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PLANNING FOR MONROE COUNTY

INTRODUCTION

Monroe County (County) is located in southern Indiana, approximately 50 miles south of the state capital, Indianapolis, and 90 miles northwest of Louisville, Kentucky. Chicago, St. Louis, Cincinnati and Nashville are within 150 to 250 miles. The County is home to approximately 109,000 people. The City of Bloomington, with a 1990 population of 60,633, including approximately 30,000 students of Indiana University, is located in the center of the County. In addition to Indiana University, Monroe County is also one of the host counties for the Indiana dimension limestone industry and the major recreation areas of Monroe Reservoir, Lake Lemon, Hoosier National Forest, including the Charles Deam Wilderness Area, and Morgan-Monroe State Forest. Brown County State Park, Yellowwood State Forest and McCormick's Creek State Park are also nearby.

Monroe County is served by the regional highway network. Indiana State Routes (SR) 37, 45, 46, 48 and 446 connect Monroe County with other national and regional highways. Discussions and studies are underway to transform a section of SR 37 into an extension of Interstate 69 (I-69) from Indianapolis south to the center of Monroe County and then to Evansville, Indiana, improving the County's inter- and intra-state access. The construction of this highway is not certain; however, if it is built, then this Comprehensive Plan (Plan) should be reviewed and updated if necessary.

Monroe County is already one of the most rapidly growing counties in Indiana. This Plan was developed with the expectation that this trend will continue through the next decade. The prospect of continued growth has prompted the County to take steps to promote economic vitality and manage growth through comprehensive planning. The expressed desire to maintain the environment and the rural and residential character of the County and to protect the quality of life has prompted this initial County-wide planning effort. The Monroe County Council authorized the production of a comprehensive land use plan and new zoning ordinance. This document is the culmination of a plan that, when adopted and put into use, will help guide the development of Monroe County into the 21st century.

PURPOSE OF THE PLAN

When the subject of land use regulation is discussed, the issue of private property rights is raised. This usually occurs in the context of a property owner who wants to change to a more intensive land use and finds opposition from those who will be impacted by the change in use. In fact, the history of land use regulation has its origins in the protection of one property owner from a change in land use by a neighbor. The function of land use regulations is to protect existing land use and provide for the orderly change in land use to meet emerging public and private needs. The key to successful planning is to identify those emerging needs and provide for them. Both of these actions, identification and provision, are subject to a wide range of individual perceptions and interests. Public opinion surveys identify perceived needs but may lack a public sufficiently informed about the alternatives and costs for meeting those needs.

Some individual property owners may benefit greatly from planning decisions, either financially or aesthetically, while others may be disappointed when their desires for the use of their property do not match the concept of the common good as articulated in the Plan. For example, when does the growth of a home-based business begin to negatively impact others? Equitable planning must seek to level the effects on individuals. Past planning practices have not been able to accomplish this task. New approaches in land use regulation that provide a more equitable distribution of costs and benefits relative to changes in land use must be explored.

This Plan attempts to provide continuity and completeness in the presentation of principles and guidelines to manage changes in land use. Because comprehensive planning by its very nature is an activity of examining inter-related aspects of land use and public investment as they affect community life, it attempts to deal with issues that are both controversial and in need of policy direction. This Plan will set guidelines, establish criteria, map land uses, set service areas and guide public investment policy. It will open opportunities for many property owners and limit some for others. More importantly, the Plan sets forth acceptable concepts to regulate and manage the use of Monroe County's considerable resources for the benefit of all the citizens, present and future.

Perhaps the broadest scope of this Plan, however, is the impact it will have on individuals and businesses in Monroe County. It is expected that new development will contribute to achieving the Plan's objectives, but it is also recognized that the continuing decisions of individual property owners will determine the success of this Plan. Therefore, it is essential that this Plan directly address private property and private use concerns as it attempts to manage the larger context of Monroe County. It is also recognized that there may be conflicting interests between the residents regarding land use and that everyone must have an opportunity to achieve personal development goals.

