


5-1994

UA3/8/1 Looking Toward the Future: Land Use Plan & Development Strategy

University of Kentucky. Landscape Architecture

Operation PRIDE

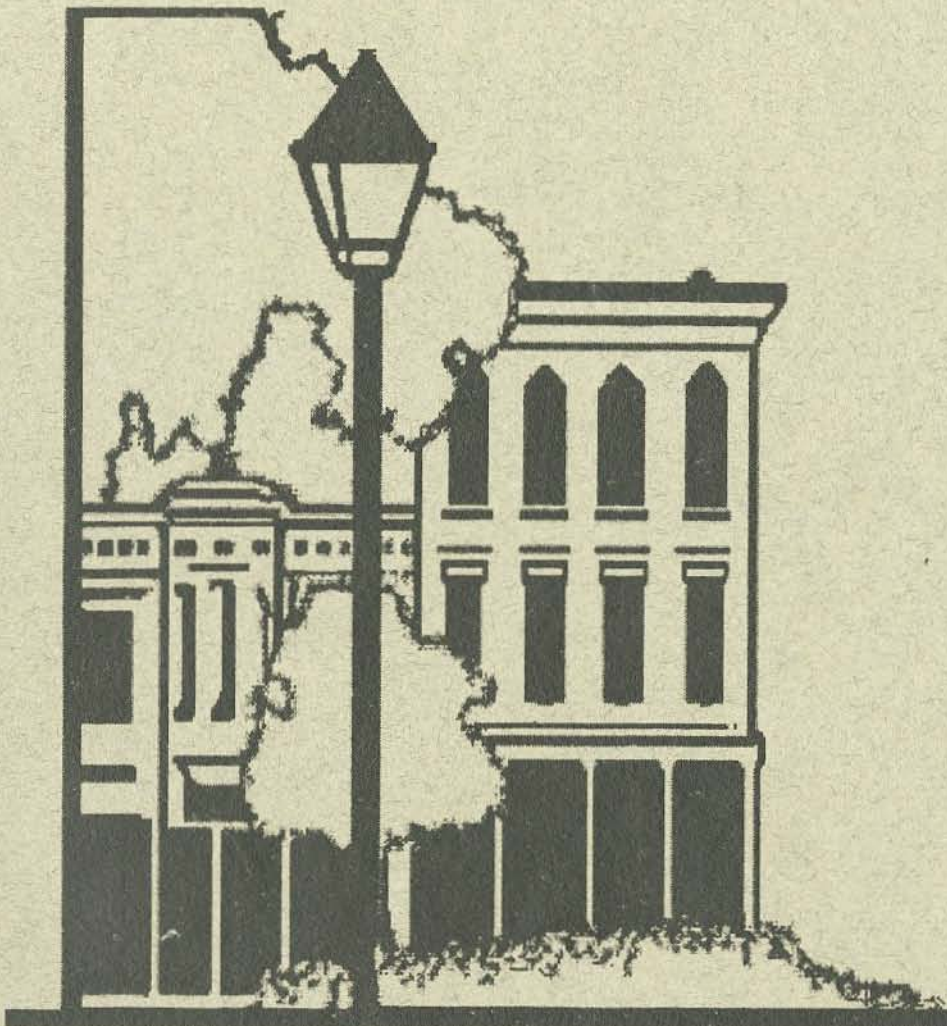
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LOOKING TOWARD THE FUTURE

LAND USE PLAN & DEVELOPMENT STRATEGY

PREPARED FOR:
OPERATION P.R.I.D.E.
BOWLING GREEN-WARREN COUNTY
KENTUCKY

PREPARED BY:
UNIVERSITY OF KENTUCKY
LANDSCAPE ARCHITECTURE
5TH YEAR DESIGN STUDIO
COLLEGE OF AGRICULTURE
DR. ORAN LITTLE, DEAN
MAY 1994

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1994 LANDSCAPE ARCHITECTURE FIFTH YEAR DESIGN STUDIO
UNIVERSITY OF KENTUCKY, LEXINGTON, KENTUCKY

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OVERVIEW

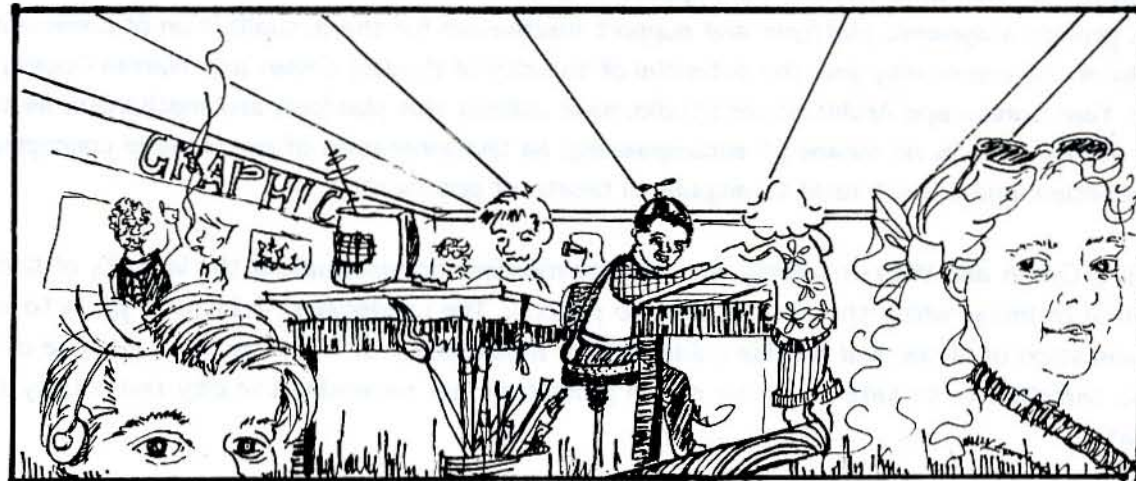
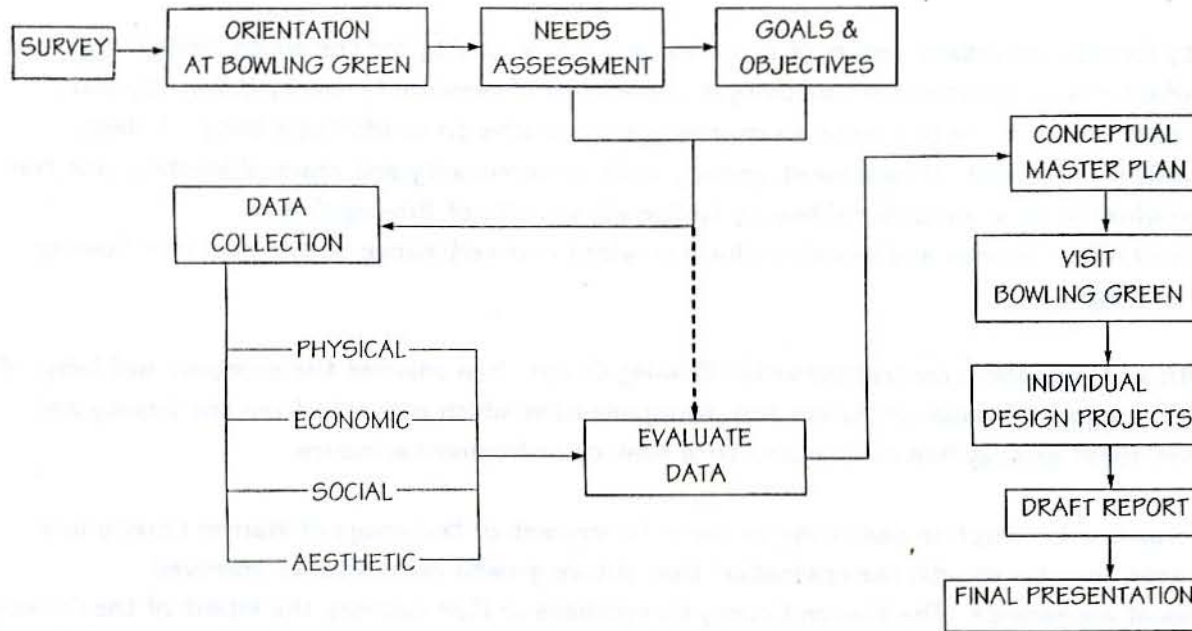
Bowling Green and Warren County form an important center of economic and social vitality for the south-central region of Kentucky. A sound base in manufacturing, agricultural productivity, the presence of Western Kentucky University and access to major transportation corridors combine to create an environment conducive to comfortable living. A deep-seated sense of community is easily recognizable. Unique karst geology adds to community and regional identity, and the county provides an important backdrop of rural agricultural beauty to the vibrant city of Bowling Green. The towns of Smiths Grove, Oakland, Plum Springs and Woodburn have provided counterbalance to the bustle of Bowling Green within more tranquil rural settings.

Warren County's history of growth and expansion, centralized within Bowling Green, has ensured the economic well being of its residents. It has, however, left a legacy of visual confusion and disorganization, which detracts from the beauty and character of the area. In addition, karst geology has contributed to a host of environmental issues.

Operation P. R. I. D. E is a civic organization which is dedicated to the enhancement of the image of Warren County and Bowling Green. This project has been undertaken with the realization that future growth necessitates improved management of land uses and visual appearance. The Warren County Comprehensive Plan outlines the intent of the County to initiate growth while limiting the impacts of growth on the environment. The Comprehensive Plan and Operation P. R. I. D. E. provide a dynamic platform and support mechanism for the actualization of community improvement, based on the needs of the community and the potential of the city of Bowling Green and Warren County. We the University of Kentucky Fifth Year Landscape Architecture Studio, have utilized this platform and mechanism as the basis for the development of this study. It is by no means all encompassing, as the generation of our ideas is conceptual, constrained only by possibilities, and cannot hope to engage all facets of practicality.

Bowling Green and Warren County must be commended for reevaluating the identity of their community and establishing the kind of image which the citizens wish to project. The Landscape Architect's job is to stimulate thinking through the presentation of ideas, and provide guidelines for development of the intent and purpose of the community. Ultimately, it is up to the citizens to take an active role in promoting and enhancing the city and county and in directing the quality of Growth.

PLANNING DESIGN FLOW CHART



PLANNING DESIGN PROCESS

To develop a Conceptual Master Plan for Bowling Green - Warren County, the following methodology was used:

1. View the City of Bowling Green, Warren County and the surrounding region.
2. Attend an orientation meeting with representatives of P.R.I.D.E. and the City of Bowling Green.
3. Determine the needs of Bowling Green/Warren County from the objectives voiced during the orientation meeting and personal observation.
4. Establish goals and objectives and write scope of work.
5. Collect data for inventory on both regional and local level from the perspective of the following subgroups:
 - A. Physical factors
 - B. Social factors
 - C. Economic factors
 - D. Visual quality
6. Evaluate data for analysis; generate needs assessment; establish issues; identify opportunities/constraints.
7. Compile analysis of factors and develop conceptual design solutions.
8. Evaluate whether the design recommendations satisfy established objectives.
9. Visit Bowling Green for interim presentation and client input; rework plan for final draft.
10. Synthesize individual site designs to address specific issues.
11. Draft report and prepare presentation.
12. Present conceptual master plan, individual designs, and written report to Operation P.R.I.D.E. and citizens of Bowling Green and Warren County.

GOAL AND OBJECTIVES

GOAL

Provide Warren County and the City of Bowling Green with a growth management plan that offers opportunities for community development, conserves natural resources and enhances the unique quality of life while creating an environment in which man and nature can exist in productive harmony.

OBJECTIVES

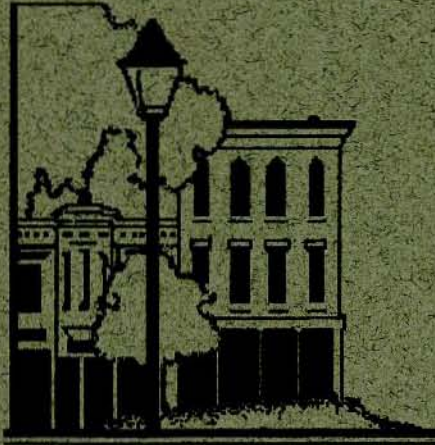
- o Enhance the image of the city.
- o Recognize the sensitive nature of karst geology and the implications for ground water pollution.
- o Preserve natural resources and unique features of Bowling Green, Warren County and the region.
- o To assess present and future social needs.

ISSUES

- o Impact of growth on infrastructure, recreational facilities, residential, commercial and industrial land uses and community services
- o Effective utilization of vacant land
- o Vehicular and pedestrian access and circulation
- o Compatibility of existing and proposed land uses

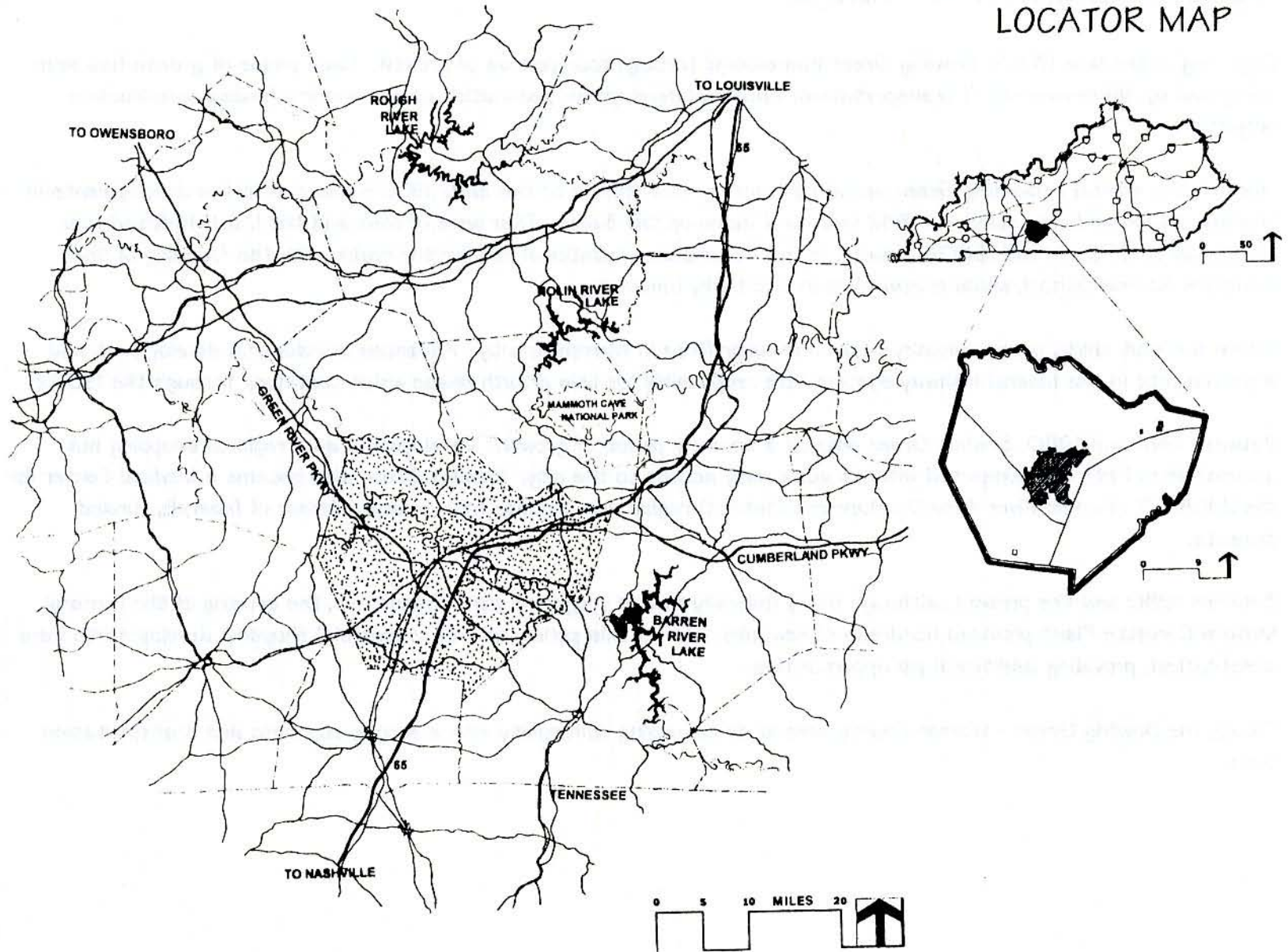
Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher 'standard of living' is worth its cost in things natural, wild, and free.

Aldo Leopold, A Sand County Almanac. 1966



HISTORICAL PERSPECTIVE

LOCATOR MAP



HISTORIC GROWTH PATTERNS

Beginning in the late 1700's, Bowling Green has evolved through four periods of growth. Each phase of growth has been influenced by improvements in transportation, industrial development, education or government funded construction projects.

Most of the growth in Bowling Green occurring from the mid 1800's to the early 1900's was due to the developments in transportation and education. In 1842 locks and dams on the Barren River were opened and the L & N Railroad was completed in 1859. In the 1880's, Bowling Green became an educational hub for the region with the founding of the Southern Normal School, which is now Western Kentucky University.

Within the next thirty years industry became a major force in Warren County. Advances in industrial development and improvements in the federal highway system were responsible for this growth phase which continued through the 1950's.

Between 1961 and 1980, Bowling Green enjoyed a booming period of growth. Development as a regional shopping hub occurred when I-65 was completed with its quick easy access to the city. Bowling Green also became a Medical Center for the B.R.A.D.D. (Barren River Area Development District) region and profited from a large number of federally funded projects.





Between 1980 and the present, although many federally funded programs were phased out, the opening of the General Motors Corvette Plant provided hundreds of new jobs. During this period several commercial shopping developments were constructed, providing additional job opportunities.

Today, the Bowling Green - Warren County area is an expanding community with a strong economic and transportation base.

HISTORIC GROWTH PATTERNS BOWLING GREEN



LEGEND

-  1797-1933
-  1934-1961
-  1961-1980
-  1980-1994



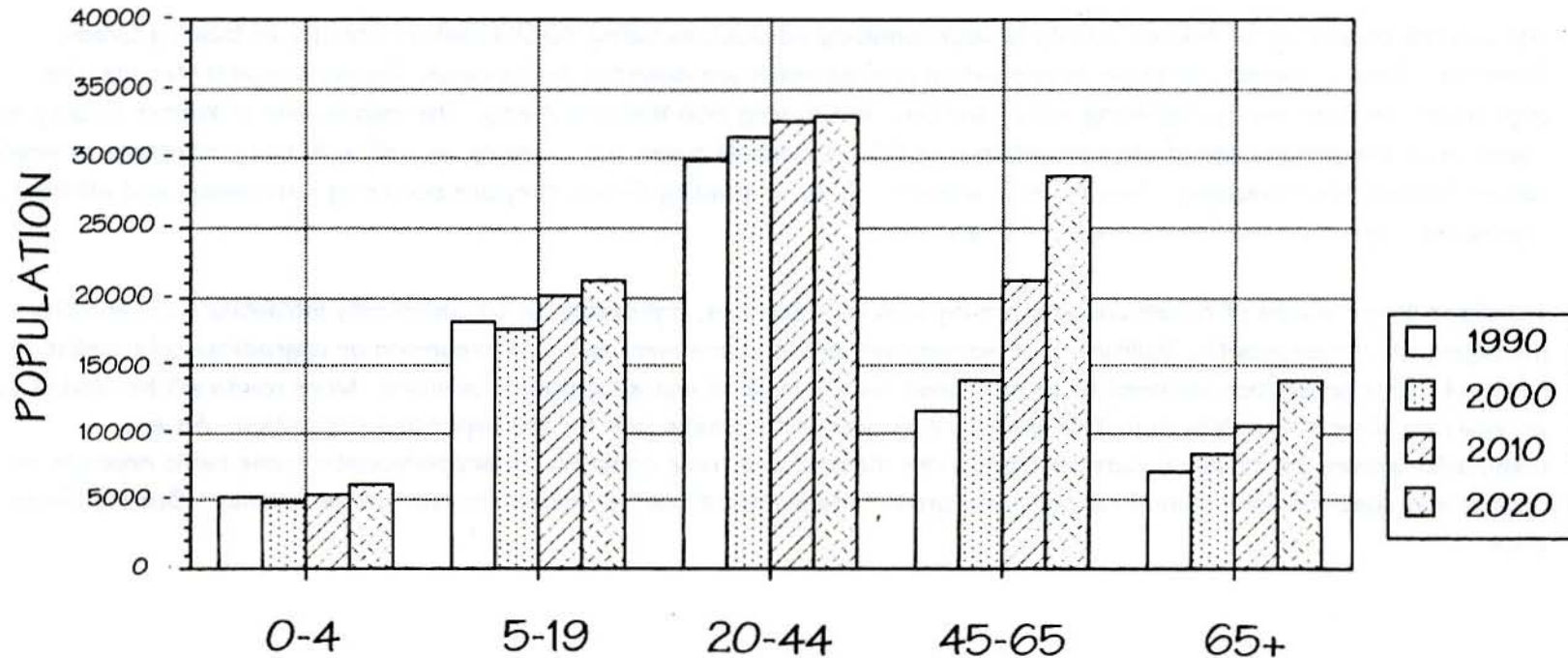
	1990	2020
TOTAL POPULATION		
WARREN COUNTY	76700	89000
BOWLING GREEN	43000	50000
AGE CATEGORY		
0-4	4250	6290
5-19	18290	21170
20-44	29770	33040
45-65	11710	28810
over 65	7140	13880
MEDIAN AGE		
	27	38

DEMOGRAPHICS

The current population of Warren County is approximately 78,000, including 43,000 within the city of Bowling Green. There have been a number of trends in population change which are expected to continue. During the past decade, the population has been slowly migrating out of the City and moving into Warren County. The median age of Warren County is rising, as is the percentage of the population over 65. Household types are changing as well, with the percentage of single parent households increasing. These trends are not unique to Bowling Green, they are occurring nationwide, and will have a significant impact on the future needs of this area.

The three major issues of future concern are expansion of services, improvements to community infrastructure, and the management of new growth. Utilities such as sanitary and storm sewers will need expansion or upgrading/replacement. Fire and Police protection will need to be increased, as will medical and educational facilities. More roads will be needed to access new home sites. New industrial parks will be needed to create jobs for the expanding population. As any community grows, its infrastructure becomes more massive and more complex. To accommodate these basic needs in an orderly and cost-efficient manner, a long-term growth management plan is needed for the Warren County - Bowling Green area.

WARREN COUNTY POPULATION DYNAMICS



This graph illustrates the projected population increase in each age group over ten year intervals. The 0-4 age group and the 5-19 age group will maintain fairly constant levels, increasing by about 2000 and less than 3000 respectively, by the year 2020. The need for educational facilities most associated with these groups will be for new subdivision locations; existing locations will not have exceeded their capacity. The 20-44 age group will increase steadily by about 3300 persons. This group will be concerned with the availability of affordable housing. Also, with only moderate expansion of this primary work force group, reliance on employees residing in the region surrounding Warren County will continue. Further housing and service needs will arise due to the immense increase in the 45-64 age group. Expected to increase by over 17,000, this group is in need of higher paying jobs, dwellings with more amenities and active recreational facilities. Population in the 65 and over age group will also increase substantially, with the addition of 7000 more seniors. Their needs will include increased health care, more specialized housing needs, and passive recreation.



INVENTORY



KARST GEOLOGY

Warren County is located within the vast limestone geologic structure of the Pennyroyal Plain. It is the source of abundant lakes, rivers and cave systems which lend the area its unique geographic identity. Karst topography is characterized by the presence of highly soluble limestone rock which surface water and groundwater slowly dissolve. This eroding process enlarges surface and subsurface cracks to form the sinkholes, caverns and underground conduits of the Karst drainage system.

ISSUES AND IMPLICATIONS

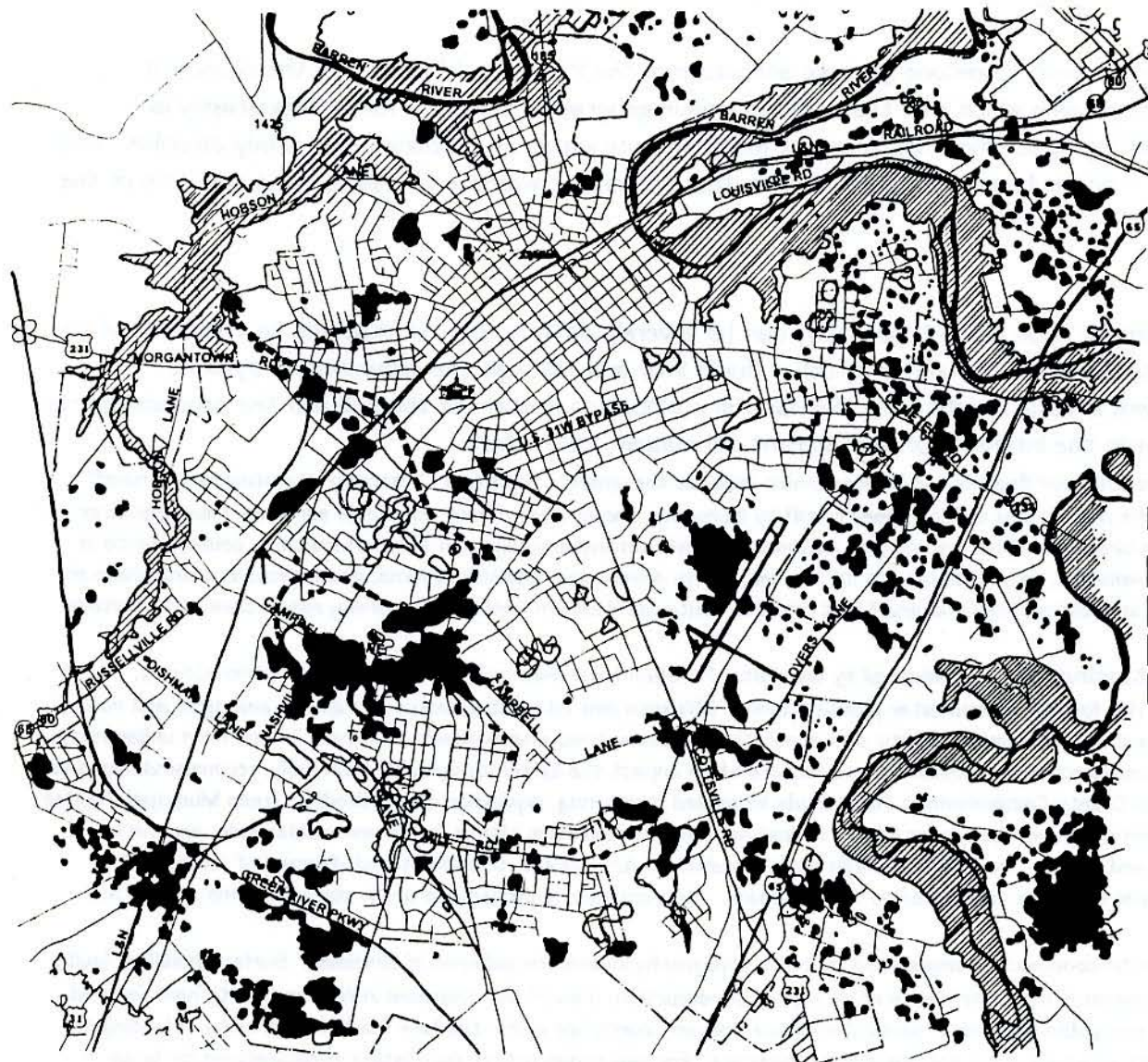
The impact from human development upon karst topography can be severely detrimental. Limitations to intense land use of karst topography relate to the rapid flow of water or other fluids into and through the groundwater system. Percolation is so rapid that there is little benefit from the natural purification system of the soil and the groundwater is adversely affected. An increase in the intensity of development will magnify this effect.

- o **Stormwater Runoff** -The 100 year floodplain in Bowling Green includes the sinkhole floodplain. Presently, the stormwater runoff drains into the karst system under the city. Urban use increases runoff by increasing the amount of non-permeable surfaces, thus a greater amount of stormwater runoff fills the sinkholes. Filled and clogged sinkholes diminish natural drainage and floodwaters carry contaminants in increased concentration. Sinkhole easements, recommendations for ditches, storm sewers and retention basins, and improved construction of drainage wells are currently in place. In addition, the Cave and Karst Studies Center at Western Kentucky University researches and monitors the groundwater quality.





