided 9.4 percent of all municipal revenues, up from 5.9 percent of their revenues in 1988. This increase is primarily a result of increases in the state motor fuel tax.

Currently, municipalities receive $19.54 per capita from the motor fuel tax, $8.88 per capita on motor vehicle taxes, and 10.5 cents per $100 assessed valuation from Road and Bridge taxes. For fiscal year 1997, Hazelwood estimates that it will receive $714,400 in gasoline taxes and $404,180 in Road and Bridge taxes.

Cigarette Taxes

Up until 1993, Missouri municipalities had the power to levy a cigarette tax. In 1993, the state legislature prohibited municipalities from increasing that tax. Within St. Louis County, all municipalities share in a county-wide five-cent cigarette tax. This tax is divided among the local governments based on population and the city receives $4.49 per capita per year. Hazelwood receives approximately $122,800 annually from this tax.

Utility Taxes

Municipalities receive a significant amount of revenue from utility taxes which produce 18.5 percent of total revenues for cities over 10,000 population. Most municipalities levy a tax based on gross receipts. In 1985, the state legislature provided that a city must reduce its utility franchise tax rate whenever the utility is granted a rate increase by the Public Service Commission in excess of seven percent unless the governing body adopts an ordinance to retain the existing utility tax rate. The city used to assess a tax of two percent on all utilities, but has eliminated utility taxes for residences. Hazelwood estimates it will receive $1,104,000 in gross receipts taxes in fiscal year 1997.

Non-property Taxes

Non-property taxes include auto licenses, court fines and business and liquor licenses. These taxes raise significant revenues for cities.

Auto Licenses. Cities may tax autos either on a flat rate basis or a horsepower basis. Most municipalities have not increased the motor vehicle tax for years, so revenue from this tax has been rather stagnant and declined from .5 percent of municipal revenues in 1988 to .3 percent in 1994. Hazelwood does not currently charge an auto license fee.

Liquor Licenses. State statutes limit municipal liquor licenses to one and one-half times the amount of the state liquor license. Such licenses account for only .2 percent of total revenues for municipalities in the state. For fiscal year 1997, Hazelwood estimates liquor license fees of $17,350.

Business and Occupation Licenses. Cities have considerable discretion on the method of taxing businesses and occupations. Some cities base license fees on gross receipts, some on number of employees, some by flat fee, and some by the square footage of the building occupied by the business. Some use a combination of these methods based on the type of business. For example, offices may be taxed based on the square footage of the office space. Cities are only authorized to tax those businesses and occupations that are specifically listed in the state statutes or in the city charter. Hazelwood divides these fees into three categories with projected fiscal year 1997 revenues as follows: manufacturers: $3,126,770; merchants: $385,700; services: $385,700.

Many cities have not adjusted business and occupation fees for many years and some cities do not do a good job of collecting such fees. In 1996, the Missouri Court of Appeals, Eastern District, upheld a license fee of $5,000 on billboards in the City of Bridgeton. This represents a potential new source of revenue.

Municipal Court Fines. Court fines and forfeitures are an important source of revenue for Missouri cities. In cities over 10,000 population, 3.3 percent of their revenues were generated from this source. The expense of operating a municipal court must be charged against the revenue collected. For fiscal year 1997, the city estimates municipal court fines will generate $353,800 in fees.

CAPITAL IMPROVEMENTS PROGRAM

The city is currently preparing its first capital improvement program (CIP) which will be a ten-year programming tool identifying needed capital improvements. The CIP will coordinate the financing and timing of each project to fit within the city's needs and financial capabilities. The CIP attempts to plan capital projects by considering the needs of the city on a long-term basis. Projects scheduled for the first year of CIP are incorporated into the city's annual budget. Projects programmed for subsequent years are approved on a planning or conceptual level and must be reconsidered in following years. Changing priorities and unexpected needs can change project priorities each year. Each year, the CIP must plan an additional year into the future and reconsider the previously listed projects in light of changing circumstances.