This Plan is a policy document to guide the near-term and long-term growth and development of Monroe County. It directs the location, function and form of physical growth and provides guidance as to the investment in and maintenance of public facilities and services. As a general guide, this Plan attempts to be specific enough to give direction to the County's immediate growth needs, yet broad enough to address the variety of issues which may arise in the future.

This Plan is also intended to serve as a guide for community policy for a wide range of interests. While the most developed focus of the Plan is land use management as determined by the Plan Commission and Board of County Commissioners, the effects of this Plan are expected to be far more expansive. Other governmental entities are expected to consider this Plan in the execution of their own land management policies. Private

individuals and companies are expected to consult this Plan when considering investment and development opportunities.

As a tool for the County, this Plan should serve as a guide for making decisions regarding physical development, public investment and maintenance of County facilities. For example, the Plan should be used as a basis for:

- The development or revision of land use regulations for the review and approval of private development proposals.
- The location, design and implementation of drainage, sewer, water and other major public infrastructure improvements.
- The detailed planning of small communities, commercial centers and employment areas.
- The location and provision of housing in a variety of settings, prices and styles to serve all residents.
- The advancement of the County's economy and protection of land areas essential to that economy.
- The acquisition and protection of major open space, recreation areas, natural areas, parks and environmentally sensitive areas.
- The acquisition and development of sites for major public facilities such as schools, fire stations, public safety and waste management.
- The identification and scheduling of transportation and trail investments and improvements.
- The protection of environmental resources such as air, water, soil, scenic beauty, forests, wetlands and wildlife.
- The improvement of the quality of life through applications of appropriate urban and rural design principles.
- The provision of solid waste and waste disposal facilities.
- The safety of the public and protection of property from flooding.
- The effective management of scarce financial resources which constrain the County's capacity to meet community needs.

JURISDICTIONS IN MONROE COUNTY

Within the boundary of Monroe County are one second class city, two local towns, several unincorporated communities of historical importance and numerous public and semi-public organizations with planning jurisdictions for a wide range of services. Because of the relative independence of these numerous entities, it is crucial for this Plan to recognize, complement and, where possible, coordinate these various planning efforts. Monroe County, with its geographic overview, is the logical unit of local government for comprehensive management. The long-term plans and efforts of those subordinate Monroe County governmental units are incorporated into this Plan by reference. This Plan serves to focus these subordinate documents into a unified effort of County government.

City of Bloomington

The City of Bloomington, with more than half of the County population within its planning jurisdiction, is the dominant land use planning organization in the County. Indiana University is the dominant employer and most intensive user of land in the County. In 1991, Bloomington adopted a Growth Policies Plan to serve as the basis for future comprehensive planning activities in its jurisdiction, which includes the corporate city limits and a delineated urbanizing area contiguous to the city commonly known as the Two-Mile Fringe (Fringe).

The ultimate success of the Growth Policies Plan is, in many ways, dependent upon a complementary use of its seven planning principles (Compact Urban Form, Nurture Environmental Integrity, Leverage Public Capital, Mitigate Traffic, Serve Diversity, Conserve Community Character and Strengthen, Enhance or Improve Economic and Cultural Vitality) by Monroe County. The County must recognize the tremendous impact that city planning and implementation will have upon the success of its own comprehensive planning efforts. These two policy plans do not need to be identical, but should be coordinated at the common boundaries in order to smooth the transition from County to corporate jurisdiction through annexation. They address different concerns and constituencies, but should not compete for land use initiatives or diverge from a consistent application of sound planning principles.

Two Mile Fringe (Fringe)

The urbanizing Fringe area, where responsibility for providing public facilities and services is shared by Bloomington and Monroe County, presents a significant challenge to both local governments. Because Bloomington lacks a comprehensive annexation policy for city expansion, the County must plan to provide an increasing level of public facilities and services here. With its more constrained financial resources, the County often can make those commitments only by restricting investments in areas more distant from Bloomington. Currently, joint planning between Bloomington and Monroe County regarding growth and the provision of services within the urbanizing area is essential. However, it is the County's intention to regain planning, zoning and building jurisdiction and authority over this area upon the adoption of this Plan and a revised County zoning ordinance. At that time, the Fringe will no longer exist, and the County jurisdictional area will abut the Bloomington corporate limit.