- o **Sewage and Other Contaminants** - As indicated by the Water Pollution Index inset map, a large area of Warren County, especially within Bowling Green, is at risk for high groundwater pollution levels. Effluents sink into water tables too quickly and spills and buildup of toxins are an ongoing problem. Bacteria from on-site septic and absorption systems, toxic and explosive chemicals leaked from underground storage tanks, and contamination from agricultural substances are factors which impact the karst topography. Currently, recommendations set forward in the Bowling Green - Warren County Comprehensive Plan include increased monitoring, expansion of the Bowling Green Municipal Utilities' sewer system, identification of problem areas, workshops for citizen education, sewage treatment plants for all new subdivisions, and better regulation of floodplain construction and usage. The EPA has made recommendations for storage, treatment and disposal of toxins and chemicals. Agricultural areas are under separate consideration for regulation. Also, emergency procedures are in place for fume release and other situations.

- o **Construction** -Limitations to construction engineering on karst topography involve the collapse of sinkholes. Surface ponding, faulty drainage, well design and leaking underground pipes are issues which impact construction. Few of the collapses in Warren County have involved structures, but the potential for property damage exists, particularly since Warren County lies within the New Madrid Fault zone. Flooding of structures located within shallow sinkhole areas is a more prevalent occurrence. For new construction, foundation investigations for large buildings, including soils and bedrock borings are recommended. Discontinuation of sinkhole filling, identification and repair of collapses, and the removal of stormwater drainage away from structures are all presently advised.

KARST GEOLOGY/ HYDROLOGY BOWLING GREEN

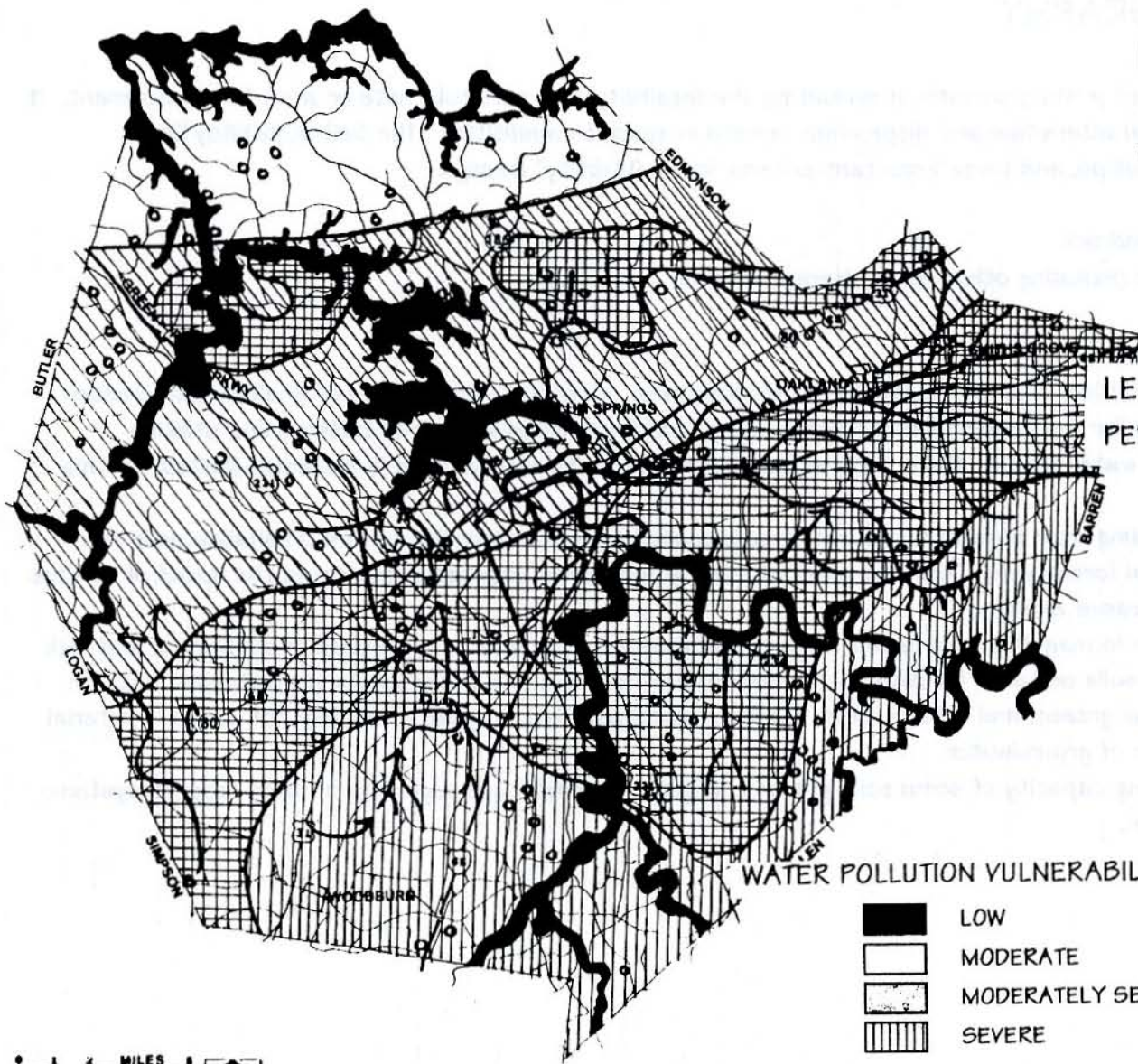


LEGEND







-  SINKHOLE
-  100 YR. FLOODPLAIN
-  LOST RIVER ROUTE
-  SUBSURFACE DRAINAGE



KARST GEOLOGY/ HYDROLOGY WARREN COUNTY

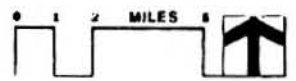


LEGEND PERCENT SINKHOLE COLLAPSE

-  1%
-  9%
-  24%
-  66%
-  CAVES
-  FLOODPLAIN

WATER POLLUTION VULNERABILITY

-  LOW
-  MODERATE
-  MODERATELY SEVERE
-  SEVERE



SOILS AND TOPOGRAPHY

The soil/slope relationship is of primary concern in evaluating the feasibility of a particular site or area for development. It is the combination of soil characteristics and slope which results in specific capabilities. The Soil Suitability Chart demonstrates these relationships, and three important criteria for "buildability" emerge:

- o range of slope
- o depth of the soil to bedrock
- o predominant soil type (including other listed characteristics)

ISSUES AND IMPLICATIONS

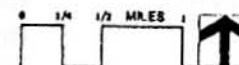
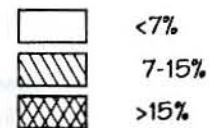
- o Limitations on construction capability exist due to shallow soils. Construction in areas of shallow soils creates engineering challenges for the design of structural support and for the installation of underground utilities (especially sewer and water lines). The building suitability of sites with shallow soils is extremely limited for this reason.
- o The potential for flooding from surface water runoff is increased when construction occurs on shallow soils which overlie karst geological formations. Disturbance of existing ground cover vegetation increases the speed of surface water runoff and increases erosion.
- o Groundwater pollution is magnified and septic system inefficiencies occur due to the speed of infiltration and lack of filtering of shallow soils on karst formations. Construction increases the potential for groundwater pollution from chemicals, oil and grease, and other toxins. Septic system disposal in areas of shallow soil causes bacterial and chemical pollution of groundwater.
- o The poor weight-bearing capacity of some soils presents engineering challenges regarding building support systems and road construction.

SOILS AND TOPOGRAPHY BOWLING GREEN



DEPTH TO BEDROCK	KEY	SOIL TYPE
0-27"	BnC	BAXTER CHERTY SILTY CLAY LOAM
	CoD	CANEYVILLE ROCK OUTCROP COMPLEX
	CoE	CANEYVILLE ROCK OUTCROP COMPLEX
20"-40"	CoB	CANEYVILLE SILT LOAM
	CoC	CANEYVILLE SILT LOAM
30"-42"	FnC	FREDONIA SILT LOAM
	FnC	FREDONIA URBAN LAND COMPLEX
50"-75"	La	LAWRENCE SILT LOAM
	No	NOLIN SILT LOAM
80"-90"	CxB	CRIDER SILT LOAM
	CxC	CRIDER SILT LOAM
	PeA	PEMBROKE SILT LOAM
	PeB	PEMBROKE SILT LOAM
	PfCS	PEMBROKE SILTY CLAY LOAM
	PfB	PEMBROKE URBAN LAND COMPLEX
	PfC	PEMBROKE URBAN LAND COMPLEX
	PfC	PEMBROKE URBAN LAND COMPLEX
90"-96"	BaB	BAXTER CHERTY SILT LOAM
	BaC	BAXTER CHERTY SILT LOAM
	BaD	BAXTER CHERTY SILT LOAM

SLOPE



SOIL TYPES AND SUITABILITY - WARREN COUNTY

This table demonstrates the range of soil types and suitabilities of soils within Warren county and Bowling Green. The Soil Maps of the County and City demonstrate the area of each soil type. Depth to bedrock is specifically indicated. Each soil type is classified according to the following criteria:

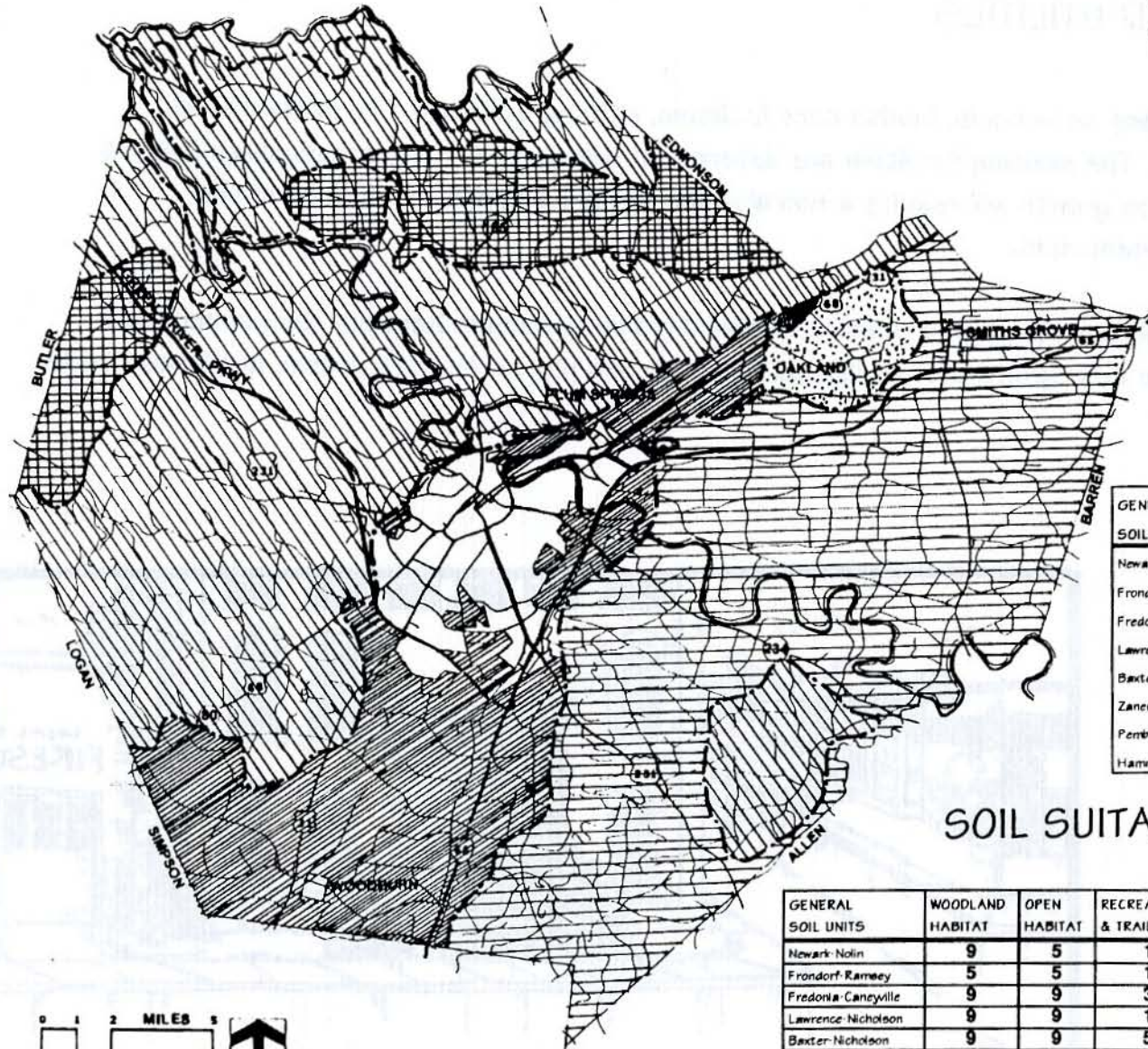
- o soil composition, permeability, depth to bedrock, moisture capacity, shrink-swell potential, fertility, pH, soil strength, and range of slope.

Each soil is evaluated for its suitability for the following land uses:

- o urban use (buildability), roads, high-intensity recreation, low-intensity recreation, rowcrops, pasture, and wildlife habitat.

KEY	TYPE	DESCRIPTION AND SUITABILITY
BaB-BaC-BaD	Baxter	The Baxter cherty silt loams are deep, well drained soils that are suited to most land uses.
BbC3-BbD3	Baxter	The Baxter cherty silty loams are shallow, severely eroded, well drained soils that are best suited for low-intensity development such as wildlife habitat or recreation.
CaB-CaC	Caneyville	The Caneyville silt loams are moderately deep, well drained soils suitable for light cultivation, hay, pasture, and recreational use.
CoD-COE	Caneyville	The Caneyville Rock outcrop complexes have strips of rock outcrops, ledges and boulders along sideslopes. They are very shallow, well drained soils with fair suitability for pasture and wildlife.
CrB-CrC	Crider	The Crider silt loams are deep, well drained soils of the limestone uplands that are suitable for most land uses.
FeC	Fredonia	Fredonia silt loam is a moderately deep, well drained soil suited for pasture, light cultivation, low-intensity recreation and wildlife habitat.
FnC	Fredonia	Fredonia urban land complex is a moderately deep, well drained soil. Although limited by steep slopes, shallow depth to bedrock, erosion and flooding, a large portion of the City of Bowling Green is built on this soil.
La-No	Lawrence & Nolin	Lawrence and Nolin silt loams are deep, nearly level soils in the floodplain that are suited for row crops, hay, pasture and wildlife habitat.
PeA-PeB-PeC	Pembroke	The Pembroke silt loams are deep, well drained soils suitable for all uses.
PfC3	Pembroke	Pembroke silty clay loam is a deep, well drained soil suited for all uses.
PrB-PrC	Pembroke	Pembroke urban land complex is a deep, well drained soil suitable for all uses.
	Pits	Areas where excavation has taken place. Soils and/or underlying materials have been removed.
	Miscellaneous	There is no land use suitability assigned.

SOIL SUITABILITY WARREN COUNTY



LEGEND

	9	SLIGHT
	7	MODERATE-SLIGHT
	5	MODERATE
	3	MODERATE-SEVERE
	1	SEVERE

SOIL CHARACTERISTICS

GENERAL SOIL UNITS	SLOPE	DEPTH TO BEDROCK	SOLUM THICKNESS
Newark-Nolin	0-2%	60"+	22-40"
Frondorf-Rameey	6-40%	10-40"	10-40"
Fredonia-Caneyville	2-35%	20-40"	20-40"
Lawrence-Nicholson	0-6%	60"+	40-80"
Baxter-Nicholson	0-30%	60"+	40-100"
Zaneville-Sadler	0-12%	40-100"	36-70"
Pembroke-Crider	0-12%	60"+	60-100"
Hammock-Baxter	2-30%	60"+	60-100"

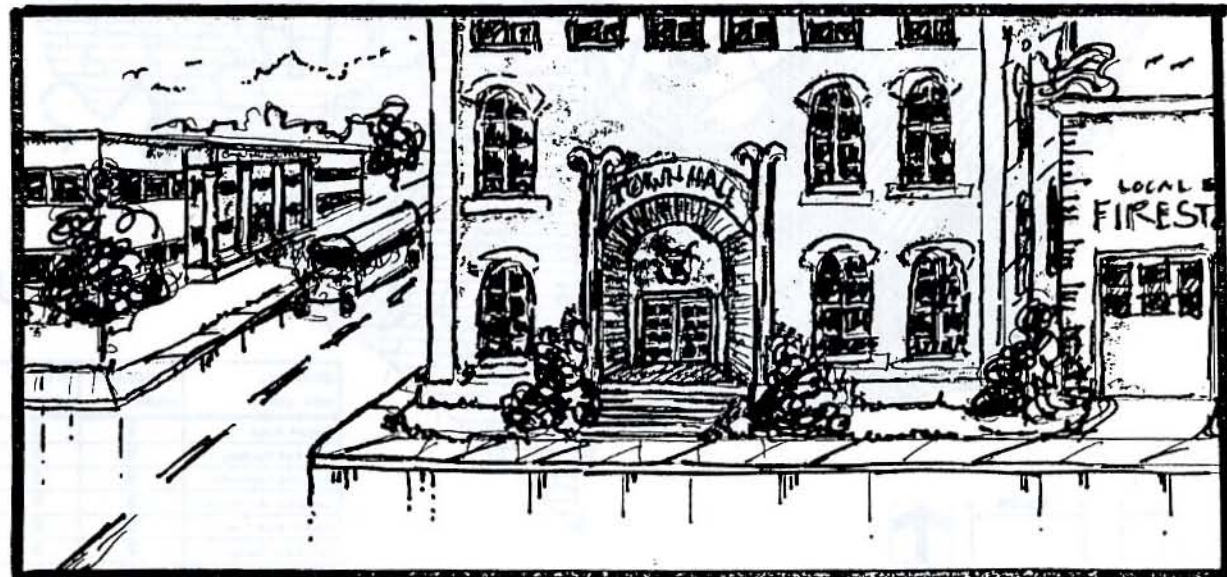
SOIL SUITABILITY MATRIX

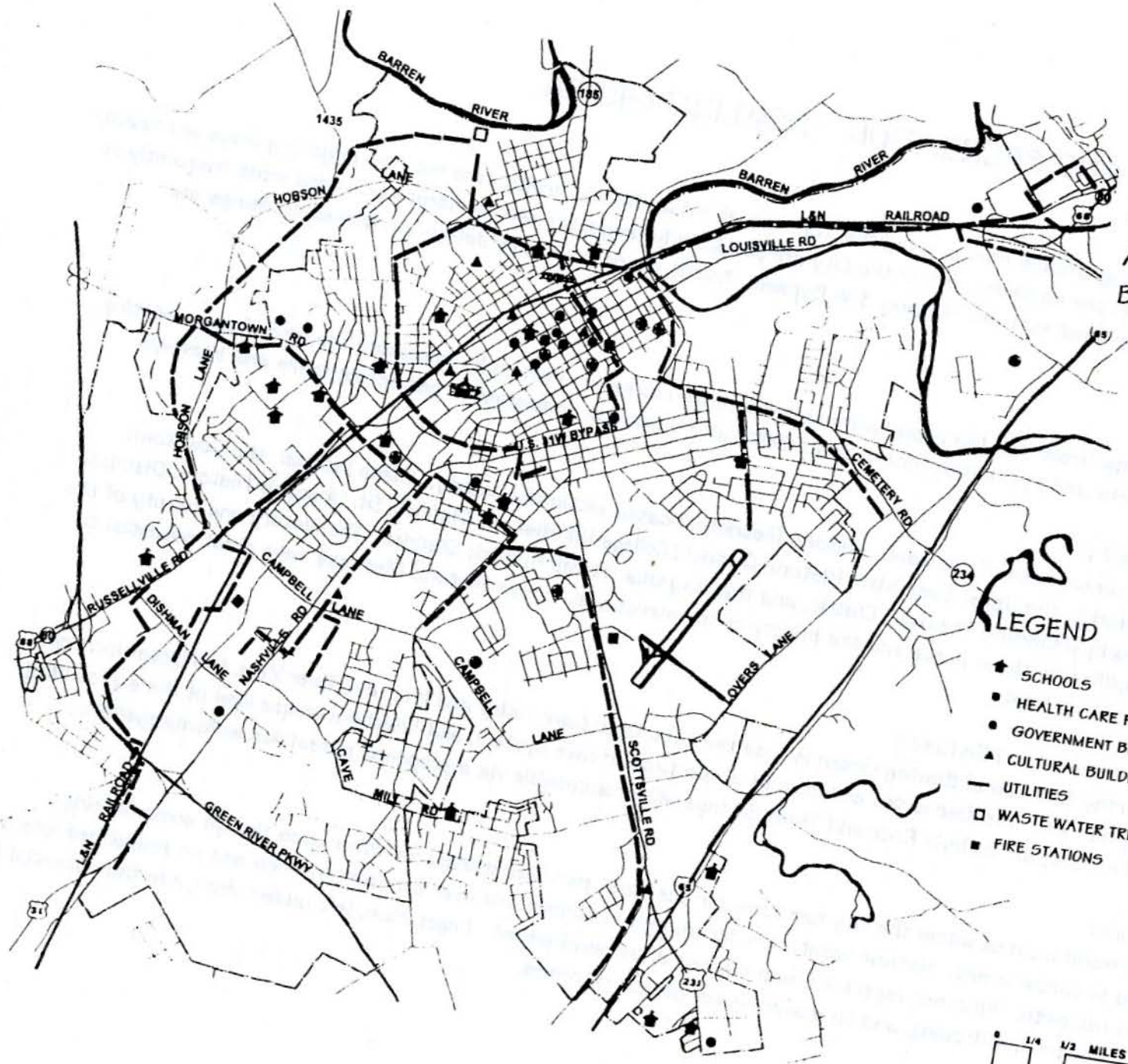
GENERAL SOIL UNITS	WOODLAND HABITAT	OPEN HABITAT	RECREATION & TRAILS	URBAN	CULTIVATION	WOODLAND MGMT.	PASTURE
Newark-Nolin	9	5	1	9	7	9	5
Frondorf-Rameey	5	5	1	9	1	9	1
Fredonia-Caneyville	9	9	3	9	3	7	5
Lawrence-Nicholson	9	9	1	9	5	7	5
Baxter-Nicholson	9	9	5	5	9	5	5
Zaneville-Sadler	9	9	5	5	7	9	7
Pembroke-Crider	9	9	9	7	7	9	9
Hammock-Baxter	9	9	7	9	7	9	7

INSTITUTIONS AND UTILITIES

INSTITUTIONS - Identified as schools, health care facilities, cultural buildings, fire stations, and governmental buildings. The existing facilities are determined adequate for the community's current needs however population growth will require a reevaluation of future needs as outlined in the socio/cultural needs assessment.

UTILITIES - Refer to the sanitary sewer system. Presently the system is handling the community's needs. However, as the area grows and additional demands are placed on the system, it will need to be upgraded.

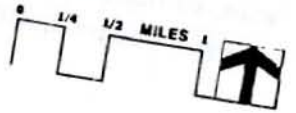




INSTITUTIONS
AND UTILITIES
BOWLING GREEN

LEGEND

- ★ SCHOOLS
- HEALTH CARE FACILITY
- GOVERNMENT BUILDINGS
- ▲ CULTURAL BUILDINGS
- UTILITIES
- WASTE WATER TREATMENT PLANT
- FIRE STATIONS



CIRCULATION AND RECREATION - BOWLING GREEN

CIRCULATION

As a result of Bowling Green's role as a regional commercial, industrial and health care hub, the major highways are heavily traveled. Streets in the southern part of the City are particularly congested with accidents occurring most frequently in the vicinity of Greenwood Mall and Highway 31W Bypass. Traffic snarls caused by delays at railroad crossings are common.

RECREATION

The City of Bowling Green has the opportunity to enhance its recreation system by increasing the size of some existing neighborhood parks and by creating better accessibility with a network consisting of pedestrian trails and bikeways.

HISTORIC DISTRICTS

Bowling Green contains six of the seven Historic Districts located within the county. These include: the Downtown Commercial District, the Upper East Main Historic District, College Hill Historic District, St. Joseph's Historic District, Western Kentucky University Thematic District, and the Magnolia Street Historic District. The history and beauty of the city are exemplified by these areas and the beauty of the structures. These Historic Districts have great potential to generate tourist interest.

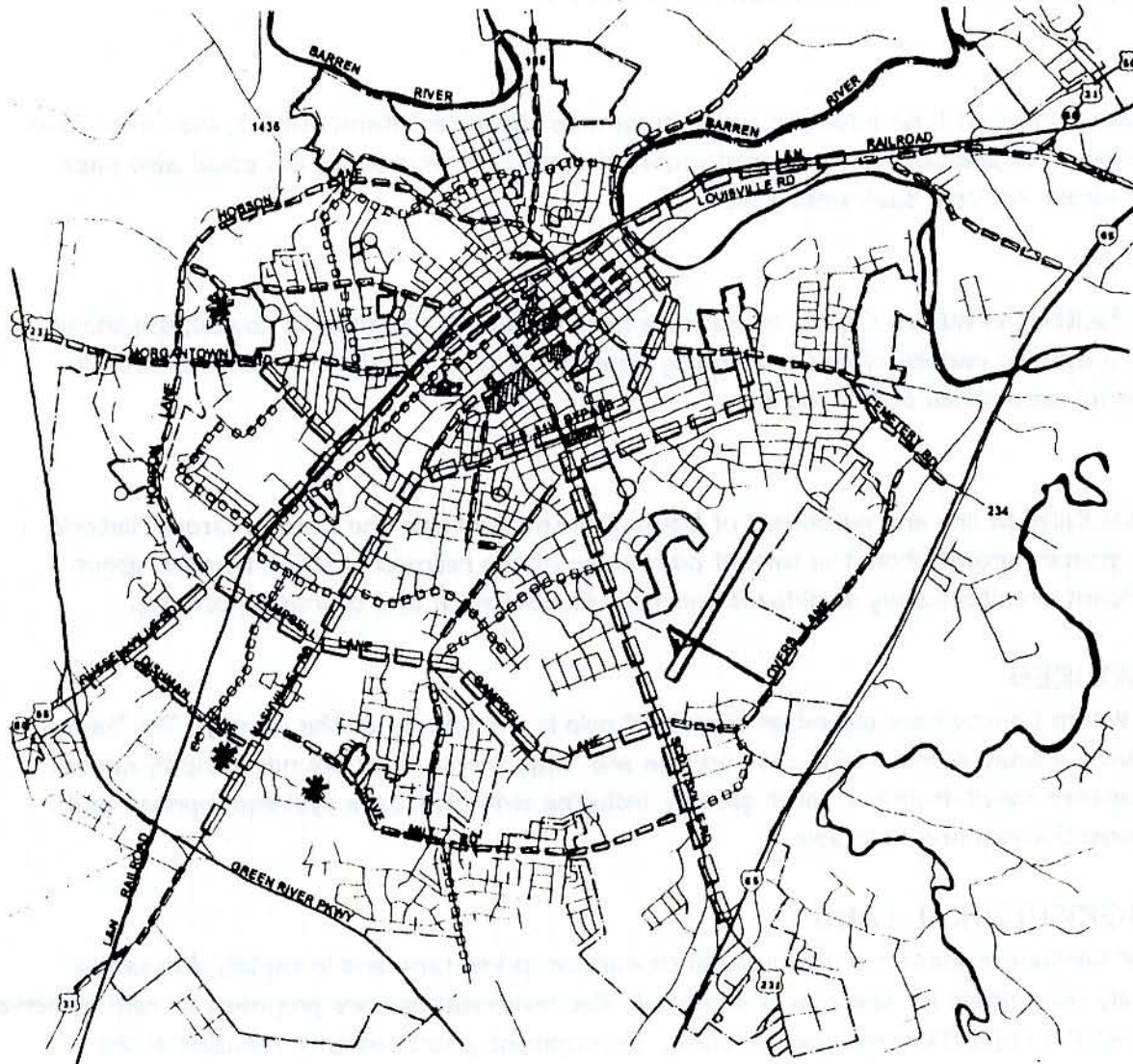
SIGNIFICANT NATURAL FEATURES

Two noteworthy features of Bowling Green include the Lost River Cave Valley and the Lost River Rise, the latter located within Lampkin Park. The Rise is the endpoint to a spectacular cave system, and boasts a unique view of the surrounding area. Griffin Park, like Salley's Rock and Three Springs will be accessible via a proposed pedestrian walkway system.