Financing Techniques

The techniques available to the city for funding capital improvements include Capital Improvements Sales Tax, General Obligation Bonds, Local Improvement Fund and Special Assessments, the Missouri Infrastructure Loan Program, and Tax Increment Financing. An alternative to purchasing capital improvements is the possibility of leasing some items. These financing techniques are described below.

General Obligation Bonds. The city has used general obligation debt in the past to finance major capital expenditures. The city is permitted by state statutes to incur general obligation bonded indebtedness up to ten percent of total assessed value with 57 percent voter approval. Such a bond could be structured to be repaid over 20 years. The city's capital improvements sales tax could be used to pay debt service.

Missouri Infrastructure Loan Program. The Missouri Economic Development, Export and Infrastructure Board (MEDEIB) provides infrastructure loans to local governments in amounts from $500,000 to $2 million per project. The interest rate on such loans is 7.25 percent plus a one-time charge of 2.25 percent for issuance. The loans are structured to preclude the necessity of a public vote, and are effective in meeting public facility needs that do not benefit the entire community. Repayment, however, must be made from current general revenues.

Tax Increment Financing. Tax increment financing (TIF) allows a city to capture the incremental increases in property taxes in a redevelopment area to pay for necessary improvements without increasing general obligation debt or general property taxes. Use of TIF financing requires a well defined redevelopment project area. Currently, there is only one TIF district in the city and this TIF was created in St. Louis County prior to the area being annexed by the city.

ISTEA Funds. Federal funds are available through the Intermodal Surface Transportation Efficiency Act (ISTEA) for a variety of transportation-related purposes. Enhancement projects that have been funded in the St. Louis area have included streetscape improvements along major roads. These funds are provided on a matching basis for approved projects.

FUTURE REVENUES

It is difficult to predict exact amounts of future revenues that will be available to the city to fund capital improvements. One source of funds that is sometimes difficult to predict is intergovernmental and restricted revenues.

Intergovernmental and Restricted Revenues

Hazelwood receives a small amount of intergovernmental revenue. The city has realized that it is not a good practice to rely heavily on these funds. Restricted Revenues, however, have provided significant funding for the city. These revenues include the State gasoline tax, motor vehicle taxes and fees, and the County road and bridge tax. These revenues are restricted to use for road and bridge maintenance and improvements and are based on the city's population.

Tax Increment Financing

The use of Tax Increment Financing in the city in the future could provide incentives for redevelopment and provide a good mechanism to pay for needed capital improvements. Two areas that seem to be potential TIF areas are the proposed Robertson industrial area and an area in the Missouri Bottoms located adjacent to 370. Both of these areas will need new collector roads to sustain development.

Increased Property Taxes

Increased property tax revenues are anticipated as a result of the land use plan. This will occur in the form of increase property values and will not be due to any increase in

property tax rates. The land use plan identifies many opportunities for new commercial and industrial developments. These developments will broaden the city's tax base.

Increased Sales Taxes

Increased sales taxes are also anticipated as a result of the developments proposed in the land use plan. While it is not anticipated that sales taxes will increase substantially, there are many opportunities for additional retail development. This development would contribute to general sales tax revenues and increase capital improvements sales tax revenues.

POTENTIAL REVENUE SOURCES

Currently Hazelwood makes use of a wide variety of potential sources for funding city programs and services. Additional sources would probably have to be assessed on residents of the city which is counter the city's trends over the past several years. One potential source of revenue is the personal property tax.

Personal Property Taxes

Some cities collect personal property tax in addition to property taxes. At one time, Hazelwood collected 50 cents per 100 dollars assessed valuation of personal property. This tax was subsequently lowered and eventually the city abolished this tax.

Billboard License Fees

A potential source of revenue for the city is a business license fee for billboards. As previously indicated, the courts have upheld a $5,000 business license fee on billboards in Bridgeton and a number of cities have decided to impose such a fee. Subsequent to the court decision, the Missouri legislature has given cities the option of imposing such a fee or to limit fees and provide additional regulations on the height, spacing and lighting of billboards. The city will need to decide whether to enact additional regulations on billboards which would limit the total number of billboards in the city or to assess a business license fee to increase city revenues.

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