Town of Ellettsville

Ellettsville, in northwestern Monroe County, is another developing area. Most of the County's non-Bloomington population growth is focused in this area. It is important to manage this growth in order to adequately provide for the future needs of the Ellettsville community.

Ellettsville has zoning regulations in place but lacks a current comprehensive land use plan. Ellettsville officials have begun the process to update "A Town Plan, Ellettsville, Indiana" that was produced in 1965. Recently, Ellettsville attempted to annex developed areas near SR 46 in the direction of Bloomington. If Ellettsville expands its corporate limits to areas served by its public utilities, then much of the development now regulated by Monroe County will become part of its jurisdiction.

Town of Stinesville

Stinesville, a small town in extreme northwestern Monroe County, offers an opportunity for increased utilization of existing public facilities in a largely rural setting. Support for this community seems essential if it is to serve as more than an isolated residential area.

ACCOMMODATING A GROWING POPULATION

Monroe County is one of the fastest growing counties in Indiana. From 1980 to 1990, the County experienced a 10.3-percent gain in population, adding over 10,000 residents. Since 1989, when the U.S. Census count was actually taken, the County has continued its steady growth.

Demographic studies indicate that growth will continue, but at a slower rate. A forecast prepared for this Plan suggests that Monroe County's population will grow by approximately 9,900 by 2000 and by about 8,000 more by 2010. The growth this Plan must accommodate implies the necessity for at least 7,750 new dwelling units by 2010.

PLAN RECOMMENDATIONS

PLAN GOALS AND OBJECTIVES

OVERVIEW

Goal setting allows communities to achieve and maintain a clarity of purpose. The planning goals and objectives presented below provide the framework for this Plan and are the basis for land use recommendations. As the foundation for map recommendations, the goals and objectives assist in updating land use and public service area maps as conditions change. Decision-makers can review this comprehensive set of guidelines when it is necessary to refine the map recommendations of this Plan.

Goals are general statements of the County's intentions for the future that it hopes to obtain through the planning process. Goals represent ideal conditions or outcomes to be sought. Objectives are more specific statements that act as tangible representation of the goals. Objectives are the rules and guidelines for achieving particular goals. While goals are characterized by a qualitative aspect which can be impossible to measure, objectives are more quantitative in nature and subject to demonstrable assessment.

The following goals and objectives were developed through the collaborative efforts of the Monroe County Plan Commission, other officials and many concerned County residents.

OVERALL VISION

Goals

Economic Development

- Combine and optimize the four objectives of providing for economic opportunity, maximizing the use of existing infrastructure, protecting the environment and providing a range of housing choices.
- Support employment choices with the potential for increasing the per capita income of Monroe County residents.

Residential Development

- Maintain a range of residential lifestyle options by encouraging development in areas where public capital expenditures, service costs and environmental constraints are minimal.

Public Facilities, Transportation and Services

- Assure the provision of adequate infrastructure (water, sewer, streets) and services (police, fire, parks, sanitation, schools) to protect and promote the health, safety and welfare of County residents.

Environmental Conservation

- Maintain the beauty and integrity of the natural environment.

Inter-governmental Cooperation

- Provide the residents of Monroe County with a comprehensive approach to the management of growth and development that integrates the efforts of local, state and federal governments. Streamline the development review and approval process to ensure that the procedure is as user-friendly as possible.

ECONOMIC DEVELOPMENT

Goal

Support employment choices with the potential for increasing the per capita income of Monroe County residents by identifying suitable locations for future employment growth and enterprise development, by expanding and diversifying the employment and enterprise base and by assuring each resident an opportunity to acquire the skills and knowledge necessary to succeed in the work place.