VEGETATION

Prime farmland located within the city has been, for the most part, designated for other uses though some farming continues in small areas. Natural vegetation occurs only in stream and river corridors, ravines and on abandoned lots or fields, as regrowth. All other vegetation was planted after development. Vegetation, left undisturbed, has the potential to minimize erosion and flooding, and to moderate temperate extremes.

CIRCULATION AND RECREATION BOWLING GREEN



LEGEND

- CIRCULATION
- ▭ CONGESTED STREETS
 - - - COLLECTOR STREETS
 - □ □ □ ARTERIAL STREETS
- RECREATION
- ◻ PARK AREA
 - COMMUNITY PARKS
 - NEIGHBORHOOD PARKS
 - * SIGNIFICANT NATURAL FEATURE
 - HISTORIC DISTRICT



CIRCULATION AND RECREATION - WARREN COUNTY

CIRCULATION

Warren County is fortunate to have access to both interstate and intrastate highways; Interstate 65, the Green River Parkway, and the Cumberland Parkway. In addition, one proposed route for the future Interstate 66 could also pass through Warren County, providing direct national east-west access.

RECREATION

Inventory of current recreational facilities in Warren County indicates a need for additional athletic courts, specifically tennis and basketball. Designating specific parcels of environmentally sensitive land as passive recreation areas will expand and enhance the recreational capabilities of the county.

HISTORIC DISTRICTS

Smith's Grove, located on the L&N Railroad line and northeast of Bowling Green, contains the Smith's Grove Historic District. The town sustained its primary growth from the time of completion of the railroad in 1859, through about 1920. It maintains several significant architecturally significant commercial, residential and church structures.

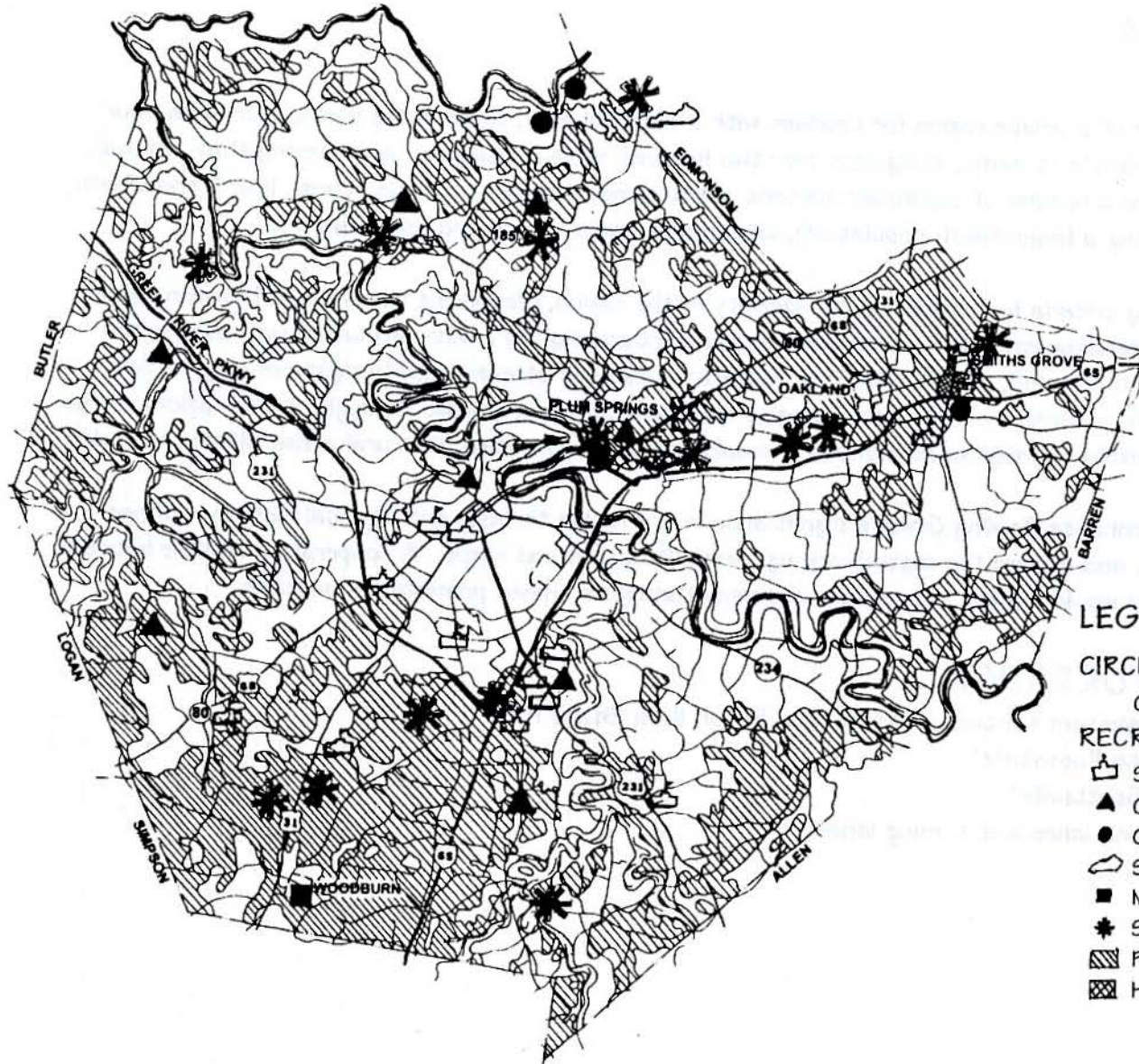
SIGNIFICANT NATURAL FEATURES

Many of the natural features of Warren County have played an important role in the history of the county. The Barren River, Green River and Gasper Rivers display scenic bluffs, cave springs and large trees. They are navigable by canoes and small craft. Other unique features result from the karst geology, including sinkholes, cave systems, springs and karst lakes. Salley's Rock and Three Springs are explorable.

VEGETATION AND PRIME AGRICULTURAL LAND

Although Warren County is one of Kentucky's leaders in agricultural production, prime farmland is rapidly decreasing. Expansion of communities is largely responsible for the loss of farmland. Recommendations are proposed to help preserve the remaining tracts. Areas of natural vegetation are also dwindling. Development practices have resulted in the isolation of most groves of vegetative cover to ravines and the corridors of streams and rivers.

CIRCULATION AND RECREATION WARREN COUNTY











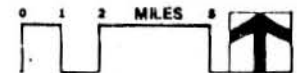
LEGEND

CIRCULATION

COUNTY ROADWAYS

RECREATION

-  SCHOOL PARKS
-  COMMUNITY PARKS AND FACILITIES
-  COUNTY PARKS AND FACILITIES
-  STATE PARKS AND FACILITIES
-  MUNICIPAL PARKS AND FACILITIES
-  SIGNIFICANT NATURAL FEATURES
-  PRIME AGRICULTURAL LAND
-  HISTORIC DISTRICT



REGIONAL TOURISM

Bowling Green is at the center of a unique region for tourism, with a national park, three state parks, four lakes, four rivers and numerous other navigable streams, along with over two hundred miles of mapped caves among their natural features. In addition, there are a number of significant historic attractions, theaters, antique stores, bed & breakfasts, craftsmen and artisans (including a large Amish population), amusement parks, canoe and horse liveryes.

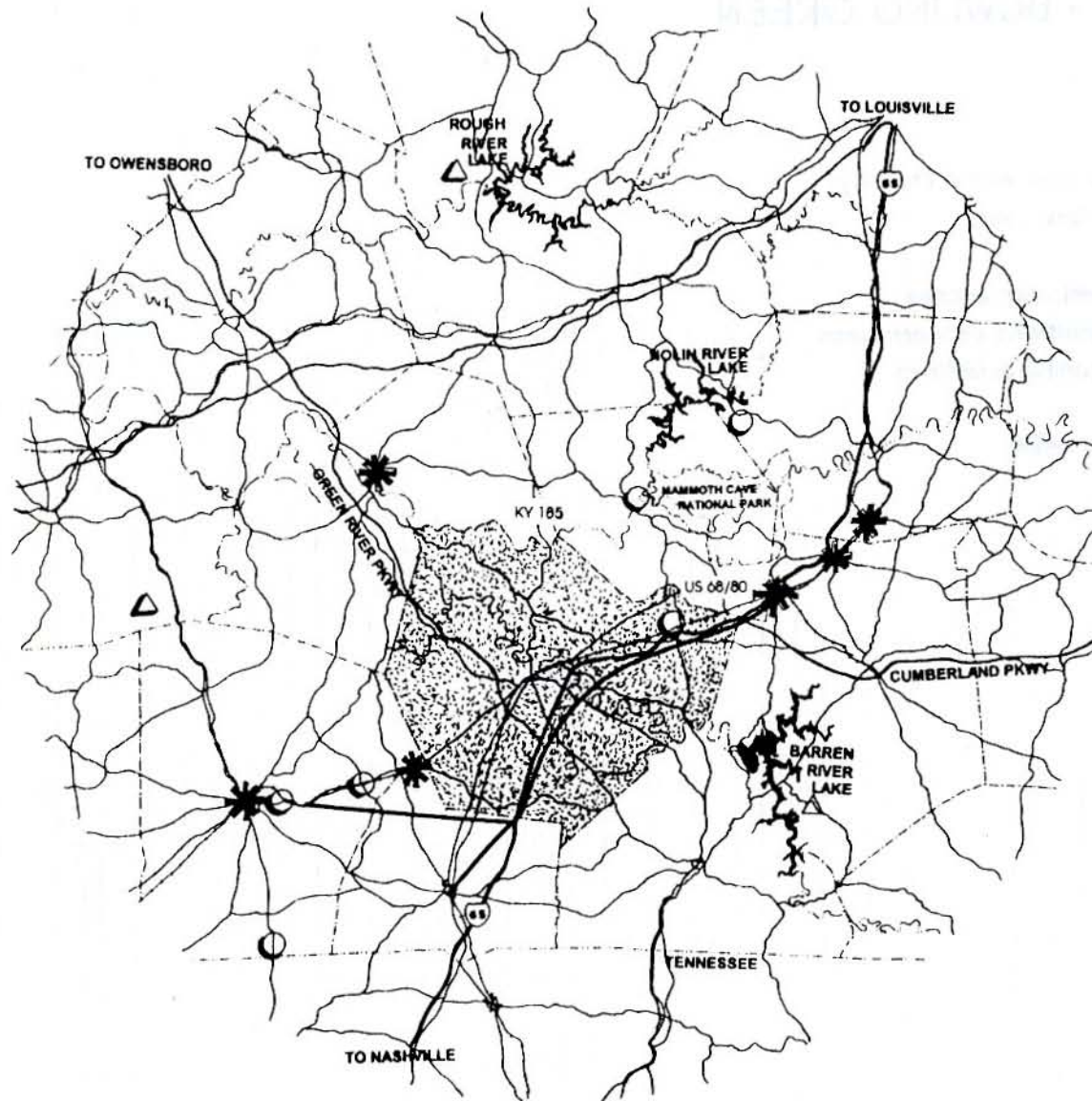
There is a need for establishing criteria for promoting the identity of the region, reinforcing the linkages between tourist features, limiting commercial development within natural areas, and encouraging low environmental impact uses within sensitive areas. As a means to this end, efforts should be made to utilize the streams, utility rights-of-way, oil field roads, secondary roads, and floodplains as a way of developing a system connecting trails throughout the region. These corridors will connect with primitive campgrounds and bed & breakfasts in communities and rural areas within the region.

An effort should be made to enhance Bowling Green's significance in the region through prototypical highway signage (encouraging tourists to stay and explore the region), driving tours, literature and maps. A cooperative venture between the region's tourism industries would market the regional economy through a unified promotional package.

REGIONAL TRANSPORTATION

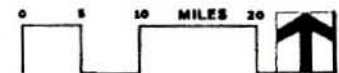
- o Improve Route 185 to Western Kentucky Parkway and Rough River State Park*
 - o Improve Route 68/80 to Russellville*
 - o Improve Route 231 to Scottsville*
- *new shoulders, passing lanes and turning lanes

REGIONAL TRANSPORTATION AND TOURISM



LEGEND

- △ STATE PARKS
- ✱ MUSEUM / HISTORIC SITE
- BED AND BREAKFAST

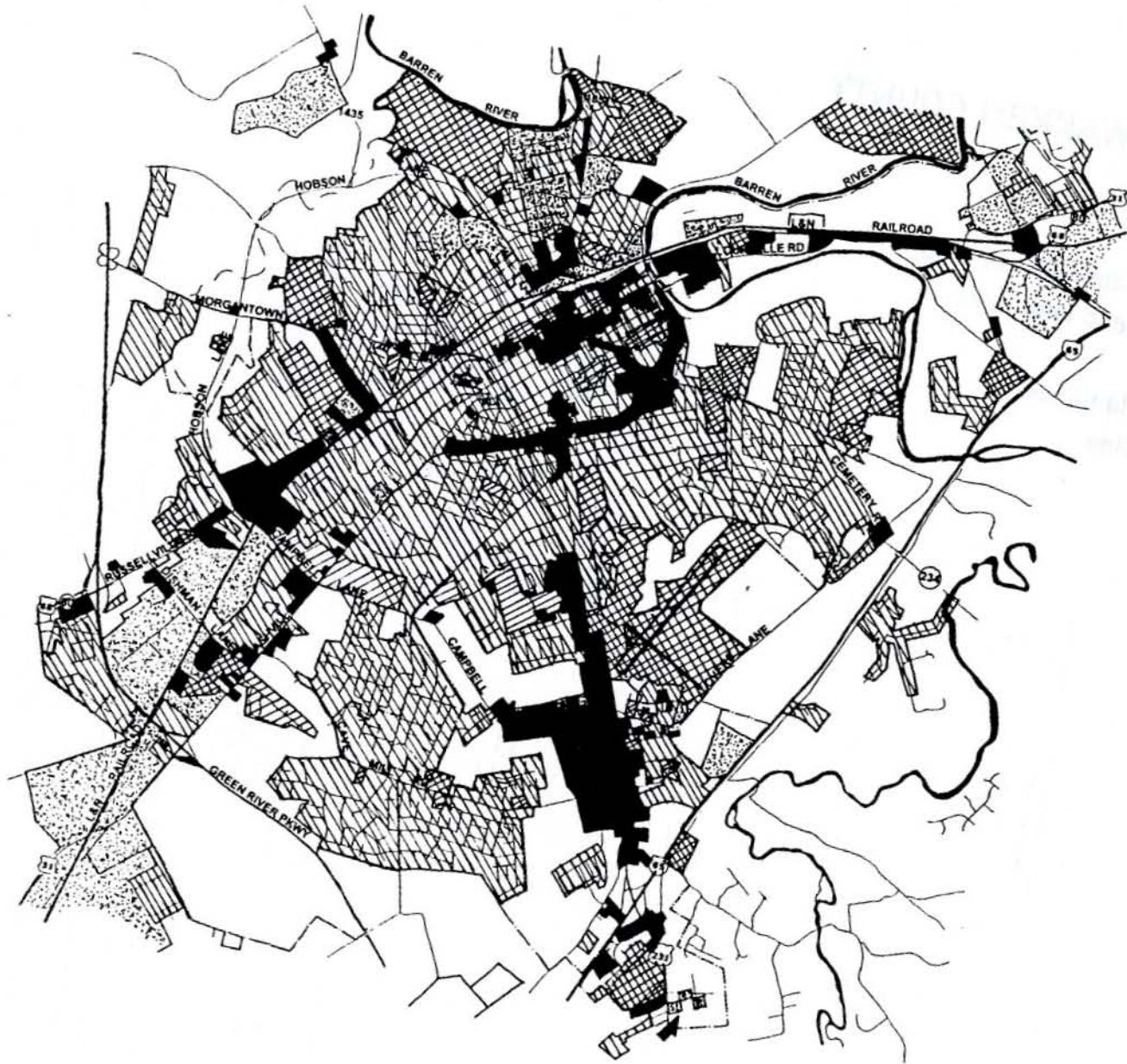


CURRENT LAND USE - BOWLING GREEN

ISSUES

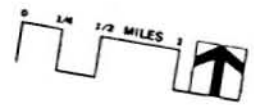
- o Uncontrolled growth
- o Vacant and under-utilized land within the city
- o Compatibility of adjacent land uses
- o Karst topography
- o Ease of pedestrian and vehicular access
- o Linkages, buffers, and transitions between uses
- o Redefining and updating zoning guidelines
- o Quality of growth
- o Evaluation of existing land uses

CURRENT LAND USE BOWLING GREEN



LEGEND

-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC
-  RESIDENTIAL



CURRENT LAND USE - WARREN COUNTY

ISSUES

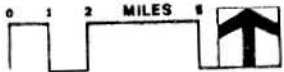
- o Preservation of prime agricultural land
- o Compatibility of adjacent land uses
- o Karst topography
- o Dispersed nature of land use
- o Economic opportunities

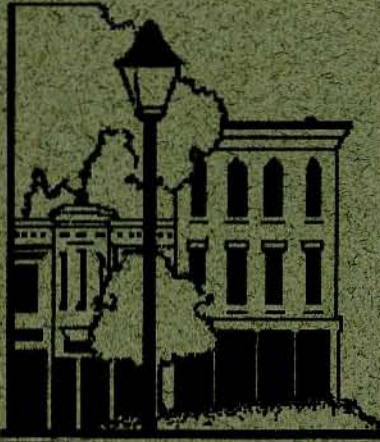
CURRENT
LAND USE
WARREN COUNTY



LEGEND

-  URBAN
-  RURAL





ECONOMICS

ECONOMIC

HISTORICAL PERSPECTIVE

The 1970's were a boom economic period for Warren County and Bowling Green, followed by a slump in the 1980's when the rest of the country was in a strong growth period. Now Warren County and Bowling Green are recovering with good growth projected in the near future.

WAGES AND EMPLOYMENT - IMPLICATIONS ON LAND USE

The industry and service sectors are expected to have the highest demand for new workers and generate the most dollars in wages. Also, these two sectors will require the greatest amounts of new acreage for development.

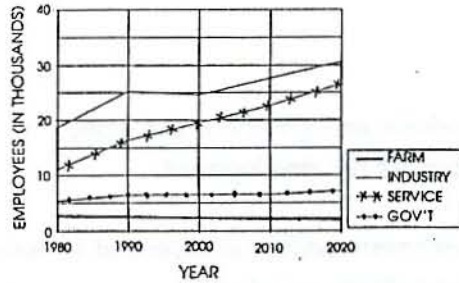
The demand for new workers in the agricultural sector is expected to decline. The government sector is expected to have a slight increase in need. Therefore, land use for these sectors is expected to remain relatively constant. Development will require infrastructure improvements.

COST OF LIVING COMPARISON

Average cost of living and value of homes is comparable to major nearby cities. If wage and employment opportunities are comparable, there will be little competition from other cities for housing and development consumers. Compared with wage and employment opportunities of the state, Bowling Green and Warren County have a favorable advantage.

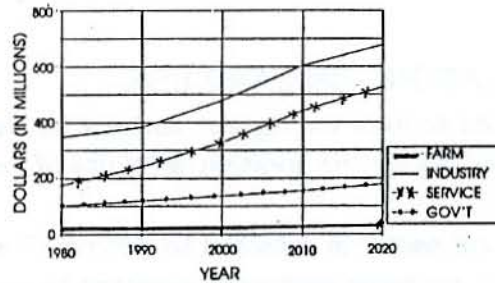
ECONOMIC INDICATORS

WARREN COUNTY EMPLOYMENT TRENDS



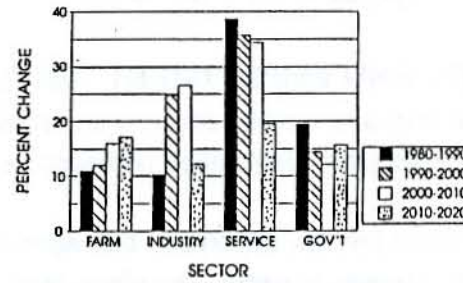
- o Employment in the farm sector is projected to decline from 2.6 thousand in 1990 to 2.3 thousand in 2020.
- o Employment in the industry sector is projected to decline from 25.1 thousand in 1990 to 24.5 thousand in 2000. This sector is then projected to grow to 30.6 thousand by 2020.
- o Employment in the service sector is projected to increase from 16.2 thousand in 1990 to 26.5 thousand in 2020.
- o Employment in the government sector is projected to increase from 6.4 thousand in 1990 to 7.0 thousand in 2020.
- o Total employment in Warren County is projected to increase from 47.1 thousand in 1990 to 64.0 thousand in 2020.

WAGE ANALYSIS BY SECTOR



- o Wages for the farm sector are projected to increase from \$16.1 million in 1990 to \$24.5 million in 2020.
- o Wages for the industry sector are projected to increase from \$381.8 million in 1990 to \$676.5 million in 2020.
- o Wages for the service sector are projected to increase from \$240.6 million in 1990 to \$524.4 million in 2020.
- o Wages for the government sector are projected to increase from \$119.1 million in 1990 to \$176.7 million in 2020.
- o Total wages for Warren County are projected to increase from \$757.6 million in 1990 to \$1525.1 million in 2020.

PERCENT INCREASE IN WAGES



PROJECTIONS FOR THE YEAR 2020

- o A 52% increase in total wages for the farm sector
- o A 77% increase in total wages for the industry sector
- o A 118% increase in total wages for the service sector
- o A 48% increase in total wages for the government sector
- o A 101% overall increase in total wages for Warren County

METHODOLOGY

This chart explains the relationship between increases in population, projected through the year 2020, and the increases in acres which will be needed for commercial, industrial and residential land uses. Divided into two areas; the city of Bowling Green and its fringe, and the remainder of the county. A baseline acreage for land use is determined by calculating the number of acres devoted to each land use per 1000 people in 1990. The estimated acreage needed by 2020 is calculated using the projected population for that year. The number of additional acres needed for each land use is the difference between the projected acreage needed and the total now available. Adding the urban and rural areas results in the total projected additional acreage needed for Warren County.

POPULATION IMPLICATIONS ON LAND USE

	Bowling Green	+Fringe	=Urban	+Rural	=Warren County
POPULATION: *					
1990	43,000	13,000	56,000	20,000	76,700
2020	50,000	15,000	65,000	24,000	89,000
ACREAGE					
1990	18,240	19,200	37,440		345,600
COMMERCIAL					
acre/1000 pop.	55	15	45	42	44
Projected acres			2925	1000	3925
Present acres	2400	192	2592	837	3429
Needed acres			333	163	496
INDUSTRIAL					
acre/1000 pop	53	75	57	55	50
Projected acres			3705	792	4497
Present acres	2280	960	3240	562	3802
Needed acres			465	230	695
RESIDENTIAL					
Units	17500	4205	21640		
Acres	6384	7488	13872		
Units/acre	2.74	0.56	1.56		
Projected need	20603				
Needed units	3103				

*The population projections on which these needs were based were taken from the 1990 Census of Population, the 1992 B.R.A.D.D. Book, and the 1993 Kentucky Deskbook of Economic Statistics.



SOCIO-CULTURAL

SOCIAL ASSESSMENT

GOAL

To evaluate and assess present and future social needs from the perspective of growth management.

OBJECTIVE

- o To provide adequate services to the community for the fulfillment of a variety of needs. These needs include housing, recreational, institutional, educational, retail and health care facilities.
- o To provide good access to these facilities.
- o To link similar land use areas.
- o To locate facilities in areas of the greatest need.
- o To separate incompatible land uses while avoiding the division of compatible land uses.
- o To preserve distinct and unique areas of historic and natural significance.

SOCIAL ACCESSIBILITY MATRIX

LAND USE	ROADS		AIRPORT	RAILROADS	RETAIL/ COMMERCE	INDUSTRY		OFFICE PARK	HOUSING			SCHOOL	PARK	GREEN SPACE	AGR. LAND		SEMI-PUBLIC FACILITIES	FIRE/ POLICE	CIVIC FACILITIES	INSTITUTIONS HEALTH
	MIN	MAX				LIGHT	HEAVY		HIGH	MED	LOW				PASTURE	CROP				
ROADS																				
MINIMUM																				
MAXIMUM																				
AIRPORT	1	9																		
RAILROADS	1	1	1																	
RETAIL/COMMERCE	3	9	5	1																
INDUSTRIAL																				
LIGHT	3	9	3	5	3															
HEAVY	1	9	3	9	1	5														
OFFICE PARK	3	9	9	1	9	5	1													
HOUSING																				
HIGH	9	1	1	1	7	3	1	7												
MEDIUM	9	1	1	1	5	3	1	5	9											
LOW	9	1	1	1	5	3	1	5	7	9										
SCHOOLS	9	1	1	1	5	1	1	5	9	9	9									
PARKS	9	5	1	1	3	1	1	7	9	9	9	9								
GREENSPACE	3	1	1	1	1	1	1	5	9	9	9	9	9							
AGRICULTURE																				
PASTURE	1	1	1	1	1	1	1	1	1	1	1	1	1	1						
CROPS	1	1	5	1	1	1	1	1	1	1	1	1	1	1	9					
SEMI-PUBLIC FACILITY	9	9	1	1	7	5	1	5	5	5	5	5	5	3	1	1				
FIRE/POLICE	9	9	N/A	1	9	9	9	9	9	9	9	9	9	5	7	7	9			
CIVIC FACILITIES	3	9	9	1	9	N/A	1	9	5	5	5	5	5	5	1	1	9	9		
INSTITUTIONS																				
HEALTH	3	9	5	1	5	9	9	7	9	9	9	9	5	3	7	7	9	9	9	
LANDFILL	1	9	1	1	1	5	9	1	1	1	1	1	1	1	1	1	1	1	1	1

PROCESS

The accessibility matrix is used to assign a value which reflects the importance of accessibility between land uses or factors. The value 1 reflects a low need for accessibility and the value 9 represents the highest need for accessibility.

SOCIAL COMPATIBILITY MATRIX

LAND USE	ROADS		AIRPORT	RAILROADS	RETAIL/ COMMERCE	INDUSTRY		OFFICE PARK	HOUSING			SCHOOL	PARK	GREEN SPACE	AGR. LAND		SEMI PUBLIC FACILITIES	FIRE/ POLICE	CIVIC FACILITIES	INSTITUTIONS HEALTH
	MIN	MAX				LIGHT	HEAVY		HIGH	MED	LOW				PASTURE	CROP				
ROADS																				
MINIMUM																				
MAXIMUM																				
AIRPORT	1	9																		
RAILROADS	1	9	5																	
RETAIL/COMMERCE	3	9	5	5																
INDUSTRIAL																				
LIGHT	3	9	7	9	7															
HEAVY	1	9	7	9	1	5														
OFFICE PARK	3	9	7	5	9	7	1													
HOUSING																				
HIGH	9	1	1	1	5	3	1	5												
MEDIUM	9	1	1	1	5	3	1	5	9											
LOW	9	1	1	1	3	3	1	3	7	9										
SCHOOLS	9	1	1	1	3	3	1	3	7	9	9									
PARKS	9	5	3	3	3	3	1	5	9	9	9	9								
GREENSPACE	9	5	9	5	3	5	5	5	9	9	9	9	9							
AGRICULTURE																				
PASTURE	5	5	5	5	1	3	3	3	3	5	5	3	9	9						
CROPS	5	5	5	5	1	3	3	3	3	3	3	3	9	9	9					
SEMI PUBLIC FAC	5	7	1	3	7	5	1	5	7	5	3	5	5	5	3	3				
FIRE/POLICE	3	5	N/A	1	7	5	5	5	3	3	3	7	5	1	1	1	7			
CIVIC FACILITIES	3	9	5	5	7	5	1	9	5	3	3	5	5	1	1	1	7	7		
INSTITUTIONS																				
HEALTH	3	9	3	1	5	5	3	5	5	3	3	5	5	3	1	1	7	7	7	
LANDFILL	1	1	1	9	1	5	7	1	1	1	1	1	1	9	5	3	1	1	1	1

PROCESS

The compatibility matrix analyzes numerous factors to arrive at land uses that are compatible. Before a final determination of land use compatibility was made, it was necessary to establish a value system to weight each factor that was being compared. The values showing the lowest compatibility within the matrix are valued 1, and the highest values are numbered 9.

PROCESS

The Social Needs Assessment utilized the information produced from the Compatibility and Accessibility Matrices in conjunction with standards drawn from the Bowling Green Comprehensive Plan to provide data for projected social needs. The population projections on which these needs were based were taken from the 1990 Census of Population, the 1992 B.R.A.D.D. Book, and the 1993 Kentucky Deskbook of Economic Statistics.

FACTOR	STANDARD	PRESENT	PROJECTED	NEEDS
<u>RETAIL</u> NEIGHBORHOOD COMMUNITY REGIONAL	2500 People 5000 People 100,000 People	? 19 1	<u>LOW</u> <u>HIGH</u> 20 28 10 14 2 3	<u>LOW</u> <u>HIGH</u> — — — — 1 2
<u>OPEN SPACE</u> CLUSTER NEIGHBORHOOD COMMUNITY	500 sqft. / 2 Acre 3 - 10 Acres / 5000 People 15 - 20 Acres / 15000-25000	491 Acres of Park Space in Bowling Green	SUFFICIENT	NA
<u>EDUCATION</u> ELEMENTARY JR. HIGH HIGH ELEMENTARY JR. HIGH HIGH	12-14 Acres .5 Miles Walk 24-26 Acres .75 Miles Walk 25 Acres +1 Acre/100 Students 1 Mile Walk	<u>CITY</u> <u>COUNTY</u> 2021 / 6* 5971 / 11* 460 / 1* 1095 / 2* 946 / 1* 2850 / 3* <u>TOTALS:</u> <u>AVERAGE</u> 7992 / 17* 470□ 1555 / 3* 518□ 3796 / 4* 949□ 13,343 / 20*	<u>TOTAL</u> 10,680 15,600	<u>TOTAL</u> SUFFICIENT 2257* * Additional Students Average Number of Students per School is 94.
<u>TRANSPORTATION</u>	HIERARCHY OF ROADS ARTERIAL MAJOR COLLECTORS MINOR COLLECTORS LOCAL STREETS AIRPORTS 3 MILE MINIMUM CLEARANCE FROM THE ENDS OF RUNWAYS	See Map	<u>TRANSPORTATION NEEDS</u> Upgrade Hierarchy. Improve Access to the Downtown and River. Improve & Build Sidewalks & Bike Paths. Relocate railroad line. Relocate airport.	



VISUAL QUALITY

VISUAL QUALITY ASSESSMENT

GOAL

To produce a model through which visual quality can be assessed objectively in order to enhance the image of Bowling Green.

OBJECTIVE

Provide a model for aesthetic controls that can be studied objectively in order to produce recommendations for ordinances, zoning and design guidelines.

Issues and Implications

Visual clutter along streets creates confusion and lowers visual quality. Rapid expansion along Bowling Green's major corridors, such as Scottsville Road, plus the lack of ordinances to control aesthetic quality have contributed to the present image.

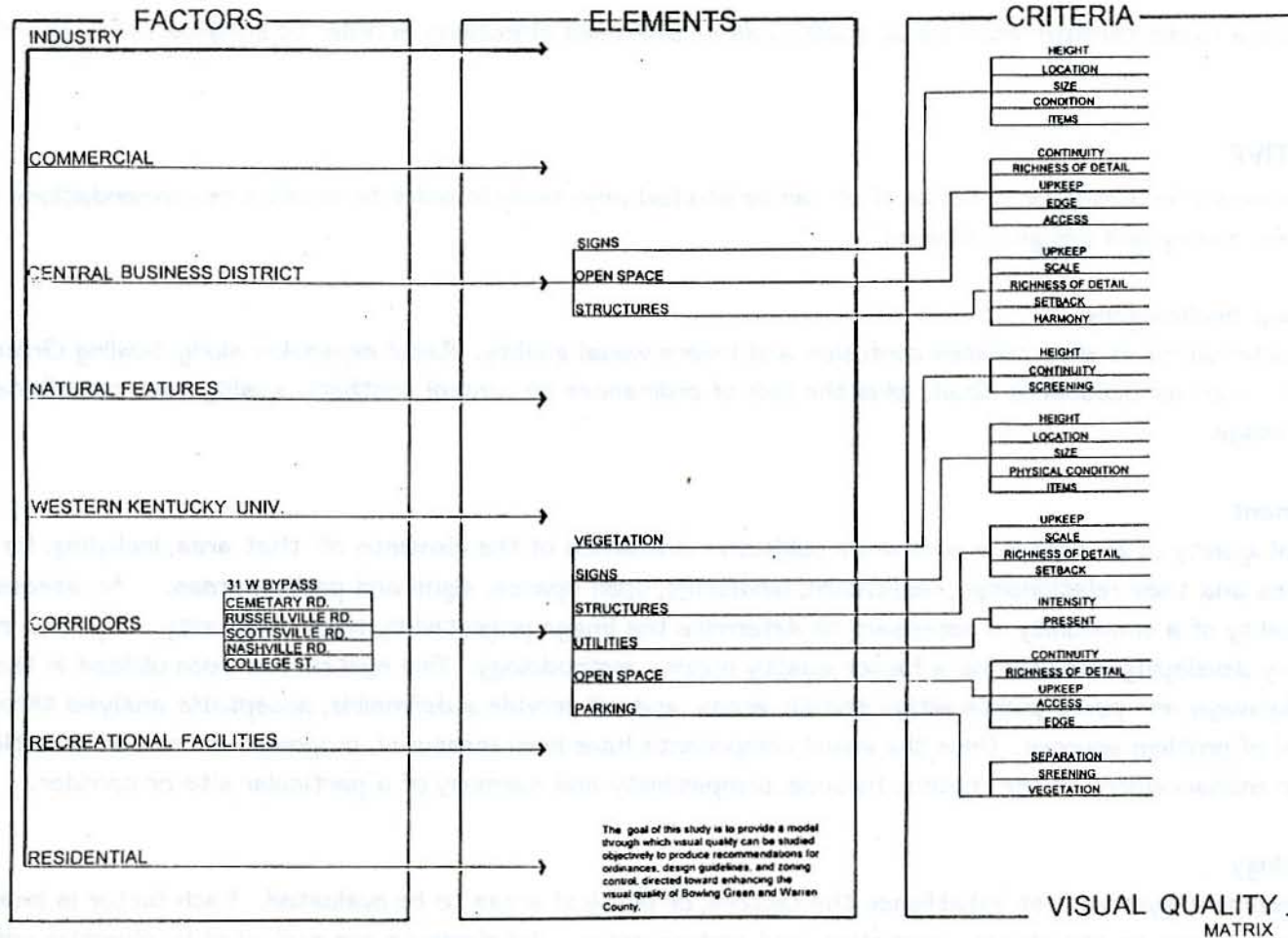
Assessment

The visual quality of an area is a somewhat subjective evaluation of the elements of that area, including, for example, structures and their relationships, vegetation, landforms, open spaces, signs and parking areas. An assessment of visual quality of a community is necessary to determine the image projected by that community. Objective evaluation is feasible by developing and utilizing a factor quality scoring methodology. This system has been utilized in the siting of scenic highways and power plants within scenic areas, and will provide a defensible, acceptable analysis through objective portrayal of problem sources. Once the visual components have been measured, proposals for recommendations can be made for enhancement of the rhythm, balance, compatibility and harmony of a particular site or corridor.

Methodology

The assessment system first establishes the factors, or physical areas to be evaluated. Each factor is broken down into its elements, such as structures, vegetation, and parking areas. The elements are evaluated by objective criteria that can be rated according to a consistent numerical scale. Ratings are from 1 (low appropriateness) to 9 (high appropriateness). The element's rating scores are organized into a matrix and total scores for each criteria are determined. This allows for comparisons of scores for each sign along any corridor or site in any community.

VISUAL QUALITY MATRIX





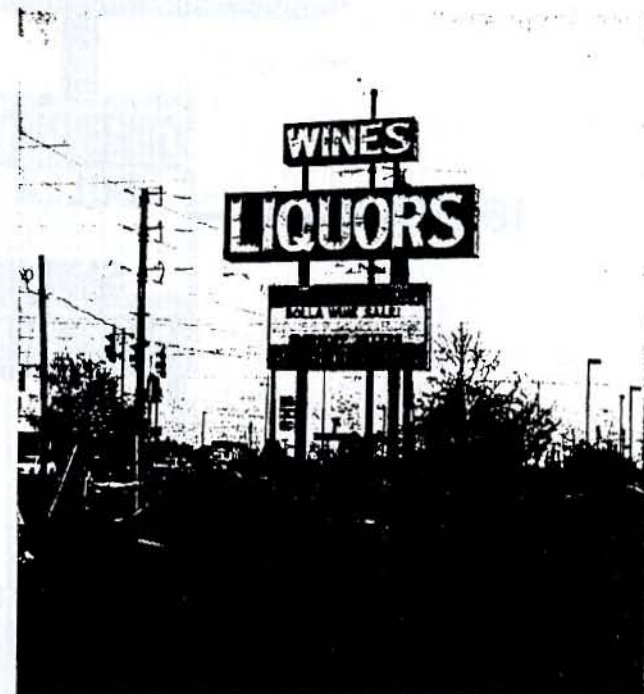
EXAMPLE OF "HIGH" VISUAL QUALITY

**ASSESSMENT EXAMPLE:
SCOTTSVILLE ROAD CORRIDOR**

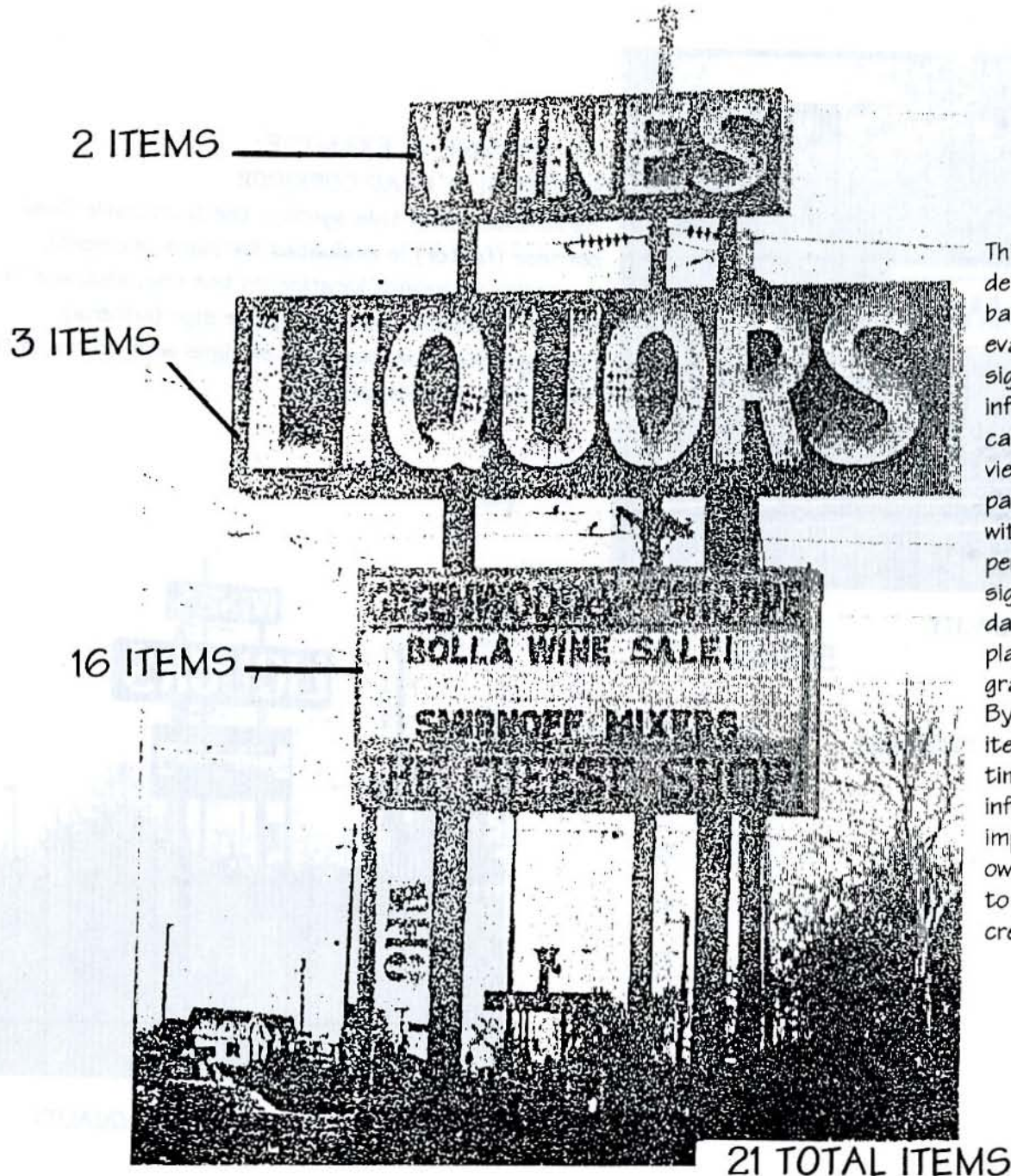
As an example of this system, the Scottsville Road corridor (factor) is evaluated for signs (element), according to height, location on the site, size, and the number of items displayed by the sign (criteria). Photographs show examples of signs with scores in the "high" and "low" visual levels.

SIGNS

CRITERIA	SIGNS	
	PIZZA HUT	SPIRITSHOPPE
HEIGHT	9	5
SIZE	9	1
LOCATION	9	5
CONDITION	9	6
ITEMS	9	1
TOTAL	45	18



EXAMPLE OF "LOW" VISUAL QUALITY



ITEM ANALYSIS

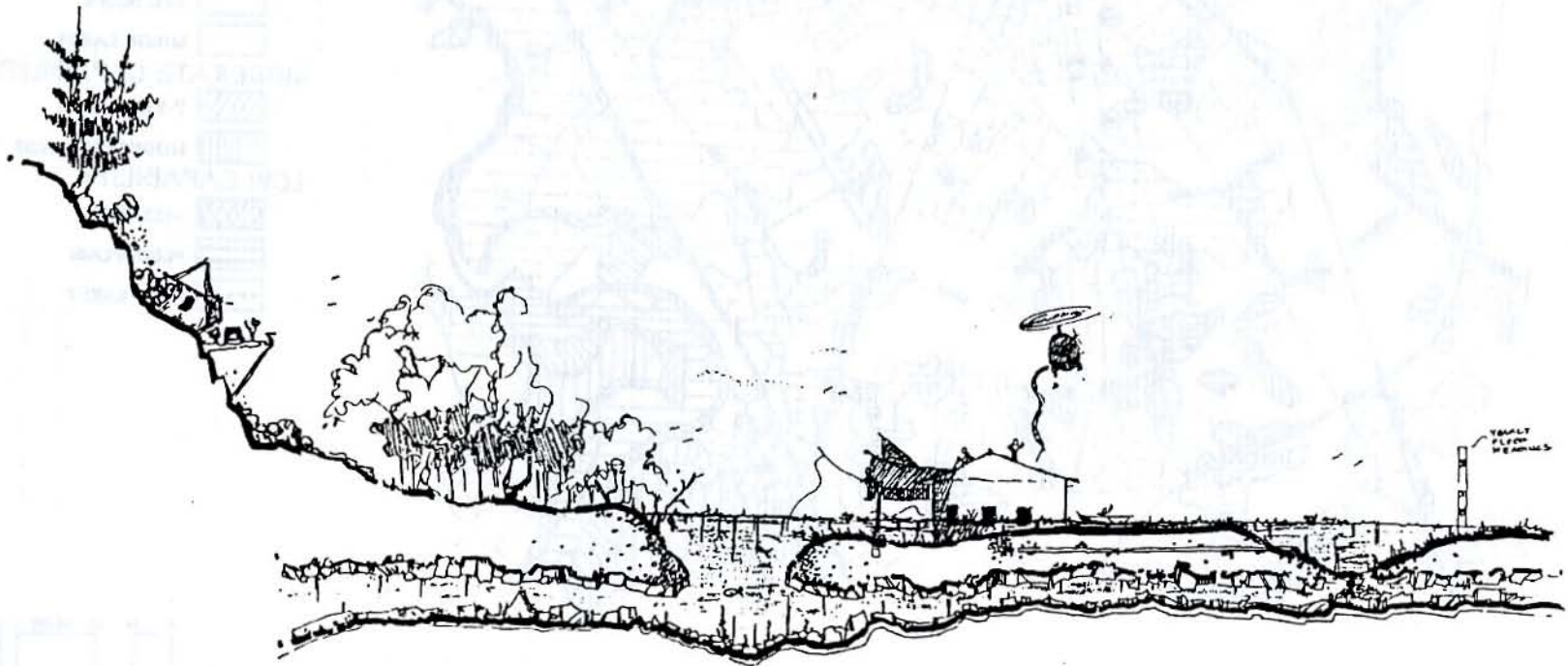
This photograph and text represent a demonstration of an item analysis evaluation. The item analysis prevents signs from displaying excess information which the human brain cannot process within the short viewing time dictated by the speed of passing. Signs should remain simple with no more than ten items allowed per sign. An item is anything on the sign which forces the brain to analyze data. These include use of different planes, each syllable of a word, and any graphic symbols located on the sign. By creating signs maintaining ten items or less the viewer can, in a short time, read and interpret the information presented. This is important not only for the business owner but also for the community due to the reduction of visual clutter created by this system.



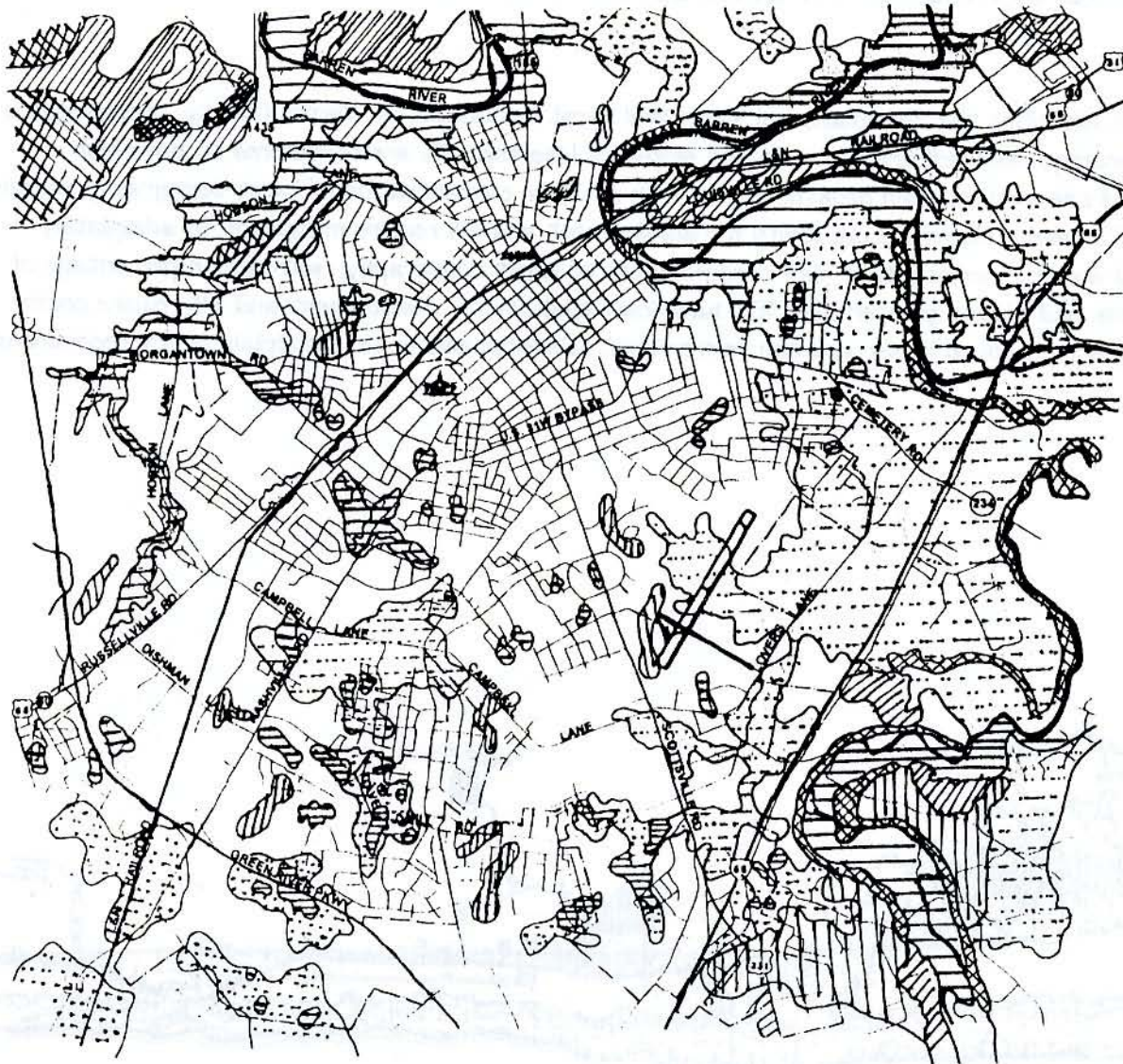
LAND USE CAPABILITY

PHYSICAL LAND USE CAPABILITY FOR BOWLING GREEN AND WARREN COUNTY

Physical land use assessment identifies the floodplain, soil, slope and karst limitations of Warren County. Areas with a low concentration of karst topography, deep well drained soils and slopes of less than 7% are considered to have high capability for development and can best sustain growth. Areas with a higher concentration of karst topography, marginal soils, and slopes from 7 to 15% have a moderate capability for development and will require mitigation to adequately protect the quality of ground water. Areas with a high concentration of karst topography, with a high percentage of sinkhole collapses, shallow soils and slopes greater than 15% have low capability for development and will require costly measures to mitigate the impact on ground water and the environment. Development in the floodplain is not recommended.




PHYSICAL
LAND USE
CAPABILITY
BOWLING GREEN




LEGEND

HIGH CAPABILITY

 <7% SLOPE

 MINOR KARST

MODERATE CAPABILITY

 7-15% SLOPE

 MODERATE KARST

LOW CAPABILITY

 >15% SLOPE

 FLOODPLAIN

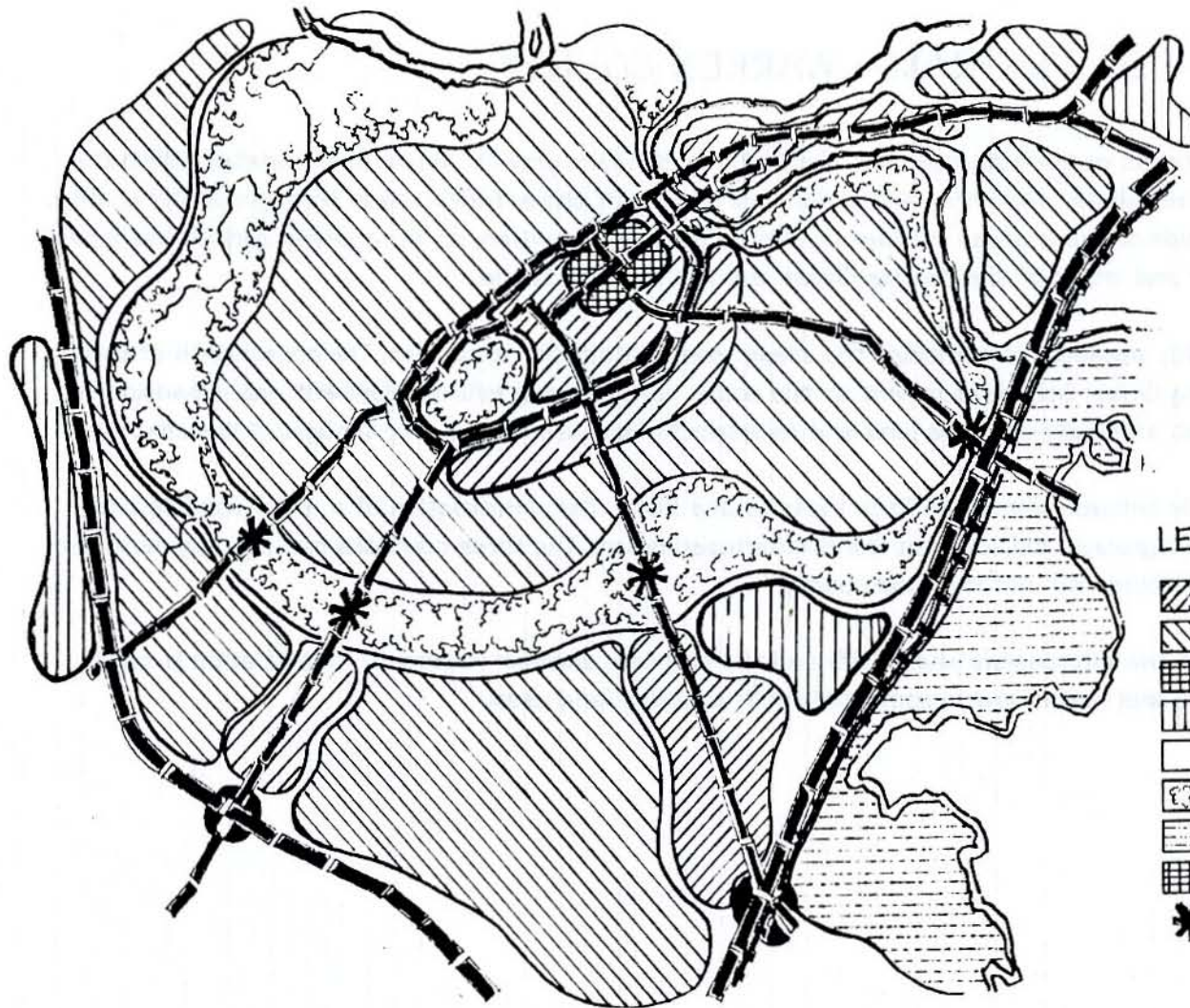
 HIGH KARST














MASTER PLAN

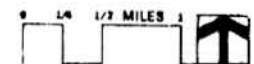
CONCEPTUAL
LAND USE
DIAGRAM
BOWLING GREEN



LEGEND

-  COMMERCIAL
-  RESIDENTIAL
-  HISTORIC DISTRICT
-  INDUSTRIAL
-  BUFFER
-  GREENSPACE
-  AGRICULTURAL TRANSITION ZONE
-  CENTRAL BUSINESS DISTRICT
-  GATEWAY

Growth is managed within the boundary that is established by the highway corridors. Future development should be accomplished, when possible, with infill of vacant land, rehabilitation of present land use, and potential expansion to the north. An increase in residential density will facilitate the success of a mass transit system and accessibility of services.