Objectives

1. Work with local economic development organizations in order to create land use policies which promote economic development. For example:
 - Assist in the development of programs for retaining and expanding area industry and attracting quality manufacturing, office and research and development activity in order to improve the economic well being and quality of life for the citizens of Monroe County.
 - Identify long-term industrial and employment space needs and provide a land inventory sufficient to maintain a 20-year supply.
 - Identify large undeveloped sites which could accommodate a large corporate expansion or relocation and provide for their future availability. Ensuring the availability of "development-ready" land, either in a leadership or supporting role, could also serve to alleviate instances of under-employment in the County.
 - Identify the qualities of Monroe County which major employers find attractive and promote those qualities for economic growth.
 - Assist Indiana Vocational and Technical College in exploring alternative development options for a new training facility and seek a commitment to develop the facility as soon as practicable.
2. Identify appropriate sites for the development of regional and national professional services located in Monroe County.
3. Expand the local range of tourist and visitor attractions and facilities and encourage the development of tourism based on the County's natural and cultural resources in an attempt to increase tourist and visitor expenditures locally.
4. Establish criteria for compatible industrial and commercial development; encourage the concentration of commercial development in centers rather than on individual parcels in an effort to eliminate the further spread of strip commercial corridors.

RESIDENTIAL DEVELOPMENT

Goal

Maintain a range of residential lifestyle options.

Objectives

1. Maintain the County's rural atmosphere.
2. Protect important environmental and economic resources from residential encroachment.
3. Encourage development in areas where public capital expenditures, service costs and environmental constraints are minimal.
4. Encourage the provision of a variety of housing types in the County's planning jurisdiction.
5. Establish land use criteria that will minimize conflicts between residential lifestyle options and land-intensive employment opportunities.
6. Identify areas with the least environmental constraints and most favorable infrastructure capability as growth centers over the next 20 years.
7. Improve roadways and other access, promote public/social services and compatible commercial development and work with local utilities to establish and increase services for designated growth centers.
8. Establish the availability of adequate transportation, utility, recreation and public services infrastructure as criteria for all changes in land use.
9. Utilize existing infrastructure more efficiently by encouraging subdivisions to locate in identified growth centers.
10. Support programs to improve the affordability and availability of lower cost housing.
11. Encourage open space and natural area provisions within subdivisions.
12. Explore the potential for the development of housing for specialized needs, such as for victims of domestic violence or unrest, differently-abled individuals and retirees, and make provisions for this in a future revision of the Plan and in the new zoning ordinance.

PUBLIC FACILITIES, TRANSPORTATION AND SERVICES

Goal

Assure the provision of adequate infrastructure and services to protect and promote the health, safety and welfare of County residents.

Objectives

1. Leverage existing capacity to focus new development.
2. Expand capacity in areas with the least environmental constraints.
3. Encourage the use of more efficient facilities and services.
4. Seek more equitable ways to distribute infrastructure costs between private developers and the public sector.
5. Direct new development toward areas where provisions exist for roadways to have sufficient capacity for the expected increase in use, and use the level of service classifications for assessing the capacity impact of new development.
6. Reduce roadway hazards by minimizing the number of new traffic conflict points and by correcting existing substandard conditions on roadways as development occurs.
7. Encourage the inclusion of mass transit and alternative modes of transportation in public and private development plans including access to organized park and recreational activities.
8. Manage development around existing and potential highway intersections in order to provide adequate rights-of-way for future highway improvements.
9. Encourage the extension of sanitary sewer service to areas identified as growth centers for future development as those areas develop.
10. Identify the special requirements of solid waste disposal which impact land use, and establish additional areas suitable for solid waste recycling and disposal, if necessary.
11. Establish standards for community services in order to assess the adequacy of new public and private development plans.
12. The County shall promote nonmotorized transportation through the development of a bicycle trailways plan and related design standards.

ENVIRONMENTAL CONSERVATION

Goal

Maintain the beauty and integrity of the natural environment.

Objectives

1. Avoid the pollution of air, land and water.
2. Limit the potential for damage by erosion, siltation and flooding through regulation.
3. Preserve the habitat for native species of flora and fauna.
4. Control visual clutter by adopting reasonable regulations to control, for example, signage and junk yards.
5. Establish comprehensive standards for land use and development which minimize disruption to the natural environment, and encourage creative solutions to manage environmental problems in site development.
6. Protect karst, steep slopes, floodplains, wetlands and reservoir watershed areas by establishing site specific development criteria for such areas.
7. Establish standards for providing open space and natural areas for new residential and commercial developments, especially for those that may otherwise reduce existing wildlife habitat, forests or agricultural lands.
8. Work with local, state, and federal agencies to identify and protect areas where endangered or threatened native species of plants and animals are found or may be re-introduced.
9. Reduce the accumulation of sediment in streams, rivers, reservoirs and drainage ways by establishing soil conservation standards for development and other land-disturbing activities.
10. Establish landscaping, tree preservation and site design criteria for development plans that reinforce the aesthetic qualities of a natural setting.
11. Establish drainage standards for new development that will effectively maintain pre-development run-off rates after development occurs.
12. Conserve the forests, geologic features, waters and wildlife of Monroe County that contribute to its natural beauty and tourism economy.
13. Minimize adverse air quality impacts associated with commercial, industrial and transportation activities.

INTER-GOVERNMENTAL COOPERATION

Goal

Provide residents of Monroe County with a comprehensive approach to the management of growth and development which integrates the efforts of local, state and federal governments to resolve conflicting approaches, include all necessary considerations, eliminate duplication and equitably distribute costs.

Objectives

1. Establish planning and zoning areas around Bloomington, Ellettsville and Stinesville which recognize both the need for urban expansion and the fragmented responsibility for providing public facilities and services.
2. Establish by specific intergovernmental agreement a periodic review between Monroe County, Bloomington, Ellettsville and Stinesville of the desirable growth and development pattern for Monroe County over successive five year intervals.
3. Establish cooperative building inspection and code enforcement operations between local jurisdictions.
4. Coordinate the long-range planning efforts of all Monroe County governmental entities.
5. Encourage long-range plans for all Monroe County governmental entities which manage or influence the management of significant land uses.
6. Seek a cooperative and environmentally responsible management plan for the Monroe Reservoir watershed which recognizes the interests, public health and other needs of local, state and federal constituents.
7. Coordinate new highway proposals and future airport expansion projects with Bloomington, Ellettsville and the State of Indiana.

PLAN STRATEGIES AND POLICIES

The Plan is grounded in the local planning goals and objectives as set forth above. To realize these statements, the Plan is built upon four major strategies which determine many of the land use choices of the Plan:

- Residential Choices
- Environmental Protection
- Focused Development
- Planned Infrastructure Improvements

They are not independent, but rather work together to build a framework in which most of the concerns identified by County residents can be equitably managed.

FOUR BASIC PLANNING STRATEGIES

Residential Choices

The Plan designates areas of differing characteristics to accommodate a wide variety of lifestyles and economic needs. These areas are: Agriculture, Natural Resource Residential, Conservation Residential, Estate Residential, Rural Residential and Suburban Residential, with the latter recommended for designated Rural Communities. Rural Communities are established residential areas in the County that are designated as growth areas because they now are, or may be during the life of this Plan, served by utilities. Rural Communities will be logical centers for schools, governmental services, churches, small-scale businesses and convenience commercial services.

Environmental Protection

Monroe County has special environmental conditions and resources. These irreplaceable resources, which sustain the health, welfare and quality of life of Monroe County residents, can be protected while allowing for the land necessary to accommodate projected population and economic growth. Therefore, these resources should be protected. Property owners can utilize these areas in a manner consistent with the land's features and inherent capabilities. The extent of any limitation in use for the purpose of environmental protection should not disturb the expected growth of the County's economy, but may enhance it. Areas of differing environmental characteristics regarding the ability to support land use development are shown on Figure 1, Environmental Conditions Map (page 21).