CONCEPTUAL LAND USE DIAGRAM - WARREN COUNTY

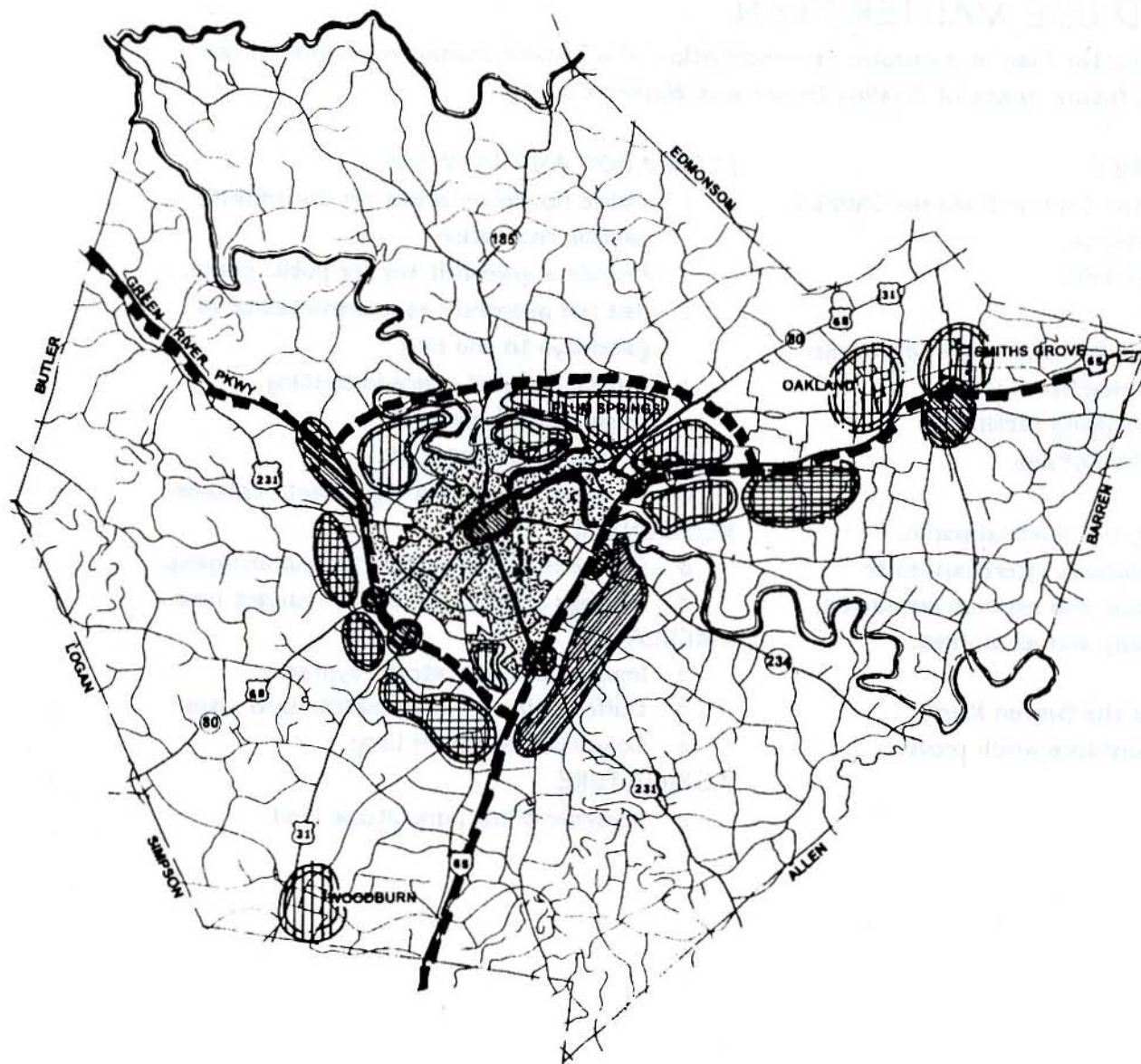
The analysis of social and economic needs indicates that the majority of future growth can be accommodated within the Bowling Green city limits, its immediate fringe area and in the near vicinity of the satellite towns throughout the county. Expansion is discouraged outside of these areas in order to provide adequate services, conserve prime agricultural lands and to enhance the character and image of the Bowling Green and the satellite towns.

The Physical Land Use Capability assessment identifies the areas most suitable for expansion. The constraints of karst geology to the south of Bowling Green limit development to the south. Encouraging infill development and expansion to the north will protect the most physically sensitive land and redistribute land use more evenly throughout the city.

The Bowling Green city limits lie between the Green River Parkway and I-65. The construction of a major road to the north of the city links the two highways and encloses the northern perimeter. The three corridors can logically serve as an edge between the urban developments and the rural county.

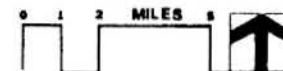
The airport is relocated at the new interchange where I-65 and the northern corridor intersect. This location is easily accessible to the entire county and region, and is compatible with adjoining land uses.

CONCEPTUAL LAND USE DIAGRAM WARREN COUNTY



LEGEND

-  COMMERCIAL
-  AGRICULTURAL EASEMENT
-  INDUSTRIAL
-  RESIDENTIAL
-  CIRCULATION



CONCEPTUAL LAND USE MASTER PLAN

The Conceptual Land Use Master Plan is a graphic representation of a growth management plan which addresses the present and future needs of Bowling Green and Warren County.

CENTRAL BUSINESS DISTRICT

- o Improve access into the Central Business District.
- o Preserve Historic Districts.
- o Utilize vacant land for infill.

COMMERCIAL

- o Locate new regional mall at highway interchange.
- o Enhance and develop riverfront area.
- o Build neighborhood shopping facilities.
- o Revitalize Highway 31W ByPass.

INDUSTRIAL

- o Concentrate industry in industrial parks.
- o Locate industry at highway interchanges to provide access for local and regional employees.
- o Provide efficient railway and air access.

VISUAL QUALITY

- o Visually link WKU and the Barren River
- o Enhance and unify corridors which provide access and entry.

RECREATION AND TOURISM

- o Utilize floodplain areas for low impact, passive recreation.
- o Provide a greenbelt link for public parks.
- o Use the greenbelt as a demarkation of gateways to the city.
- o Create new and upgrade existing neighborhood parks.
- o Create Riverfront Park.
- o Preserve unique and significant features.

RESIDENTIAL

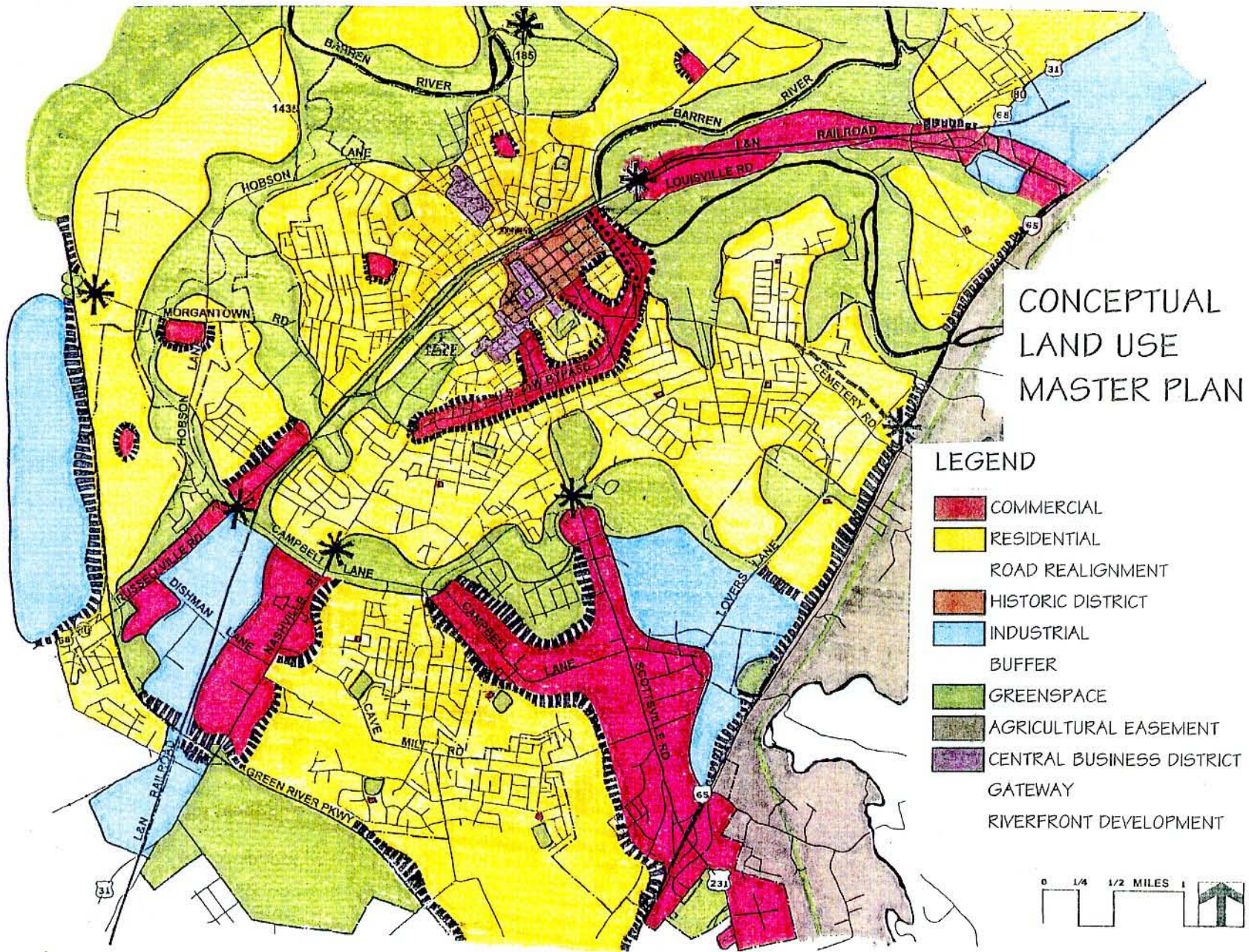
- o Create neighborhood parks and shopping.
- o Manage growth with infill of vacant land.

CIRCULATION

- o Improve one-way street systems.
- o Buffer adjacent incompatible land uses.
- o Construct Northern Loop.

AGRICULTURE

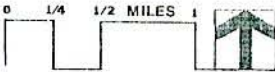
- o Preserve prime agricultural land.



CONCEPTUAL LAND USE MASTER PLAN

LEGEND

- COMMERCIAL
- RESIDENTIAL
- ROAD REALIGNMENT
- HISTORIC DISTRICT
- INDUSTRIAL
- BUFFER
- GREENSPACE
- AGRICULTURAL EASEMENT
- CENTRAL BUSINESS DISTRICT
- GATEWAY
- RIVERFRONT DEVELOPMENT





RECOMMENDATIONS

RECOMMENDATIONS

GENERAL

- o Adopt recommendations as regulations, with incentives for compliance.
- o Encourage autonomy of satellite cities.
- o Propose models for land uses that will be cost effective.
- o ADA Regulations to be adhered to with all new design.

ENVIRONMENT

- o Collect, detain and treat stormwater runoff.
- o Install or utilize innovative on-site water treatment methods or sewer lines for existing septic fields.
- o Monitor groundwater for pollution county-wide, including agricultural chemicals.
- o Prohibit construction on or near sinkholes.
- o Mandate methods to accommodate sewage and stormwater runoff at new construction sites.
- o Conserve prime agricultural land.

VISUAL QUALITY

- o Create buffers for incompatible adjacent land uses.
- o Incorporate a system to evaluate visual quality by an objective method.

SERVICES

- o Plan for future population growth that will require additional hospital beds and nursing homes.
- o Build a branch library to meet present needs and anticipate the need for one additional branch to meet future needs in 2020.

CIRCULATION

- o Improve linkage and transitions between land uses.
- o Strengthen neighborhood relationships.
- o Improve transportation access and circulation to and within the Central Business District.
- o Construct a northern loop to connect I-65 and the Green River Parkway, and act as an edge to limit growth.
- o Relocate the railroad line that dissects the heart of downtown Bowling Green to lessen traffic delays, improve compatibility of adjacent uses, improve the image of the city, eliminate a potential barrier to growth and to better service industrial uses.
- o Improve KY 185 to the Western Kentucky Parkway and Rough River State Park.

- o Improve US 68/80 to Russellville.
- o Improve Ky 231 to Scottsville.
- o Revitalize 31W ByPass.

CENTRAL BUSINESS DISTRICT

- o Utilize vacant land within the city limits for infill development.
- o Preserve and encourage Historic Districts.

RESIDENTIAL

- o Plan for future changes in demographics that may result in smaller single-family dwellings and smaller lots.
- o Plan for future increased enrollment at Western Kentucky University and design more medium and high density housing near campus.

RECREATION AND TOURISM

- o Incorporate a greenspace system of walking paths and biking trails as linkage and transition between parks.
- o Add more playing fields, especially soccer, as popularity gains.
- o Increase recognition of Bowling Green through the use of signage, tours, maps and brochures.
- o Encourage low impact tourism such as bicycling, hiking, boating and canoeing by linking the region's streams, utility corridors and abandoned oil field roads to scenic, recreational and historic features.

COMMERCIAL

- o Inventory existing neighborhood shopping, and designate areas for additional retail where needed.
- o Plan an additional shopping mall as indicated by population projections.
- o Designate arterial entrances off Interstate 65 and Green River Parkway as specifically commercial or non-commercial corridors.

INDUSTRIAL

- o Zone additional acreage for future increased needs in industry.
- o Relocate the Airport to an open space area to ensure safety and improve compatibility of adjacent use.

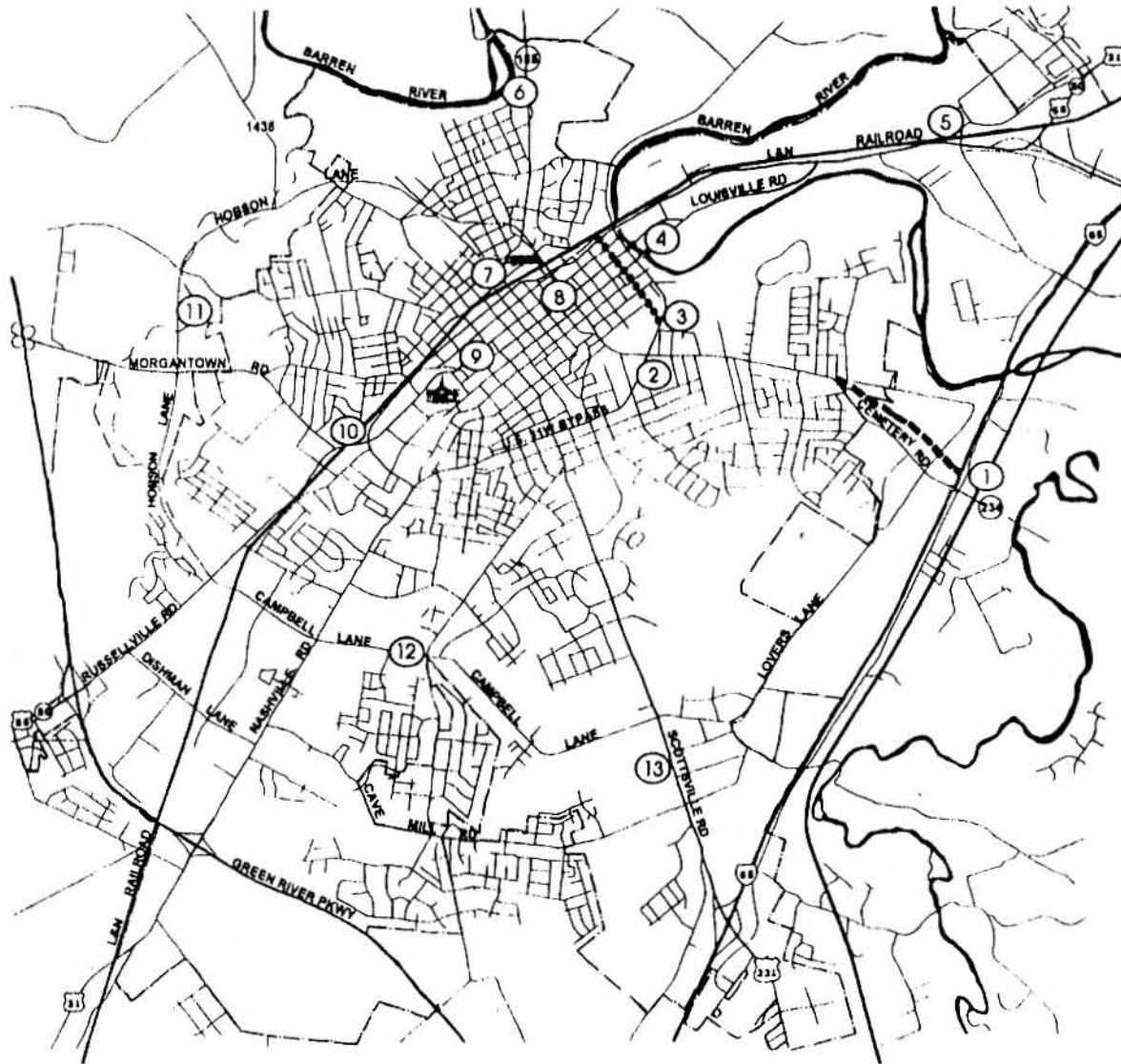
UTILITY LINES

- o Encourage underground construction for all new utility lines.
- o When possible, move existing lines underground or to unobtrusive location.



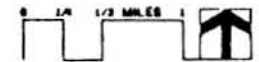
CONCEPTUAL DESIGNS

DESIGN PROJECT LOCATIONS BOWLING GREEN



LEGEND

1. PROPOSED PARKWAY ENTRY
2. 31W COMMERCIAL ZONE
3. RIVERFRONT DEVELOPMENT
4. RIVERFRONT PARK
5. 31W CORRIDOR INDUSTRIAL PARK
6. BOAT LANDING
7. DEPOT
8. RESIDENTIAL INFILL
9. COLLEGE STREET CORRIDOR AND FOUNTAIN SQUARE
10. GREENSPACE / NEIGHBORHOOD PARKS
11. JENNINGS CREEK
12. CAMPBELL LANE - BIKE PATHS
13. SCOTTSVILLE ROAD CORRIDOR



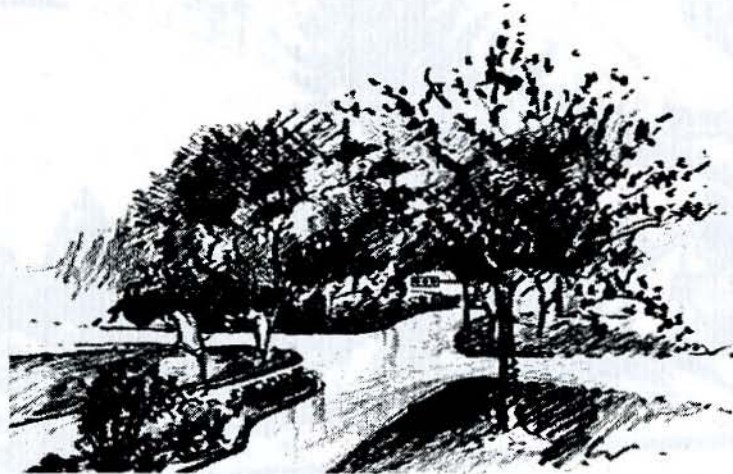
PROPOSED PARKWAY ENTRY

DESIGN CONCEPT

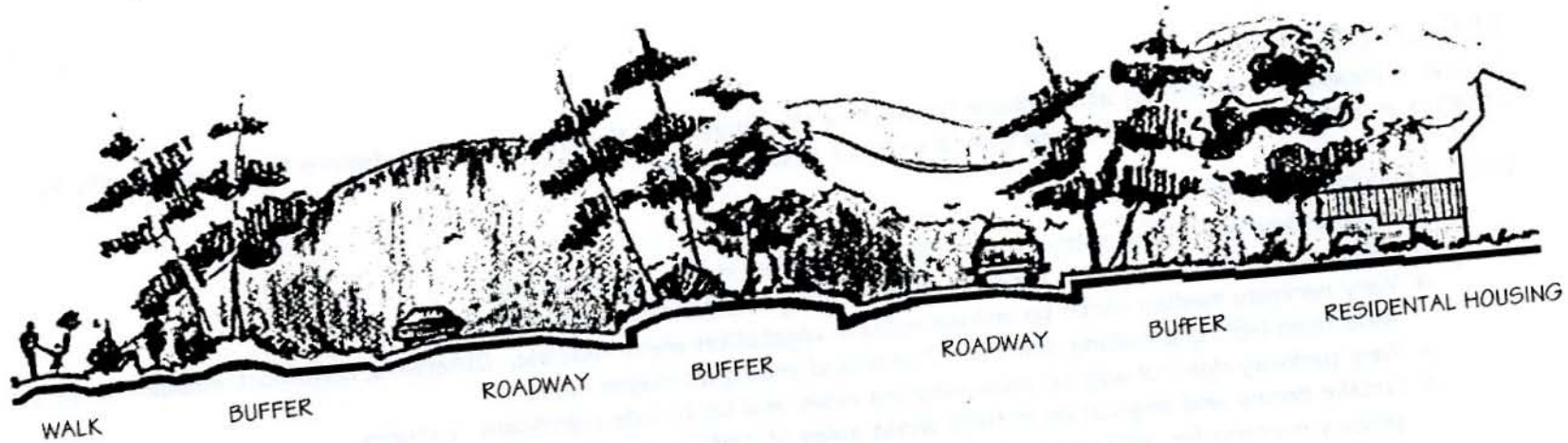
Provide a pleasant and inviting atmosphere to welcome the citizens of Bowling Green and visitors to the community by creating a parkway corridor to the heart of the city of Bowling Green.

RECOMMENDATIONS

- o Realign and widen Cemetery Road to four lanes from Hayes Lane to I-65.
- o Separate traffic lanes with medians from existing four lane roadway to I-65.
- o Vary parkway median width to include natural vegetation where feasible. Otherwise, construct medians to be 24' wide from I-65 graduating down to 12' wide and ending at Hayes Lane.
- o Vary parkway right-of-way to allow pleasing views and to include significant features.
- o Locate berms and vegetation buffers along sides of parkway to provide interest, enframe views and create privacy screens for adjacent property owners as well as to provide a varying sense of enclosure and expanse.
- o Limit access to roadway with divided median sections.
- o Construct all sidewalks to be 5' wide and detached from the road edge.
- o Specify 50' curb radius at 31W and Cemetery Road intersection.
- o Locate 8' bike path to south side of Cemetery Road, separated from road and sidewalk by plantings.

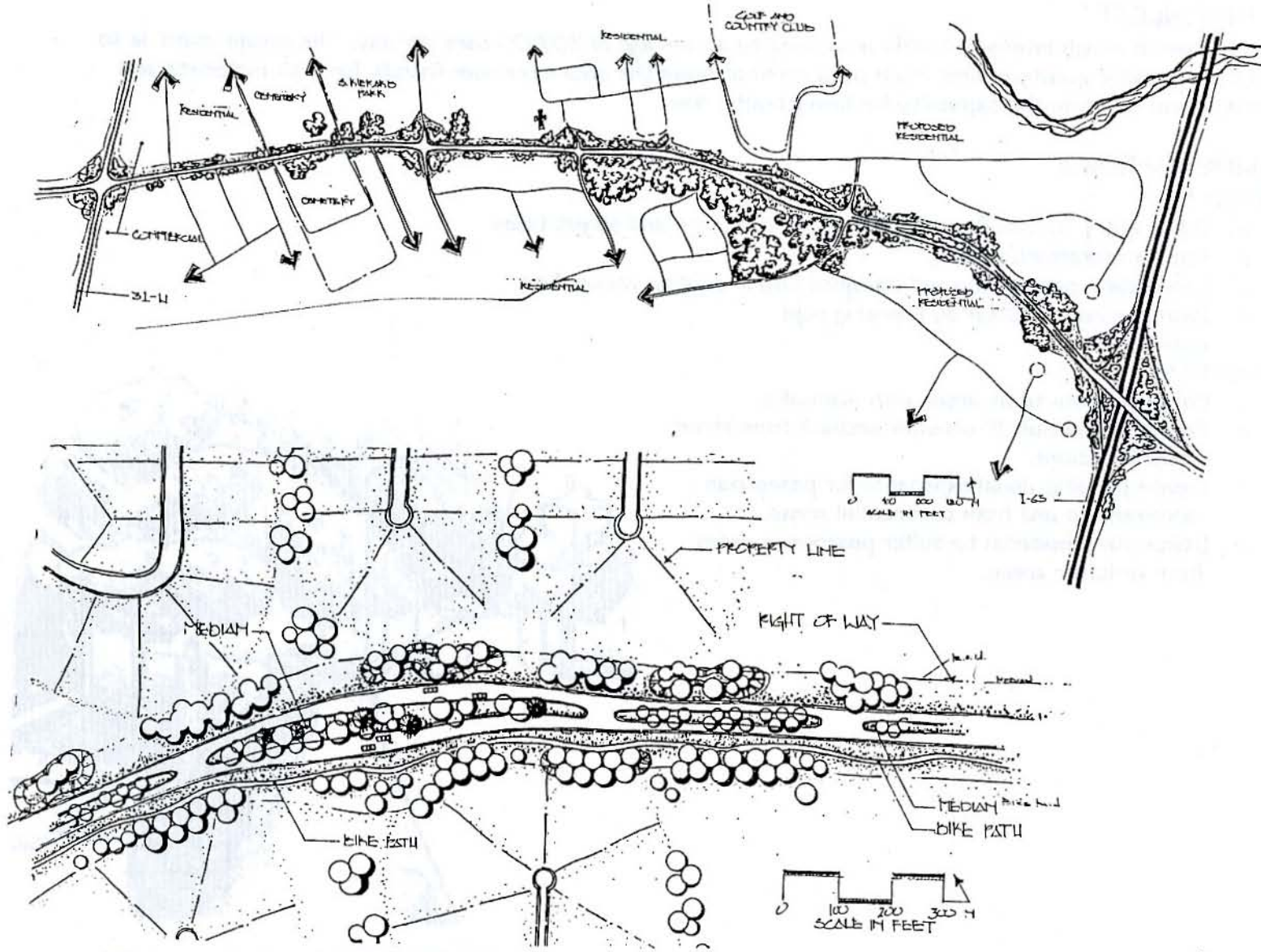


TYPICAL INTERSECTION PLANTING CONCEPT



CEMETERY ROAD - RESIDENTIAL BUFFER

CEMETERY ROAD REALIGNMENT PLAN



HIGHWAY 31W

DESIGN CONCEPT

The 31W Bypass is a high intensity traffic area used by an average of 30,000 cars per day. The design intent is to improve the aesthetic quality of this much used corridor, make the area more user friendly for both motorists and pedestrians, and maintain the capability for heavy traffic flow.

RECOMMENDATIONS

VEHICULAR

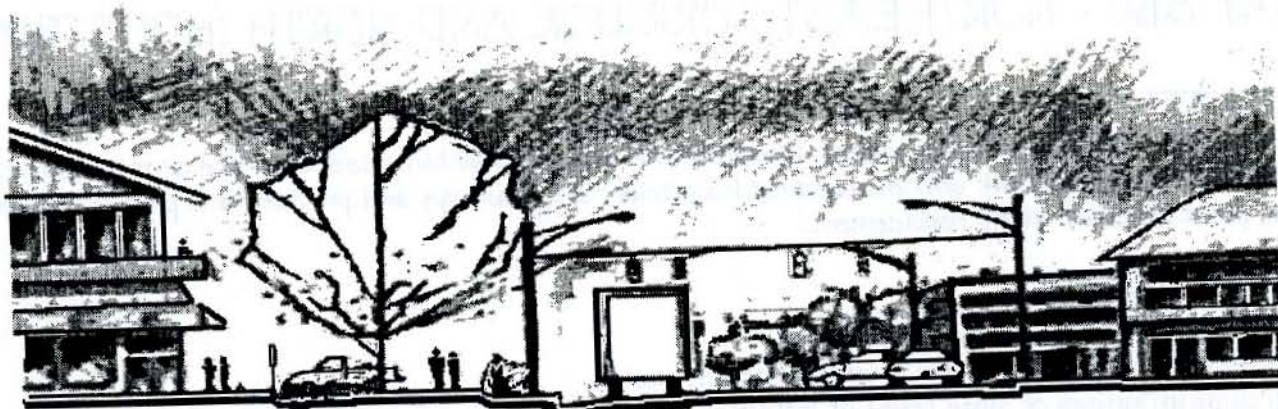
- o Define entry TO 31W Bypass with better curb cuts and street trees.
- o Remove storefront parking.
- o Consolidate parking into well designed lots in existing vacant lots.
- o Decrease visual clutter by imposing sign ordinances.

PEDESTRIAN

- o Provide access to all areas with sidewalks.
- o Require a minimum 5' sidewalk setback from street where applicable.
- o Create pleasing visual experience for pedestrian movement to and from commercial areas.
- o Utilize plant material to buffer pedestrian areas from vehicular areas.