Focused Development Patterns

The central land use concept in this Plan is the focus of non-rural uses into three areas: Rural Communities, Employment development areas and Suburban Residential areas within the Bloomington urbanizing area. The Suburban Residential areas are, in reality, logical extensions of growth patterns within Bloomington and the developing area between Bloomington and Ellettsville. These areas should be closely coordinated with

the land use plans and development standards in Bloomington's Growth Policies Plan and planning efforts by Ellettsville.

Rural Communities and Employment areas are expected to meet the goals of channeling residential growth outside of the Bloomington urbanizing area to existing small communities and employment uses to areas best suited to support those uses. Rural Communities should strive to meet expectations for reasonable levels of service such as neighborhood schools, police and fire protection and ambulance service at efficient cost. Public waste water treatment facilities, necessary for the protection of public health and the environment, can also be provided more cost effectively and will discourage growth from occurring in a scattered or environmentally destructive manner. Directing development to Rural Communities will conserve land resources in other areas of the County suitable for development during this and subsequent planning horizons. Rural Communities should be able to meet most of the demand for development over the next 20 years. Land is a finite resource in Monroe County, and much of the land that is suitable and serviceable for residential development is also needed for economic development, mining and agricultural purposes or has special environmental considerations such as karst features. Programs, projects, recommendations and ordinances approved by the Plan Commission and/or by the County shall reflect a concern for personal security.

With respect to those areas of the County that are presently (December 1995) outside the corporate limit of the City of Bloomington, Indiana, but that have been included within the City of Bloomington's planning and zoning jurisdiction since 1967 (two-mile fringe), this Plan incorporates the land use maps and the relevant provisions of the Growth Policies Plan as adopted by the City of Bloomington on May 15, 1991, through Common Council Resolution 91-15.

The Monroe County Zoning and/or Planning maps shall be amended to show an "urban services boundary." The boundary shall be based on the existing (December 1995) water and sewer service boundaries and on the existing (December 1995) plans of the service providers to extend the water and sewer boundaries. The Monroe County Zoning Ordinance shall be amended to restrict the use of cluster development as a density incentive outside of the urban service boundary. With respect to certain development requirements (e.g., sidewalks, street trees), the County ordinances may differentiate between developments located within and without the urban services boundary.

Planned Infrastructure Improvements

The three planning strategies presented above, Residential Choices, Environmental Protection and Focused Development Patterns, lead to the recommendation for a fourth strategy of planning infrastructure improvements by establishing "Urban Service Boundaries" (as depicted on Figure 2, page 33) in urbanizing areas adjacent to incorporated municipalities and in designated Rural Communities. Major waste disposal infrastructure improvements should be provided only within these areas. The priority of County highway improvements should be oriented toward those areas as should other infrastructure improvements. By following this strategic policy, Monroe County can manage growth and it, and other service-providing agencies, can plan for the efficient extension of facilities and services. Public and private economic development activities related to land use can be better-served through this cost-effective approach. Road improvements should be focused in these areas to achieve maximum benefit to County residents. Fire stations, recycling drop-off centers and child and adult care facilities, as well as other public services and facilities, can also be located where they most effectively meet the needs of those who rely on them.

Essential to realizing this strategic policy is the careful management of improvements to roads and to the sanitary sewer interceptor systems (or the establishment of package sewer treatment plants). In almost every case, future public operating expenses are directly proportional to public capital investment, including acquisition through dedication. These proposed infrastructure system improvements should be included in other official County planning documents. Improvements not indicated by this Plan should be excluded from other official County plans unless or until this Plan is formally amended to accommodate such improvements. The amendment process should include coordination with Bloomington's Growth Policies Plan.