PEDESTRIAN WALKWAY



COMMERCIAL

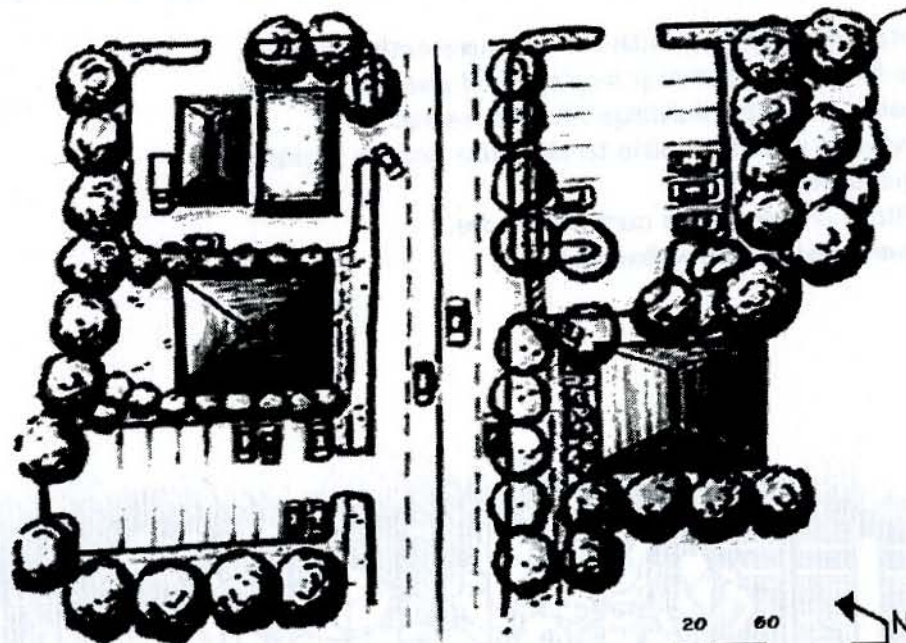
PARKING

WALK

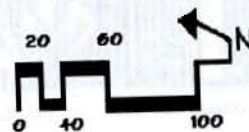
BUFFER

ROADWAY

COMMERCIAL



TYPICAL COMMERCIAL ZONE



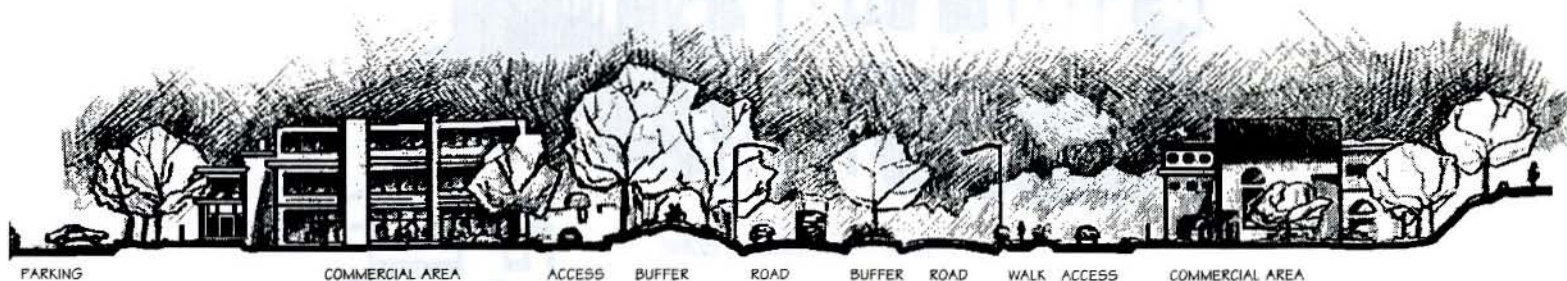
HIGHWAY 31W - NORTHEAST CORRIDOR AND NORTH INDUSTRIAL PARK

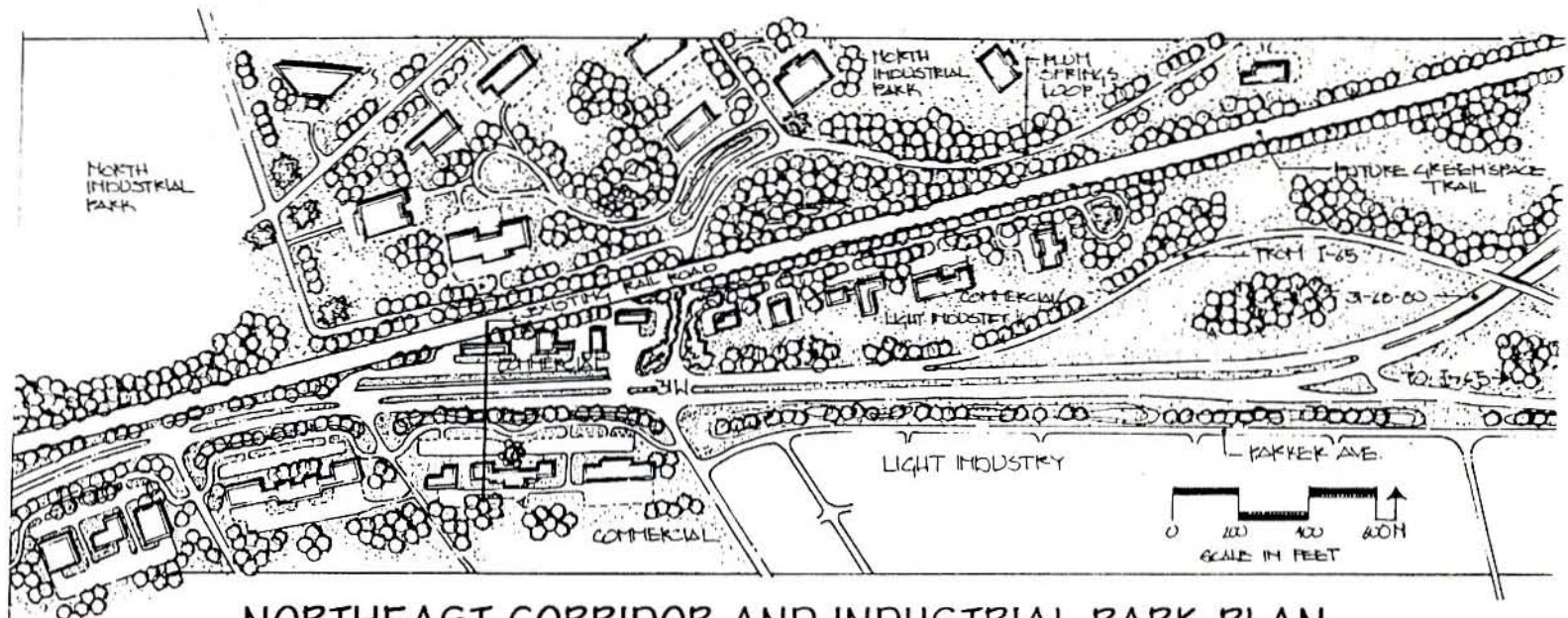
DESIGN CONCEPT

Create an impression of corridor unity, prevent inappropriate and unattractive uses along the corridor, eliminate access problems, delineate Industrial Park entries, enhance Industrial Park roadways and provide for a plan of regular maintenance, plant care and plant replacement.

RECOMMENDATIONS

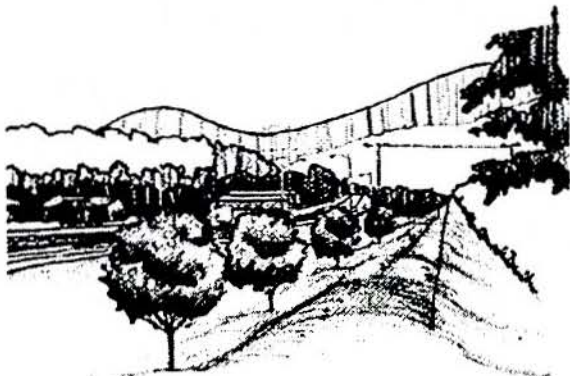
- o Curb edges of roadway and limit curb cuts.
- o Utilize directional signage within a uniform design mode.
- o Plant close groupings of large trees at patterned intervals along roadways.
- o Utilize tree masses to define areas.
- o Provide pleasing views of business establishments and entryways with appropriate signage and landscaping.
- o Buffer inappropriate adjacent uses with berms where setbacks allow.
- o Regulate setbacks for auto dealership displays and gas station lots.
- o Provide parking beside or behind buildings where possible.
- o Include service roadways where possible to eliminate access problems.
- o Enact signage regulations.
- o Eliminate underutilized or dangerous curb entrances.
- o Provide safe, pleasant pedestrian walkways.



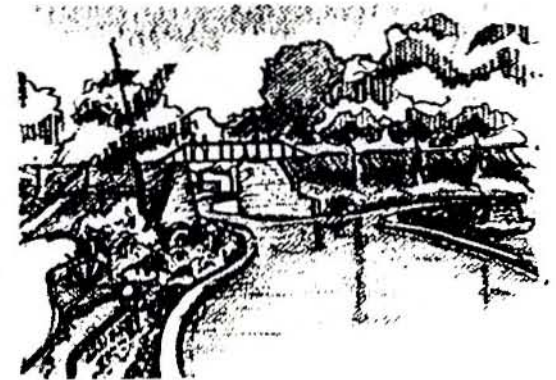


NORTHEAST CORRIDOR AND INDUSTRIAL PARK PLAN

This corridor provides entry into the existing industrial area, in which the Corvette plant may specifically be sited. The area contains a confusion of mixed use and access, with many underutilized parcels and buildings. Proposed for industrial expansion, this area is important as a first impression of the manufacturing sector.



VIEW FROM PROPOSED RAIL WALKWAY



31W ENTRANCE TO N. INDUSTRIAL PARK

There is no page 68

INTRODUCTION

Running through Bowling Green is the Barren River, which once carried citizens and goods throughout the region. While Bowling Green has remained the social and economic hub for the area, highways and railroads are now the routes for transportation. The river flows along, virtually unnoticed by passing motorists.

Still, the river remains a source of tremendous potential. Meandering through the countryside, it offers recreational and economic opportunities along its banks. People are attracted to water and enjoy being near it. The Barren River is a significant natural feature and provides a "sense of place" that is unique to Bowling Green and Warren County. It is a part of the region's historical identity and a link between the city and county.. By tapping into its latent potential, the Barren River can return as a key element in the vitality and imageability of Bowling green and Warren County.

OVERVIEW MAP



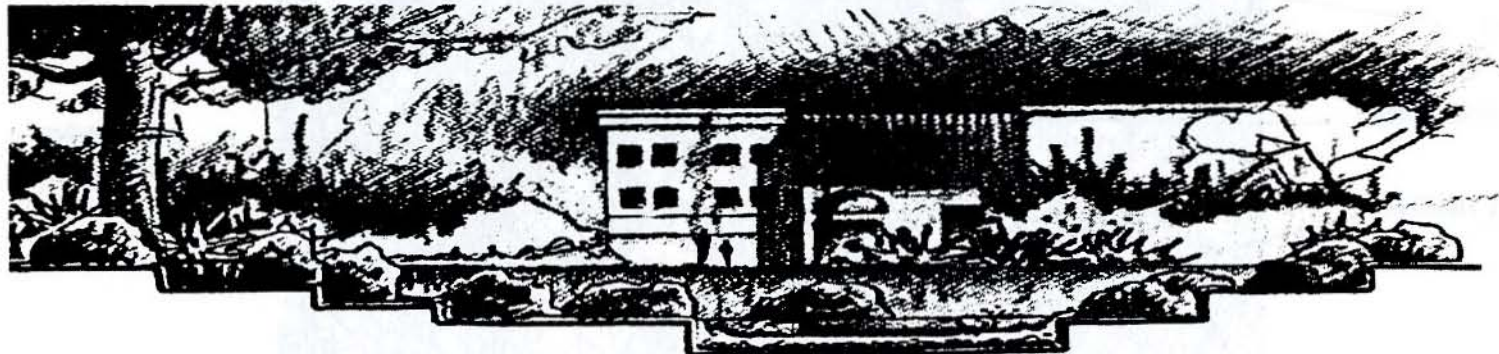
RIVERFRONT DEVELOPMENT

DESIGN CONCEPT

Revitalize the heart of the city of Bowling Green through linkage to the Barren River, and Warren County.

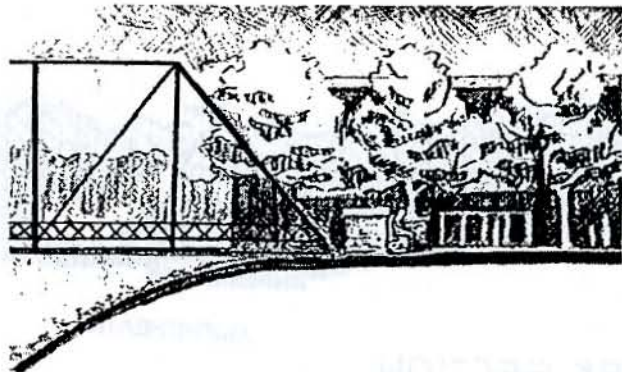
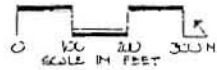
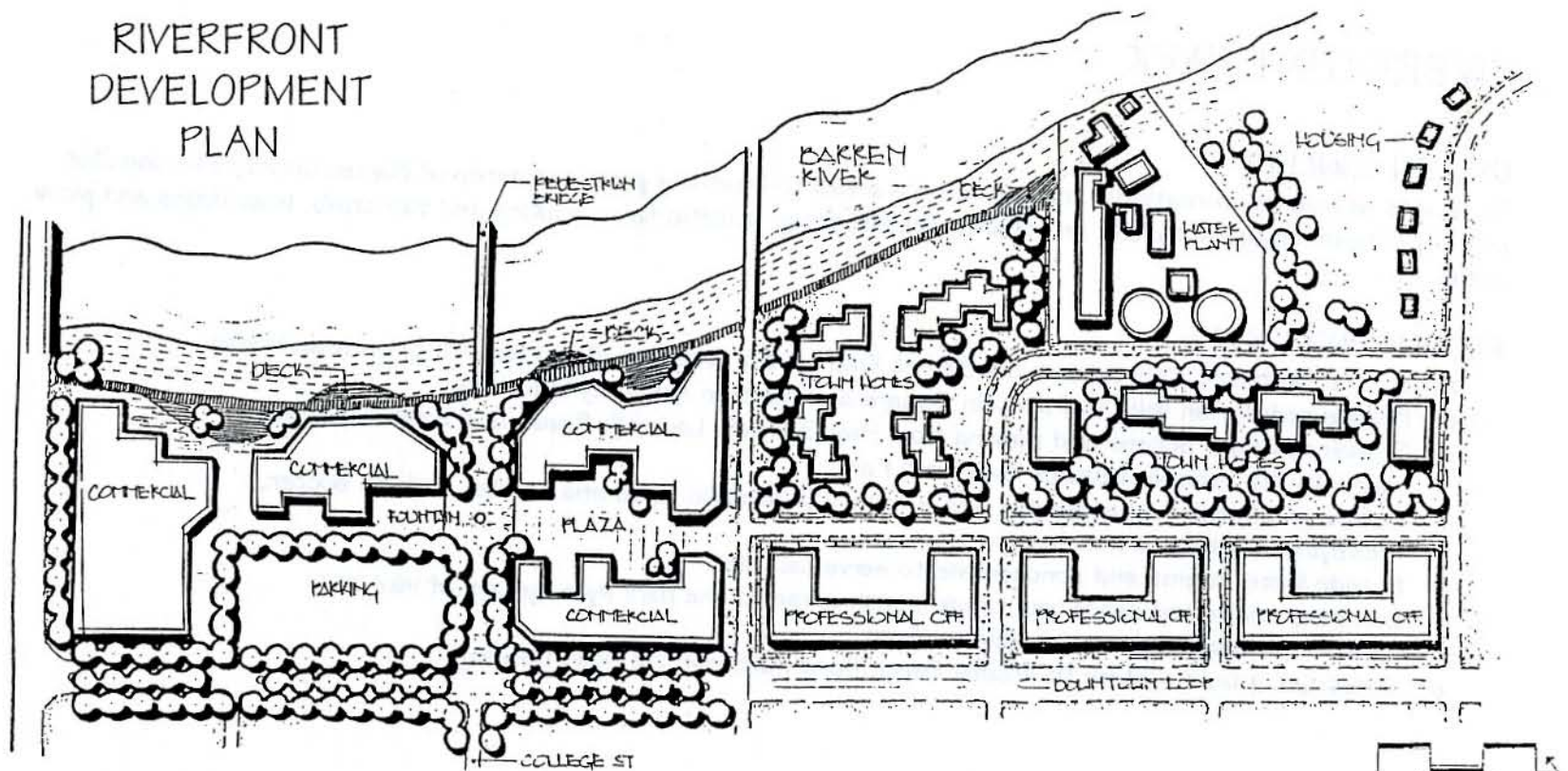
RECOMMENDATIONS

- o Re-route Hwy. 31W Bypass through Second Street in order to open new areas for development that include the Barren River.
- o Rename Hwy. 31W Bypass to give the area identity and to provide a gateway to the city.
- o Utilize the historic railroad bridge as a feature in the sightline from the amphitheater through downtown to Cherry Hall at Western Kentucky University.
- o Include commercial/retail, residential and professional office use.
- o Orient views toward the Barren River.
- o Construct a boardwalk the along the development to provide a pedestrian link to the all areas in the development, the park and the Depot.
- o Construct decks cantilevered over the river bank to provide viewing areas for the river and park.
- o Building design should incorporate interior courtyards to be used by pedestrians, service and emergency vehicles.
- o Create a greenspace to separate townhomes from commercial and professional uses.
- o Locate professional offices near the Medical Center.
- o Use State Street for local vehicular access to the Riverfront Park.

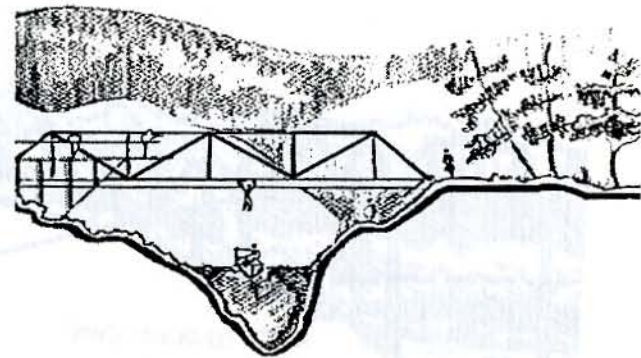


COMMERCIAL VIEW FROM FOUNTAIN

RIVERFRONT DEVELOPMENT PLAN



COLLEGE STREET BRIDGE



RIVERFRONT PARK

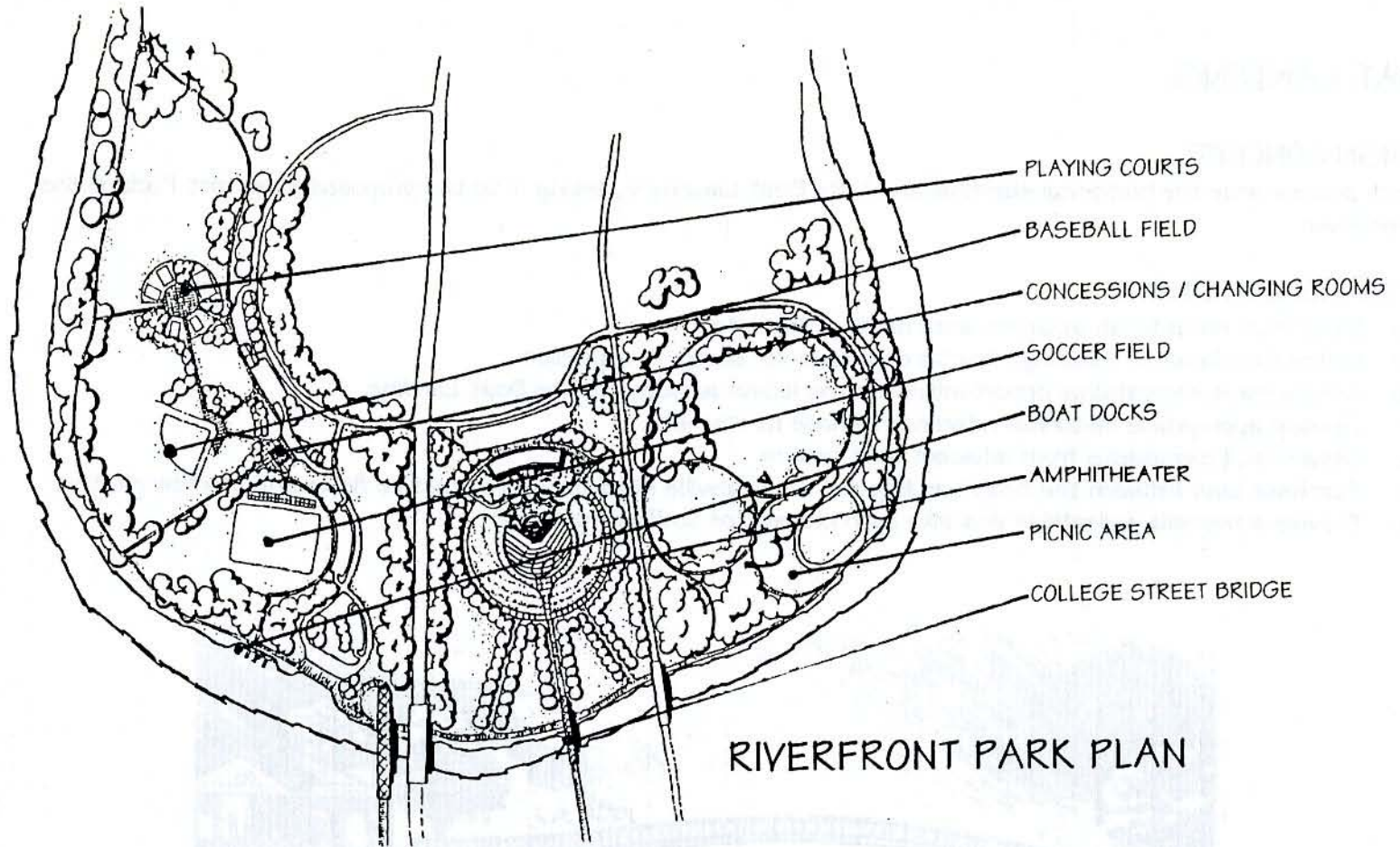
DESIGN CONCEPT

To provide additional recreational and greenspace areas to meet the projected needs of Warren County into the 21st century. These needs will include an outdoor amphitheater, athletic fields, walking and bike trails, boat docks and picnic areas.

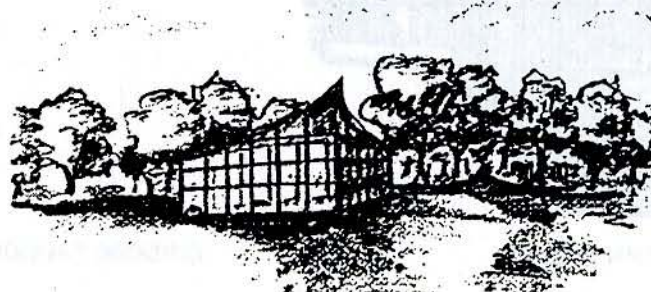
RECOMMENDATIONS

- o Locate Riverfront Park across the Barren River at the terminus of the historic pedestrian bridge.
- o Provide pedestrian links to Fountain Square and Western Kentucky University.
- o Provide vehicular access and parking from Hwy. 31W and Louisville Road via a boulevard which connects the various areas of Riverfront Park.
- o Include an outdoor amphitheater and a variety of athletic fields and courts, such as soccer, volleyball, basketball and tennis.
- o Provide locker rooms and concessions to serve facilities.
- o Link boat docks and canoe and kayak launch areas to the park by a system of bike and pedestrian paths along the Barren River.
- o Construct a trail system to access Beech Bend Park and the Boat Landing.

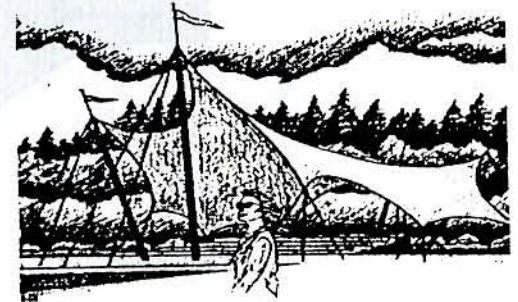




RIVERFRONT PARK PLAN



OUTDOOR PAVILLION



AMPHITHEATRE

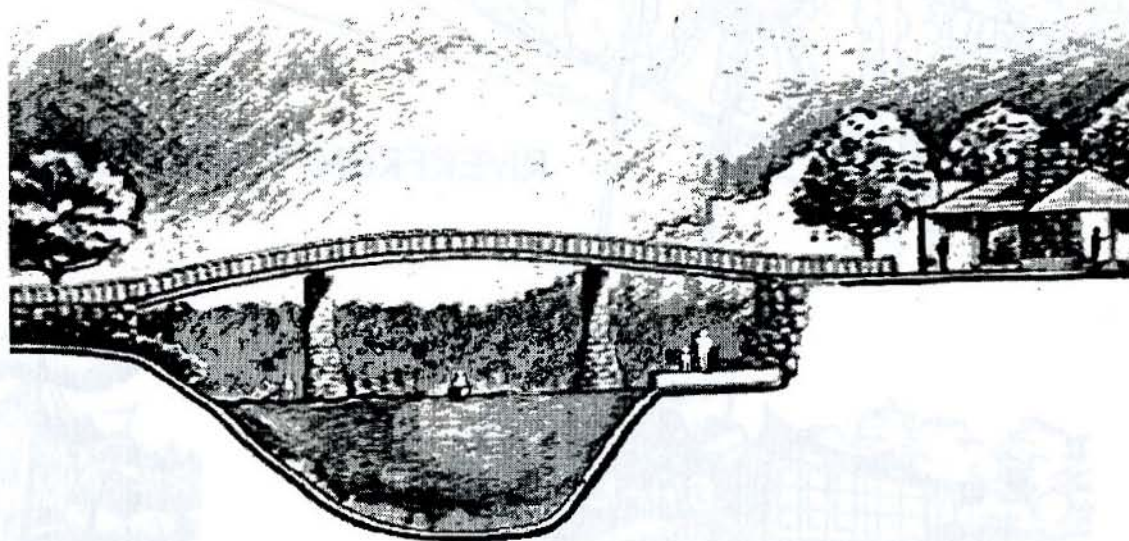
BOAT LANDING

DESIGN CONCEPT

Reflect and enhance the historical significance of the Boat Landing by linking it to the proposed Riverfront Park on the Barren River.

RECOMMENDATIONS

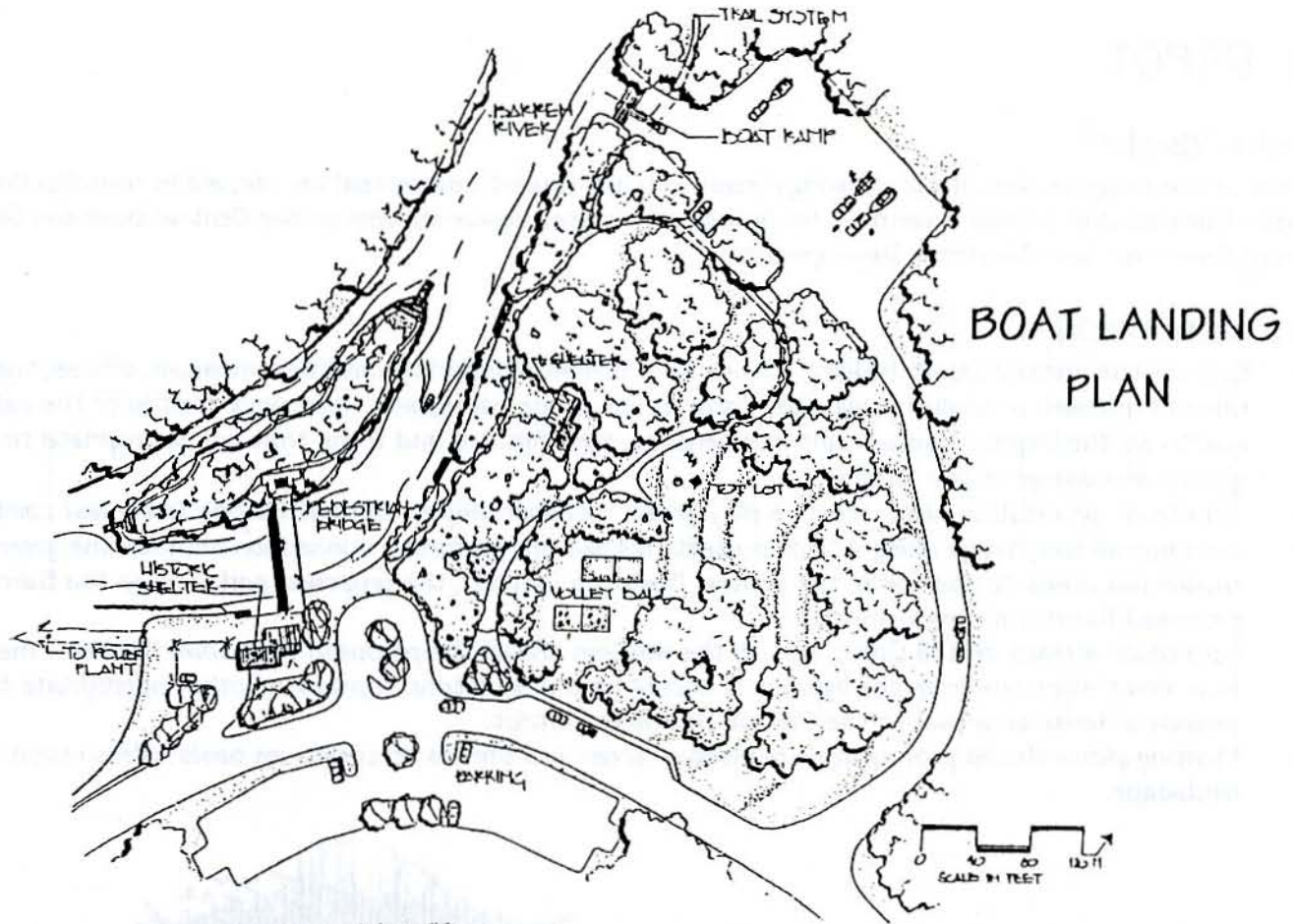
- o Move boat ramp to an adjacent area north of the site.
- o Utilize foundation of existing structure as base for design of a pavilion.
- o Create other recreational opportunities on the island adjacent to the Boat Landing.
- o Develop appropriate historical reference signage for the site.
- o Obtain land easements from adjacent land owners.
- o Purchase land between the Boat Landing and Richardsville Road for sport practice fields and overflow parking.
- o Provide a five mile pedestrian and bike path connection to Riverfront Park.