The zoning ordinance shall be amended to include a procedure for amending the Urban Services Boundary Map or maps which shall comply with the statutory procedures for amending comprehensive plans and/or zoning ordinances. As an outline for amending the zoning ordinance, the following points are recommended for consideration as criteria in determining whether the Plan Commission will issue a "Findings of Appropriateness for Sewer Service Extension," as required by the Rules, Regulations, and Standards of Service for City of Bloomington Utilities:

- the Plan's recommended land use and development policy for the area;
- the Plan's recommended policy with respect to the provision of sanitary sewer service to the area and the relation of sewer service to the Plan's land use and development policy;
- the potential effect of the proposed sewer service or acceptance of flow on development patterns and the consistency of this potential effect with the Plan's land use and development policy;
- conformance of the proposed development with existing zoning;
- whether decisions and approvals regarding zoning and development have superseded the Plan; and,
- whether the proposed sewer service extension serves existing development as opposed to facilitating or enabling new development.

(Figure 1, Environmental Conditions Map here)

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LAND USE POLICIES

This section presents policy statements for each land use category. The Recommended Land Use Map, (Plan Map) Figure 2, is on page 33. Each land use category has different characteristics and considerations that must be brought into focus in order to provide for effective and reasonable Plan implementation through public investment, zoning and other regulations.

Public Open Space

Public open space areas are comprised of public parks, forest preserves, natural areas, greenway paths and existing major public opens spaces and recreational areas in Monroe County, such as Morgan-Monroe State Forest and the Hoosier National Forest, including Charles C. Deam Wilderness and Hardin Ridge Recreation Area, as well as McCormick's Creek State Park in Owen County and Brown County State Park and Yellowwood State Forest in Brown County. These public open spaces receive heavy recreational usage during all seasons of the year. Hunting, hiking, fishing, camping and picnicking opportunities draw thousands of visitors to the County who contribute to the local economy.

The Sycamore Land Trust, a nonprofit organization and member of the National Land Trust Alliance, seeks to preserve the landscape, protect scenic beauty, provide habitat for wildlife and offer natural places for the aesthetic enjoyment of current and future generations. The Trust's current holdings in Monroe County total approximately 80 acres, with the potential for possible near-future acquisitions to more than double this number.

These public open space areas will continue to play an important role in serving the County's residents and the tourism economy. The Plan identifies about 37,700 acres of public open space, and recommends consolidating public lands, with some of the residential uses that are in the middle of the State or national forest preserves being traded for some isolated public property outside of the main forest preserves. Any private property within the open space designation will be classified as Natural Resource Residential.

The Plan incorporates, by reference, the recommendations of the *1992 - 1996 Comprehensive Plan For Recreation, Parks, and Greenspace* that was produced by the Monroe County Parks and Recreation Department.

Environmental Conservation

Floodplains, riparian areas, steep slopes, karst, wetlands and critical water supply watersheds are environmentally sensitive areas and carry inherent development constraints if they are to continue to function in their essential roles as part of the natural environment. Environmental protection overlay districts should be established for these areas. The Plan adopts the value that these special environments should be reserved and remain undeveloped and undisturbed, with the exception of non-invasive recreational uses. The Plan recognizes that all economic and recreational needs of County residents and property owners can be adequately accommodated on other accessible lands not impacted by such environmental features. Where public improvements are considered, the development of these improvements should be handled with great care and public scrutiny. The Plan supports conservation of these environmental resources through public reservation, regulation and, where necessary, acquisition.

Floodplain

The floodplain is a recognized, sensitive area that is regulated at the local, State and federal levels. It is recommended that the County seek conservation easements, donations or exactions of undevelopable floodplain land and critical natural wetlands. Undisturbed natural riparian borders should be required along streams.

Karst

The peculiarities of karst create less than desirable development circumstances. In karst areas, as identified in *Geology for Environmental Planning in Monroe County, Indiana, Special Report 47*, individual sites must be analyzed for karst sensitivity before development takes place. Areas that exhibit sensitive karst features should be required to be developed under special regulations.

The County shall amend the Monroe County Zoning Ordinance to include specific regulations concerning land uses within karst areas. Initially, the regulations shall be modeled after the existing (December 1995) City of Bloomington Zoning Ordinance regulations concerning karst-area land use activities and shall reflect the research and suggestion of the Plan Commission staff.