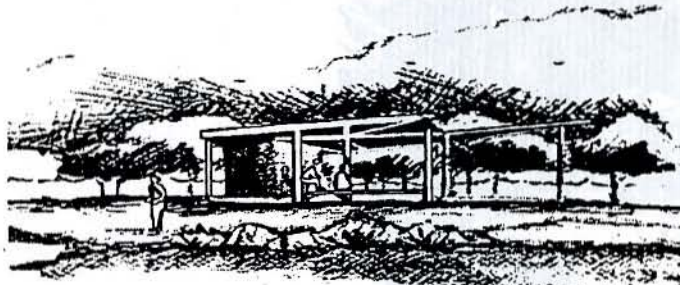
TO ISLAND

PEDESTRIAN BRIDGE

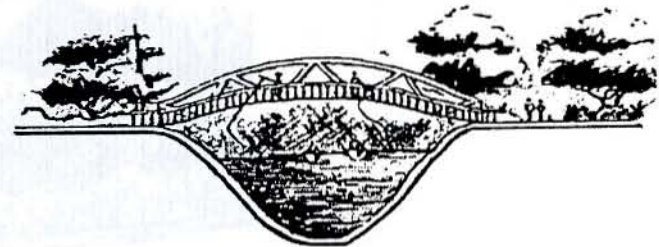
OUTDOOR PAVILION



BOAT LANDING PLAN



ISLAND FACILITIES



TO ISLAND FACILITIES

ISLAND CROSSING

NATURE TRAIL

THE DEPOT

DESIGN CONCEPT

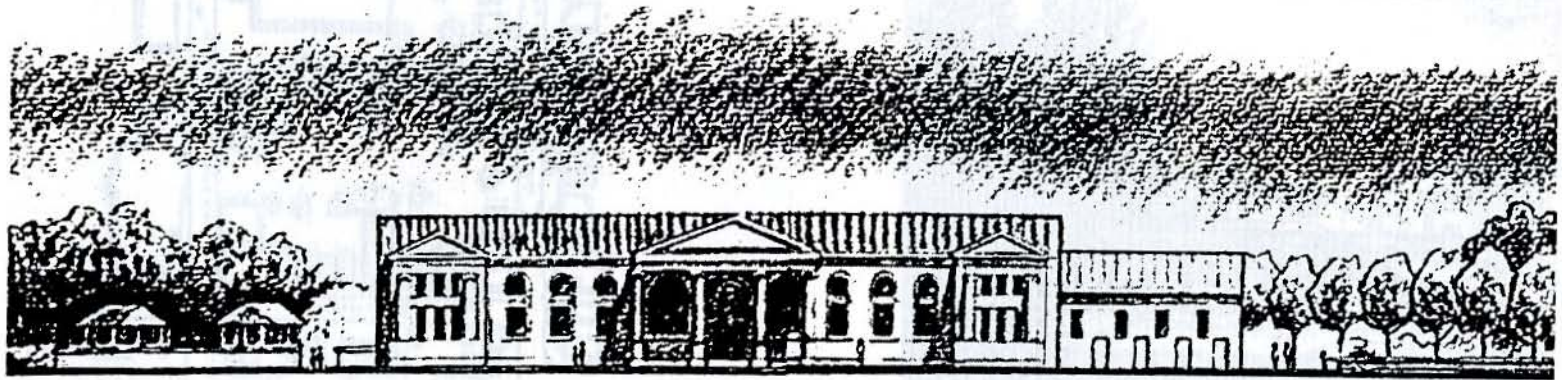
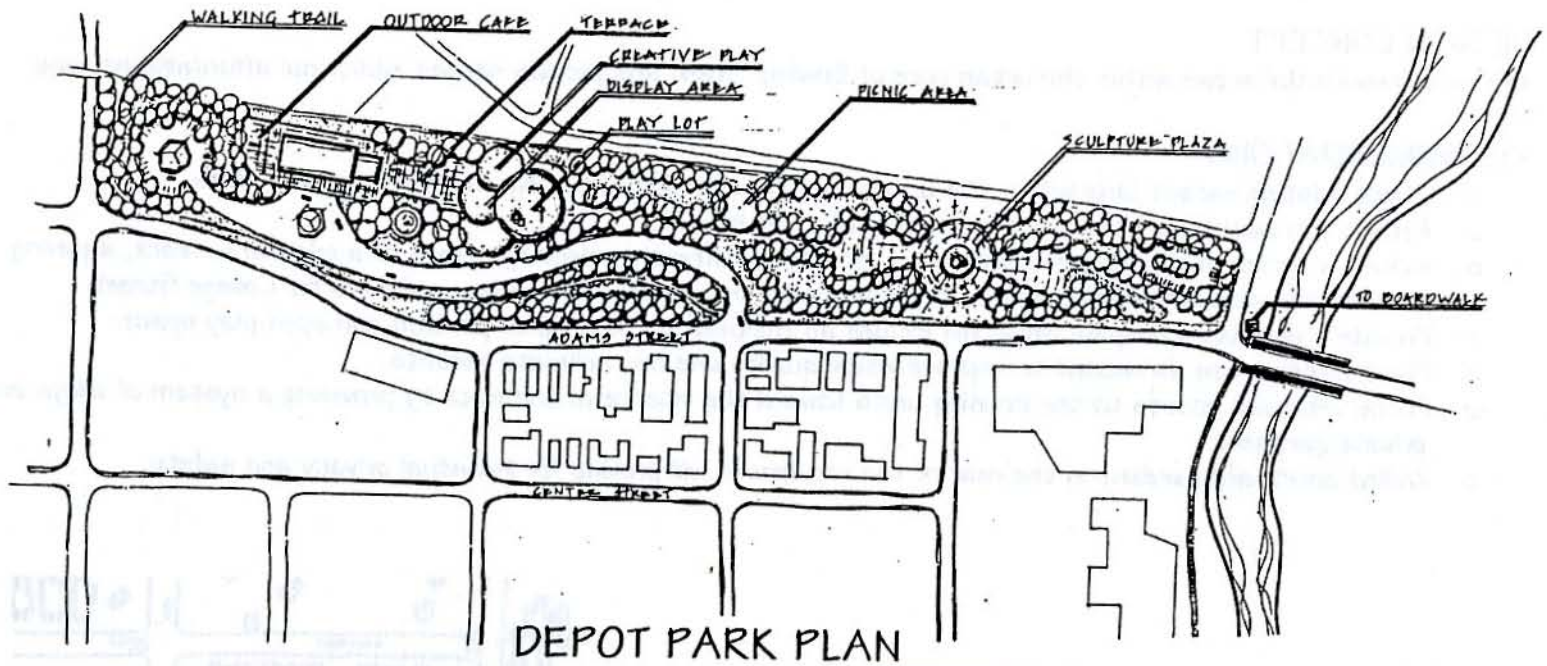
To enhance the image of the city of Bowling Green, attract tourist and recreation use, aid in revitalization of the Central Business District, and provide a terminal for linkage of the greenspace system to the Central Business District and the proposed River Park and Riverfront Development.

RECOMMENDATIONS

- o Restore the historic Depot building for use as a community center, children's museum, offices, theater, or railroad museum or similar public use. Incorporate stone paving and stone work that is of the same scale and quality as the Depot. Use wrought iron benches, light fixtures and trims that are appropriate to the scale, quality and design of the building.
- o Construct an outdoor cafe, creative play areas, outdoor display terrace, walking trails and comfort stations.
- o Continue bikeway/trails along site of present railroad bed to form a connection between the greenspace system, residential areas to the north, the Central Business District, the proposed park across the Barren River and the proposed Riverfront Development.
- o Construct a plaza on the Depot site at the western end of the proposed Downtown Bypass. The site should be in a direct sight line from the bypass. It should have a sculpture, fountain or other appropriate focal point to provide a sense of arrival to the Central Business District.
- o Planting plans should provide large masses of trees and shrubs to create an oasis effect within the urban landscape.



THE DEPOT



PARKING

OUTDOOR CAFE

DEPOT

DISPLAY TERRACE

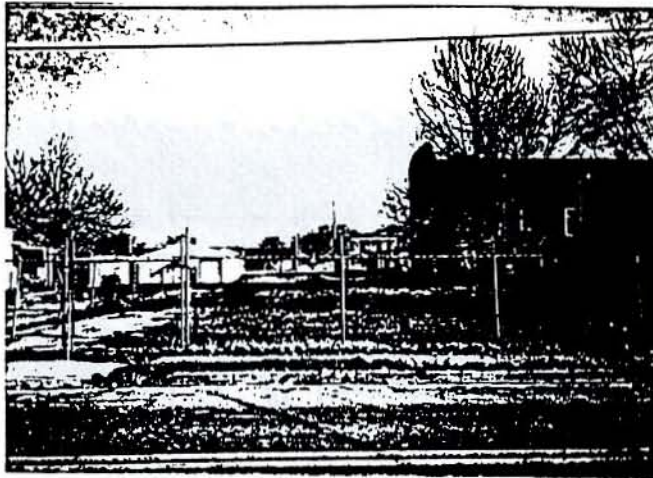
RESIDENTIAL INFILL HOUSING

DESIGN CONCEPT

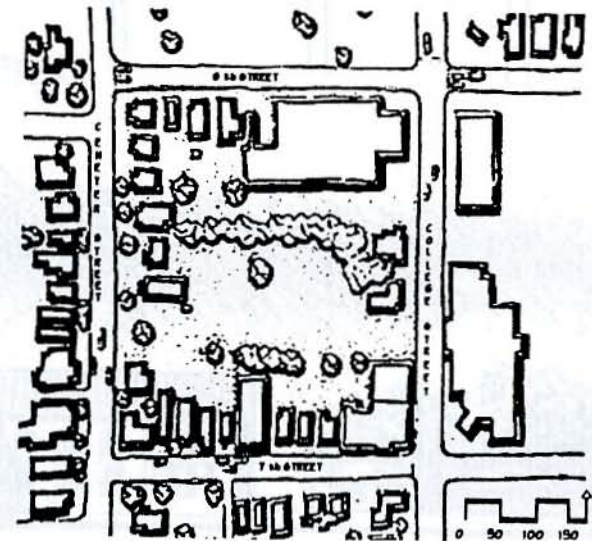
Revitalize residential areas within the urban core of Bowling Green and provide needed additional affordable housing.

RECOMMENDATIONS

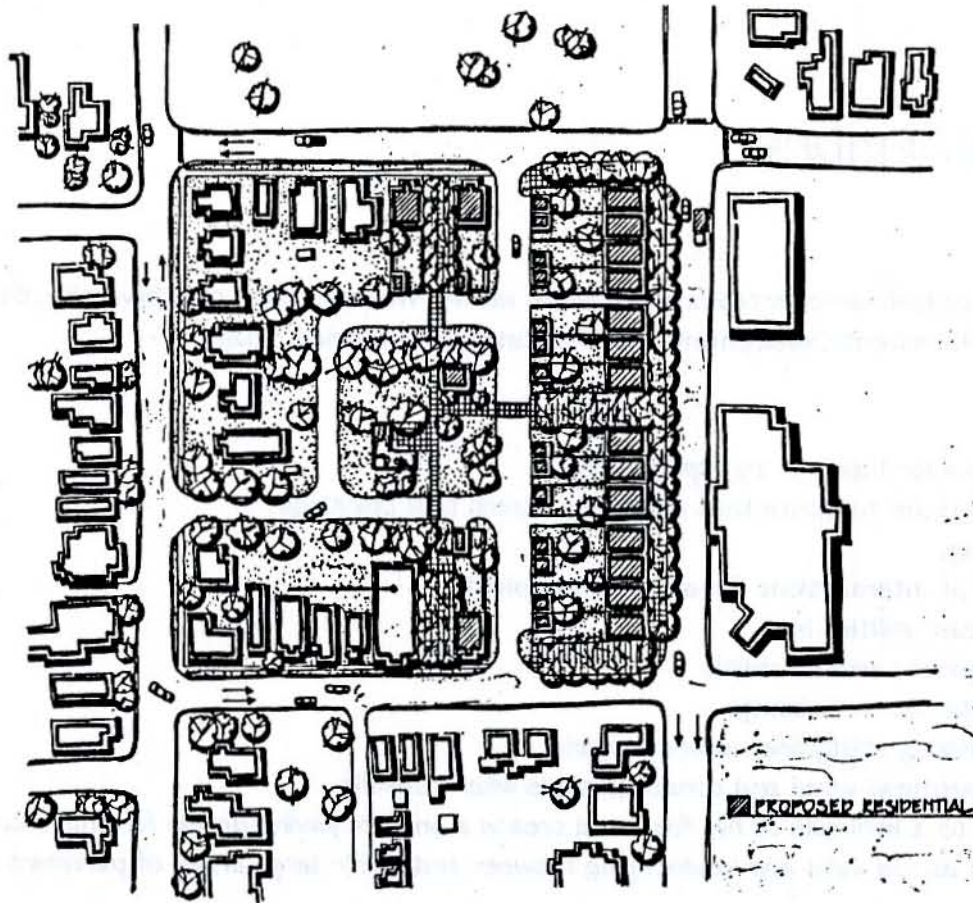
- o Utilize existing vacant land within the urban core for affordable housing and neighborhood parks.
- o Reflect the existing architectural styles of adjacent housing.
- o Include a series of row houses relating to the College Street corridor by means of a minimal setback, a paving pattern and street tree placement consistent with the established design guidelines for College Street.
- o Provide a neighborhood park which will include an enclosed tot lot, picnic pavillion and open play space.
- o Plant shade trees as needed to improve visual quality and microclimate benefits.
- o Focus vehicular access to the housing units toward the interior of the block by providing a system of alleys and private garages.
- o Walled courtyard gardens in the rear of the residences will provide for individual privacy and safety.



VIEW OF EXISTING AREA



BEFORE



AFTER - PROPOSED RESIDENTIAL INFILL



TOT LOT

ALLEY

INFILL HOUSING

ROADWAY

COMMERCIAL

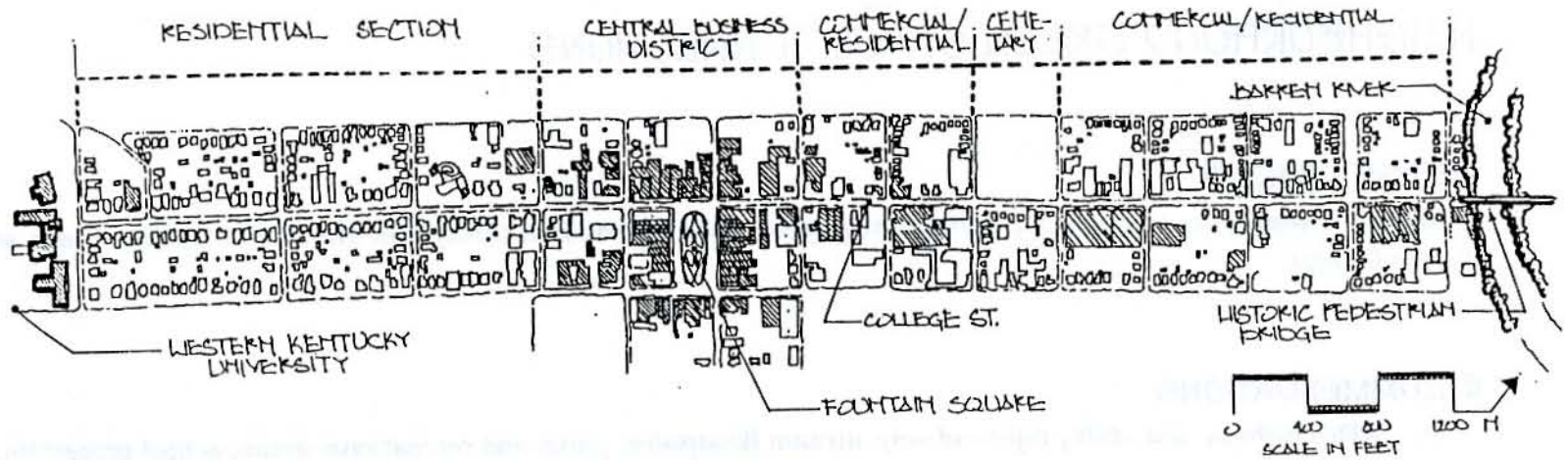
COLLEGE STREET CORRIDOR

DESIGN CONCEPT

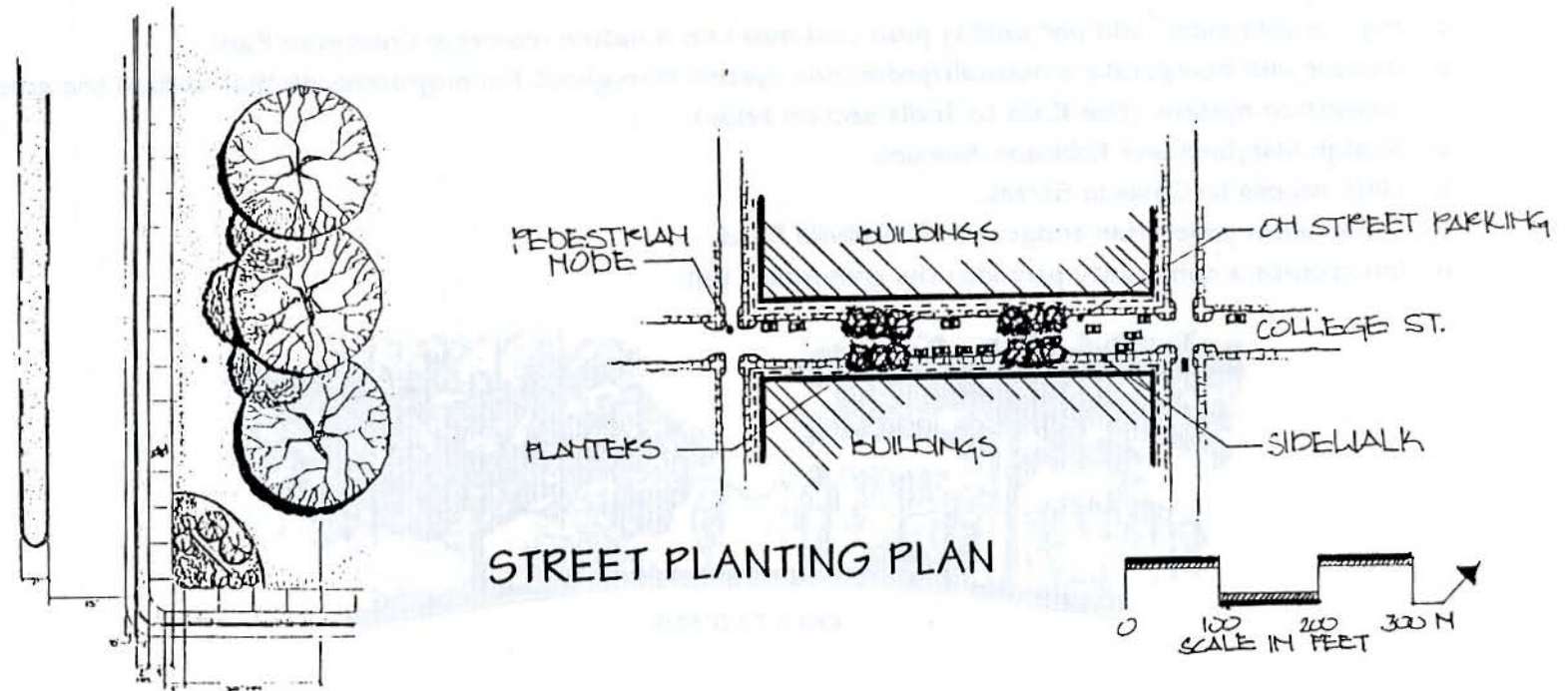
Transform College Street into a pedestrian-oriented corridor which will link Western Kentucky University, the Central Business District, the proposed Riverfront Development and the Historic Pedestrian Bridge.

RECOMMENDATIONS

- o Establish uniform setbacks for buildings by type of use.
- o Limit on-street parking in order to utilize that space for street tree plantings.
- o Increase off-street parking.
- o Create pedestrian nodes at intersections for safety and visibility.
- o Minimize impact of overhead utilities by
 - * putting utilities underground where feasible
 - * relocating utility lines to rear of buildings
 - * condensing and reorganizing utility lines where possible
- o Unify signage to reduce overhead wires and condense signs when possible.
- o Increase sidewalk widths to a minimum of five feet, and create a uniform paving design for entire corridor.
- o Create buffer zones such as low walls and landscaping between and within large areas of pavement such as parking lots.
- o Encourage a high level of exterior building maintenance and landscaping along street frontages.
- o Add public amenities such as benches and trash receptacles in the Central Business District.
- o Add public statues or sculptures that identify and reflect the character and history of Bowling Green and Warren County.
- o Reserve the block opposite the Cemetery on College Street as future open space.
- o Enhance the aesthetic qualities of Fountain Square:
 - * remove obstructions from the four main paths leading to the fountain.
 - * selectively prune the trees along the paths to form archways
 - * move benches from paths and stagger them to facilitate pedestrian circulation
- o Develop seasonal floral display beds for visual impact.



COLLEGE STREET CORRIDOR PLAN



STREET PLANTING PLAN

NEIGHBORHOOD GREEN SPACE CONNECTIONS

DESIGN CONCEPT

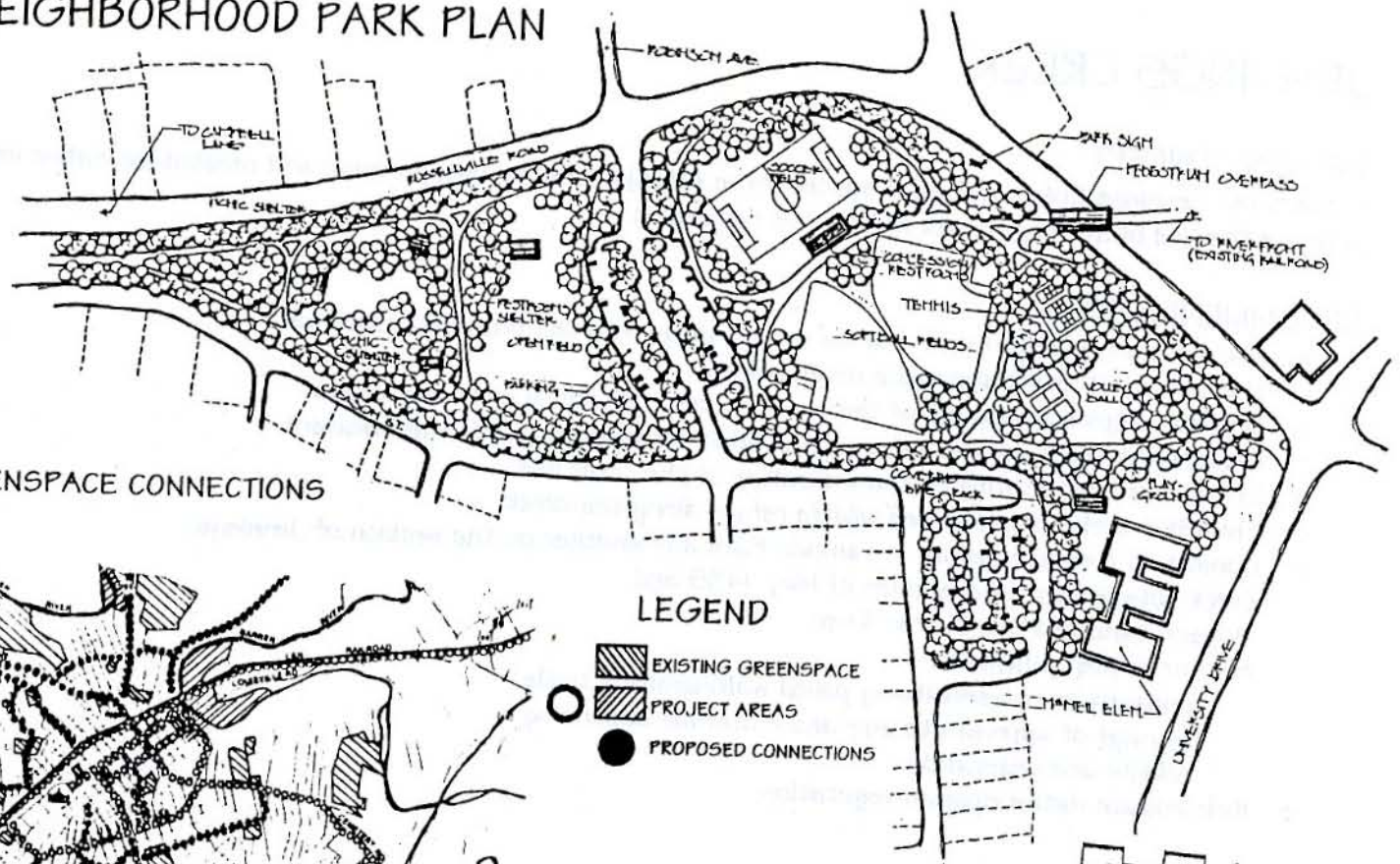
Enhance the aesthetic character by incorporating greenspace connections throughout the City of Bowling Green and Warren County.

RECOMMENDATIONS

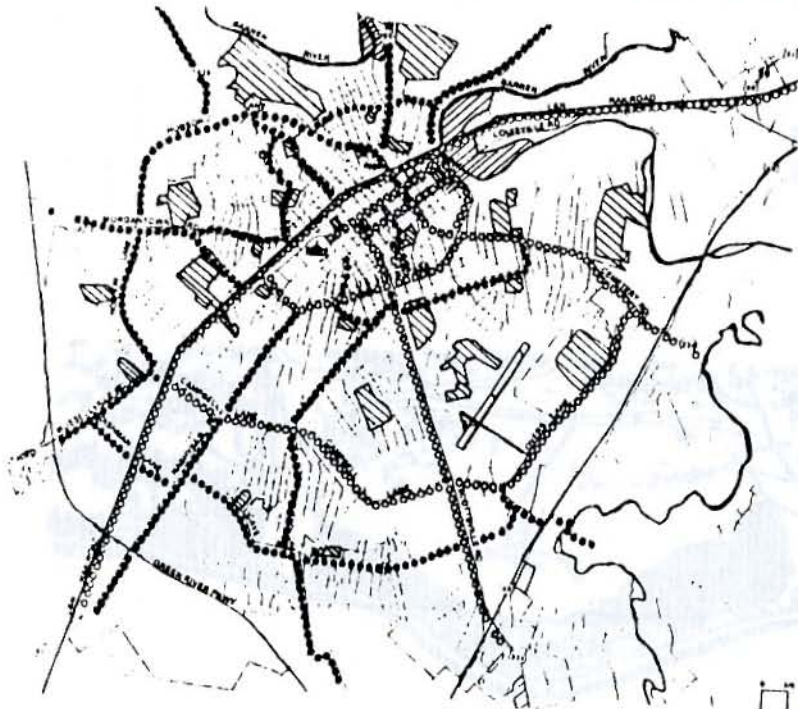
- o Utilize highway and utility rights-of-way, stream floodplains, parks and recreational areas, school properties, historic landmarks and abandoned rail lines for greenspace belt.
- o Incorporate open space, walking and bicycle paths into the neighborhoods and throughout the community of Bowling Green.
- o Improve entrances, add par walking path, and maintain a nature reserve in Crestmoor Park.
- o Improve and incorporate a sidewalk/pedestrian system throughout the neighborhoods that utilizes the greenspace connection system. (See Rails to Trails section below).
- o Realign Maryland and Robinson Avenues.
- o Limit access to Creason Street.
- o Construct a pedestrian bridge over Russellville Road.
- o Incorporate a community park into the greenspace belt.






NEIGHBORHOOD PARK PLAN

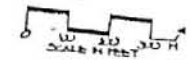


GREENSPACE CONNECTIONS



LEGEND

-  EXISTING GREENSPACE
-  PROJECT AREAS
-  PROPOSED CONNECTIONS



VIEW TO McNEIL ELEMENTARY SCHOOL

JENNINGS CREEK

DESIGN CONCEPT

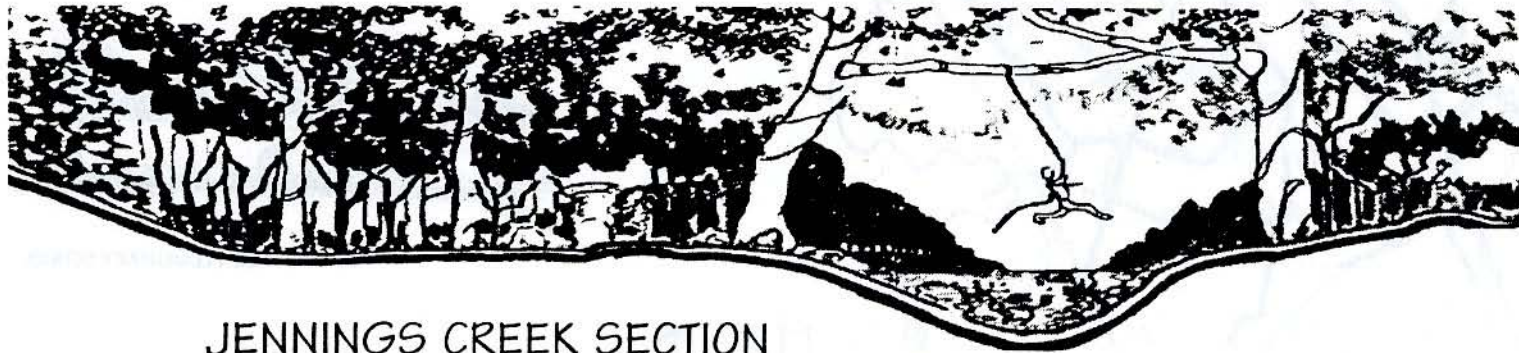
Protect the Jennings Creek ecological system from pollution and misuse, preserve and reestablish native vegetation, and promote the use of Jennings Creek for passive recreation.

RECOMMENDATIONS

- o Incorporate Jennings Creek and its surroundings into the proposed conservation easement and greenspace development.
- o Organize a general cleanup of the area, removing all forms of fill and waste.
- o Discontinue creek use as a drainage conduit for city and public wastewaters.
- o Do not permit rerouting or channelization of the creek bed.
- o Establish areas of protected wildlife refuge along the creek.
- o Construct a nature center in Lampkin Park and another on the section of Jennings Creek between the intersection of Hwy. 1435 and Hobson Lane and the Barren River.

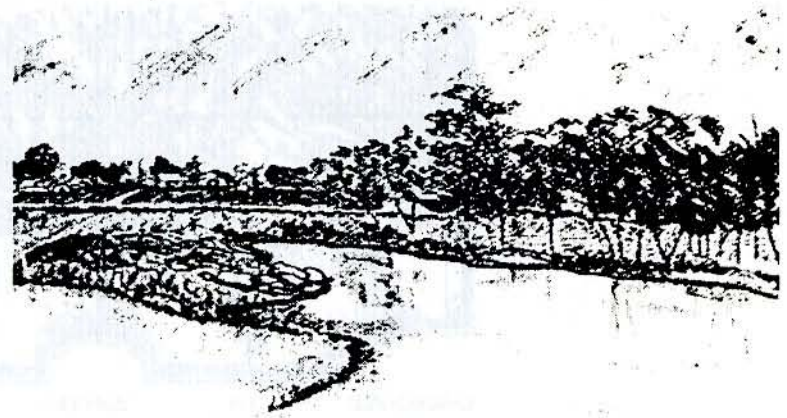
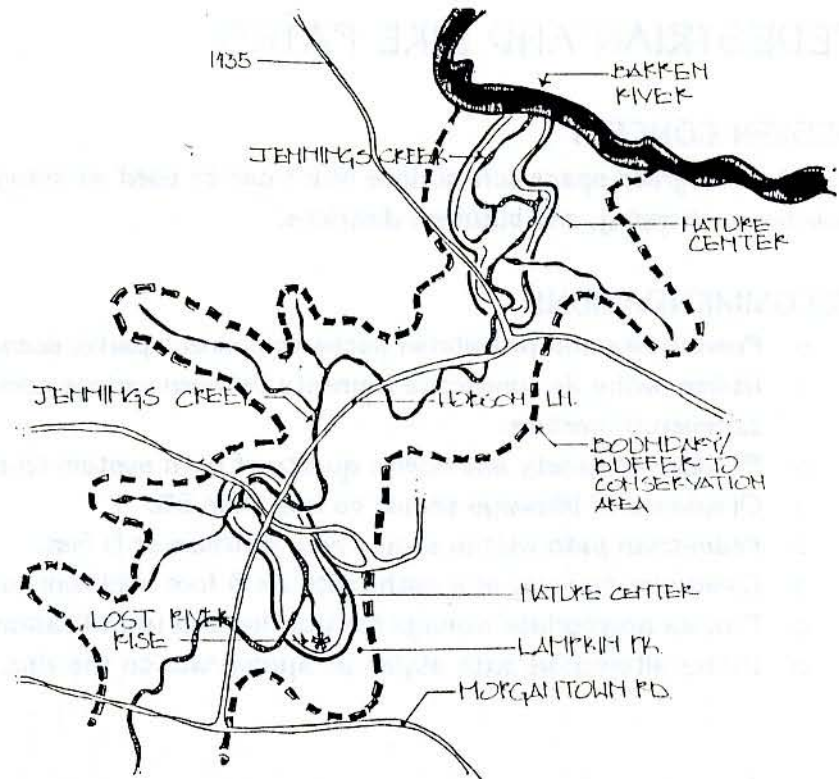
Nature center guidelines:

- *unpaved or eco-sensitively paved walking/hiking trails
- *signage of appropriate size and materials describing wildlife and vegetation.
- o Reintroduce native riparian vegetation.



JENNINGS CREEK SECTION

PRESERVATION
AND
RESTORATION PLAN
FOR
JENNINGS CREEK



VIEWS FROM JENNINGS CREEK

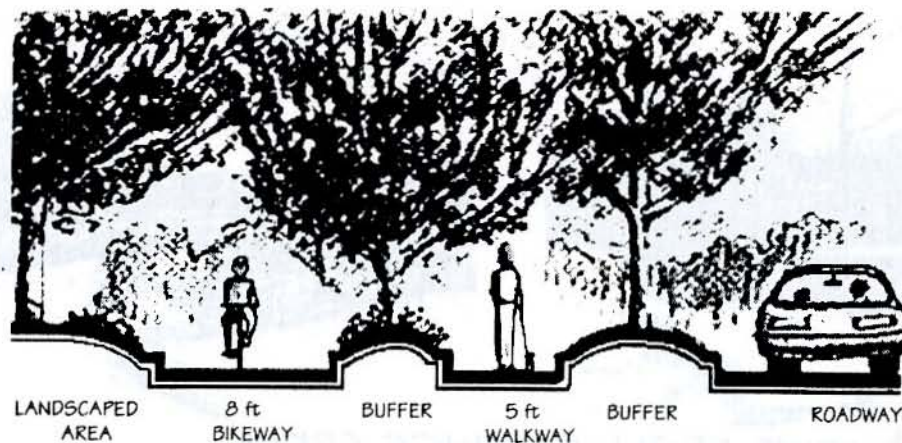
PEDESTRIAN AND BIKE PATHS

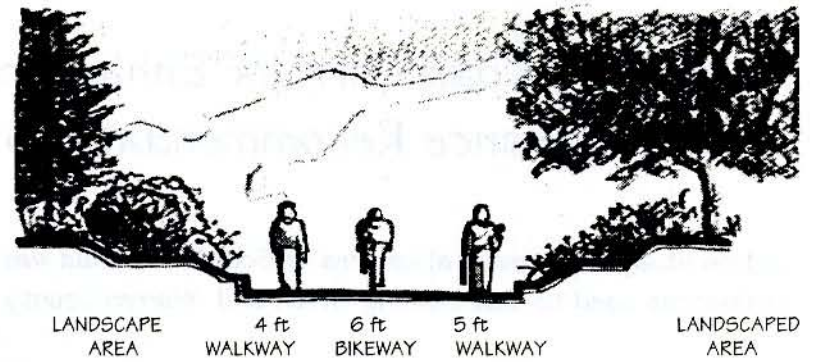
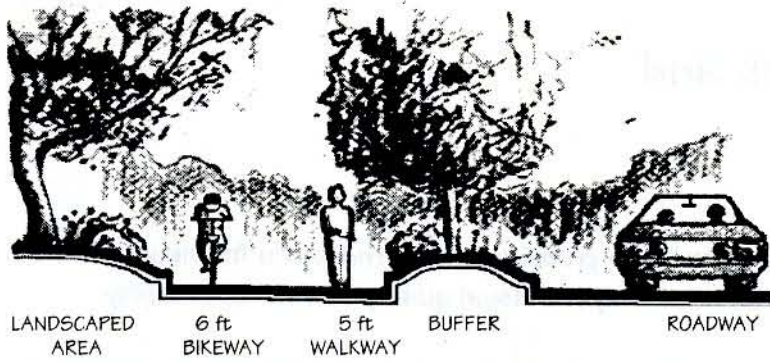
DESIGN CONCEPT

To establish green space connections which can be used as linkages between neighborhoods, schools, recreational areas, downtown, shopping, and business districts.

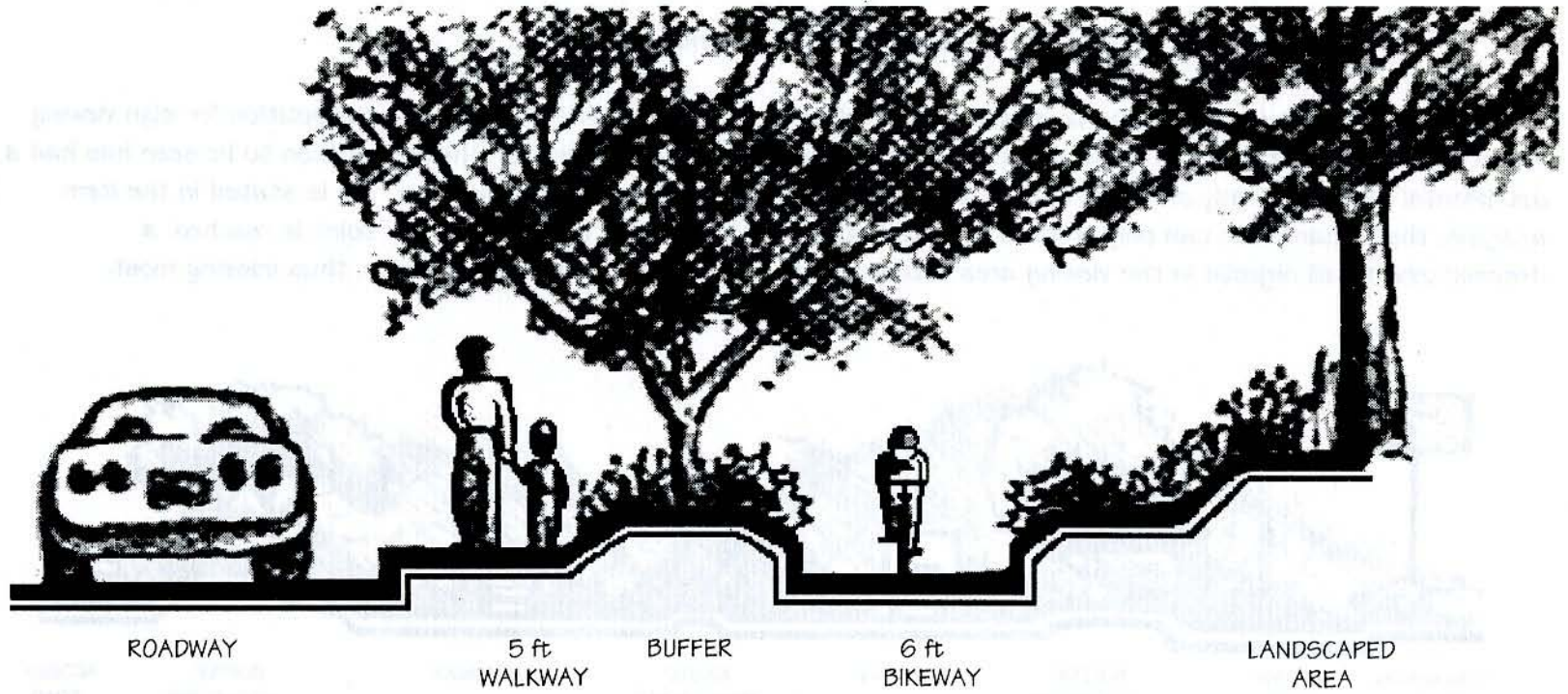
RECOMMENDATIONS

- o Provide bike and pedestrian paths to connect parks, scenic recreational and historic facilities.
- o Utilize paths as connective elements between various community elements such as schools, neighborhoods and commercial centers.
- o Provide for variety and scenic quality of path system to ensure maximum utilization.
- o Gradients of bikeways should be less than 5%.
- o Pedestrian path widths should be a minimum of 5 feet.
- o Construct two-way bike paths with an 8 foot minimum width.
- o Provide appropriate signage for location and identification.
- o Utilize alternative path styles as appropriate to the site. (see sketch insets)





TYPICAL PEDESTRIAN AND BIKE PATH SECTIONS



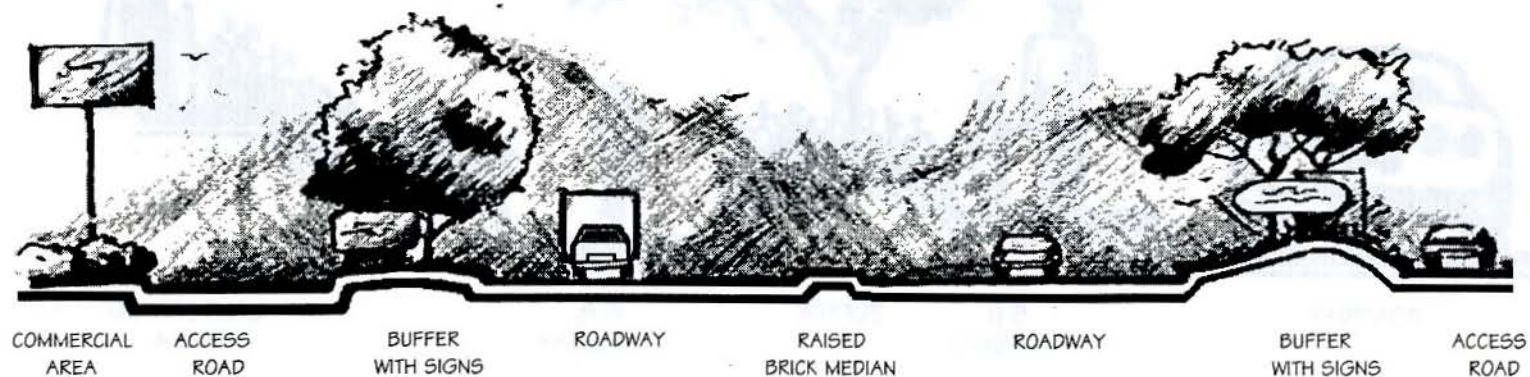
Scottsville Road Corridor Enhancement and Visual Ordinance Recommendations

In this study a representative area of Scottsville Road was used in order to produce recommendations for visual ordinances used to lead Bowling Green and Warren County toward enhancing the visual quality of their community.

The goal of this project was to reduce the visual clutter along Scottsville Road and produce an inviting entry corridor into the community. By using the visual quality analysis system introduced earlier in this booklet, recommendations have been formulated to produce methods enabling the community to enhance visual quality. These recommendations could not only be used for Scottsville Road but for the entire community.

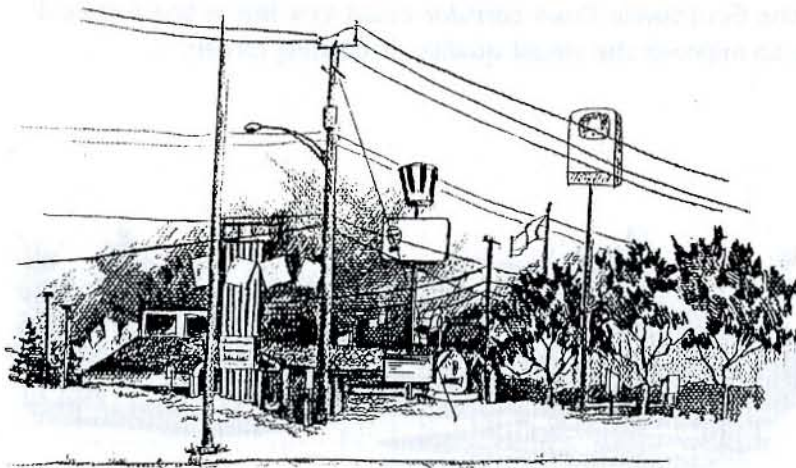
Visual Quality Recommendations

The first recommendation is to enact a sign ordinance for Bowling Green. Excessive competition for sign viewing has contributed greatly to the visual pollution along the Scottsville Road Corridor. The competition to be seen has had a detrimental affect not only on visual quality, but also to the businesses along the corridor. As is stated in the item analysis, the human brain can only process a limited number of items at a time. After this point is reached, a desensitizing to all objects in the viewing area occurs and the viewer enters into tunnel vision, thus missing most

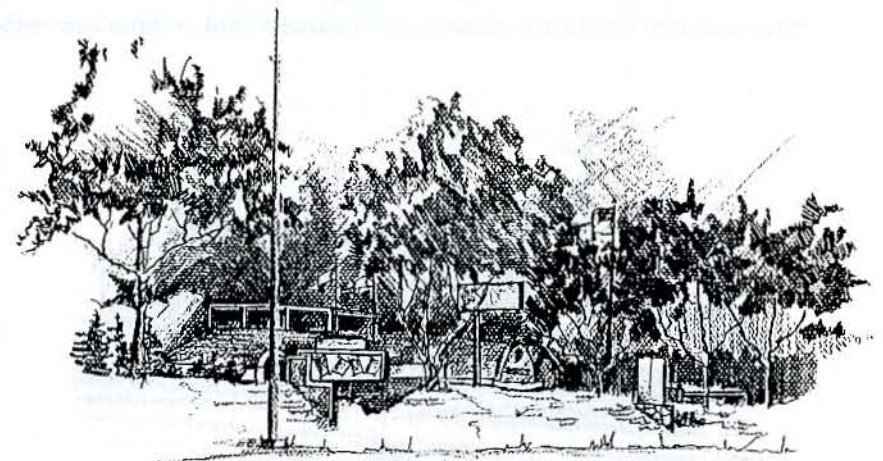


information. This has a detrimental impact on business owners, in that the race to be seen has created an atmosphere in which no one is seen. A sign ordinance allowing for height limits, size limits, and number of item limits, while allowing enough freedom for individual creativity in color, simple graphic, and design would increase visual quality and allow for healthy competition among the local businesses. This ordinance would not only enhance visual quality but would also allow competition to continue without increasing visual pollution.

Another recommendation is that a landscaping ordinance be placed into affect. This ordinance would be used to screen parking lots, thus breaking up the large expanses of asphalt and screening cars that dominate views along Scottsville Road. This would create a buffer and increase the visual quality along the corridor by introducing vegetation and minimizing the visible amounts of asphalt. The introduction of landscaping to the corridor would soften views and eliminate some of the harshness associated with commercial strip development like that of Scottsville Road.



BEFORE

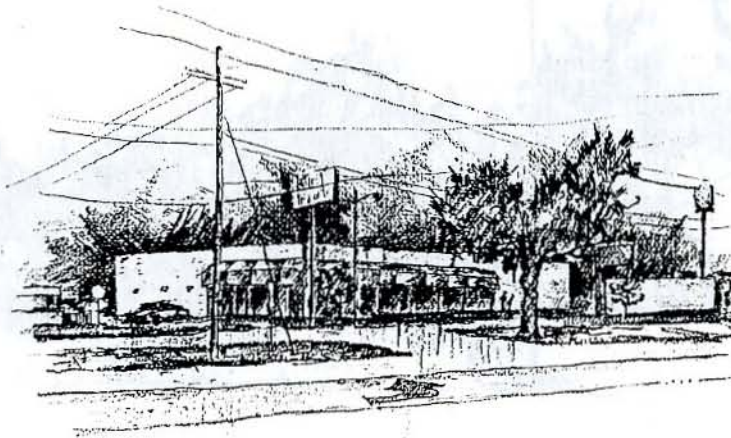


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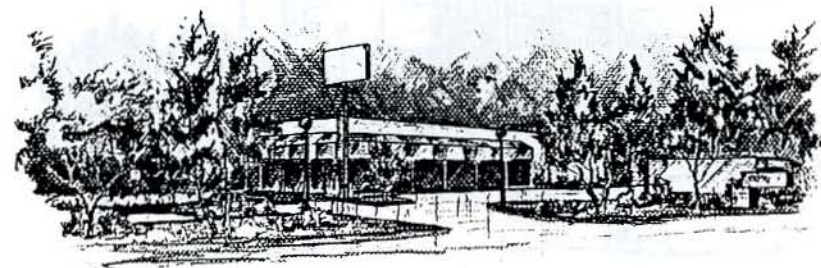
Utility movement is also another issue involved in the enhancement of visual quality along Scottsville Road. At the present time utility wires and poles greatly add to the visual pollution in this area. One recommendation is to move the poles and wires behind the businesses located on Scottsville Road and set up a utilities easement in this area. Another recommendation is to place the utilities underground. While expensive these recommendations would greatly improve the visual quality along the corridor and improve the entrance into the community.

Other recommendations are for the city to add to the tree massings which already exist between Scottsville Road and the small service road on either side. The massings in their present state are a good beginning but with the addition of more tree masses visual quality could be greatly enhanced. Also, the addition of a curb and gutter system along Scottsville Road would not only add definition to the road, but would also act to collect polluted runoff, keeping it from entering the groundwater. The addition of a raised brick median to replace the painted median that exists would also enhance the visual quality of Scottsville Road. With the implementation of these recommendations, Scottsville Road could become an inviting entrance into Bowling Green.

The before and after drawings represent visions of what the Scottsville Road corridor could look like in the future if the recommendations above were followed and ordinances set up to improve the visual quality of Bowling Green.



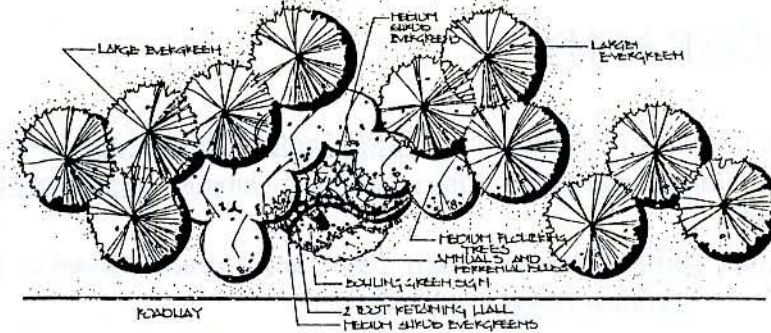
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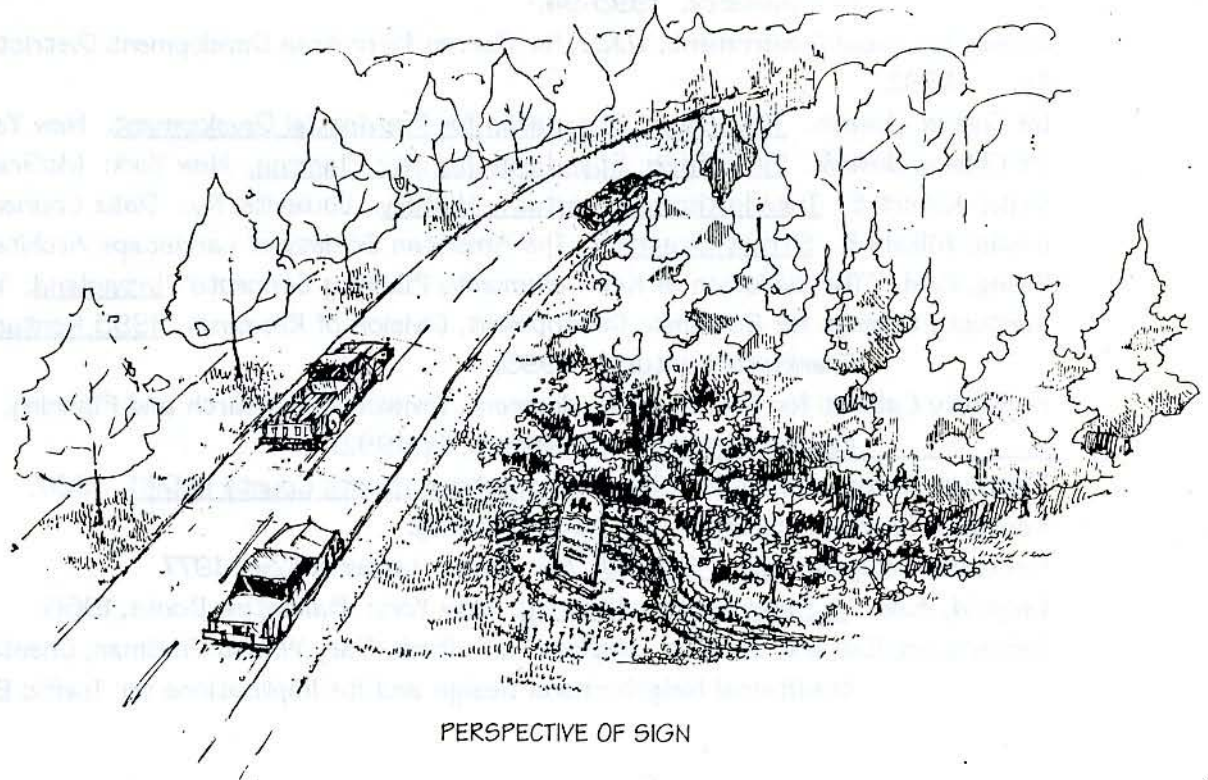
AFTER

VISUAL QUALITY OF ENTRANCE SIGNS

One of the important aspects of visual quality is the appearance of directional signage and the accompanying landscaped setting. The sign system adopted by Warren County and Bowling Green, which has recently been implemented, provides the example illustrated for this proposal. The entryways to the city and county are designated by these signs, and an incorporation of designed planting masses is desirable, where surrounding space is sufficient. These plantings will provide the setting for one of the primary indicators of entry and identity for the community. This mode of enhancement may be carried over in the design and placement of other signage throughout the area, especially those designating industrial parks, commercial plazas and other major features and elements along corridors.



PLANTING PLAN FOR ENTRY SIGNS



PERSPECTIVE OF SIGN

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