Steep Slopes

Development should be restricted on slopes for which adequate soil and water management practices are not possible. Plans for development on all sloped sites should include adequate provisions for on-site retention of soils and detention of stormwater. Site-specific drainage and erosion control provisions shall be added to the Monroe County Zoning Ordinance, including the following requirements: (1) the submission of a topographic site plan that highlights areas of greater than eighteen percent (18%) slope; and, (2) the submission of a brief statement outlining construction practices which shall mitigate against the effects of building on steep slopes, including design of slope stabilization measures and specifications for the establishment of vegetative cover.

Critical Water Supply Watershed

Monroe Reservoir is the fourth water source for Monroe County and Bloomington. The County should retain the Lake Monroe Watershed Overlay Zone as a part of a revised zoning ordinance. The underlying land use designation should be a combination of Natural Resource Residential, Public Open Space and Conservation Residential. Special regulations apply to this overlay area to manage the sources of erosion and other contamination of the water supply and to preserve the unspoiled, natural characteristics of this important tourist attraction. The Overlay Zone, along with an erosion control ordinance, increased efforts to provide improved agricultural land practices in the watershed and cooperative policy management with state and federal agencies, will assure a reliable and efficient water supply for the foreseeable future.

The zoning maps shall be amended to include an environmental constraints land use overlay zone that covers the Monroe Reservoir and Lake Griffy watershed areas. The zoning ordinance shall be amended to establish erosion control standards for the overlay zone that are designed to, at a minimum, limit the post-development levels of erosion at the pre-development levels. These regulations, taken as a whole, shall be at least as

protective of the scenic quality, the natural resources and the water quality of the Monroe Reservoir watershed as existing regulations.

Soil and Water Management

To minimize the effects of damaging and costly soil erosion and excessive, increased storm water runoff, Monroe County is developing a more comprehensive erosion control ordinance which will provide for the effective retention of soils on development sites and the collection and conveyance of rain water into streams, rivers and reservoirs. This ordinance should be adopted along with the revised zoning ordinance. The County shall promote best management practices in agriculture, forestry and construction.

Site-specific drainage and erosion control provisions shall be added to the Monroe County Zoning Ordinance, including the following requirements: (1) the submission of a topographic site plan that highlights areas of greater than eighteen percent (18%) slope; and, (2) the submission of a brief statement outlining construction practices which shall mitigate against the effects of building on steep slopes, including design of slope stabilization measures and specifications for the establishment of vegetative cover.

Employment

As shown on the Plan Map (Figure 2, page 33), approximately 11,300 acres of land are designated for employment uses, generally along SR 37 in Perry Township, in the northeast corner of Van Buren Township and in southeast Richland Township, west of SR 37. The employment areas shown on the Plan map are on large parcels of relatively flat land with few environmental constraints which will have superior access upon implementation of the recommendations in the Monroe County Thoroughfare Plan. These areas are served by roadways with high traffic-carrying capacity matched by visual exposure from the highway. They are particularly good locations for employment uses which require immediate, high-volume transportation access, visibility, large, flat sites and utilities. These areas should provide internal circulation roads as part of their site layout.

Industrial Manufacturers and Wholesale Businesses

This category is intended for economic uses that result in increased jobs and tax base to the County, including industries, offices, trucking and distribution/warehouses that are not generally compatible with residential uses typically found in suburban and urban areas. Five criteria guide the location of large tract industrial uses: transportation access, sanitary sewer, water supply, lack of incompatible existing land use and topography.

An area of approximately 1,000 acres around Dillman Road and SR 37 is recommended as an excellent location for employment uses. Prime roadway access in this area provides great connections to business centers throughout and beyond the region. The construction of I-69 proximate to this location would enhance it for large-tract industrial uses. Other opportunities for employment-related uses, such as light industrial operations, small-scale shops, home occupations and cottage industries, may be appropriate outside these areas as well. Perhaps such uses should be considered to be eligible as accessory uses in primary residential land use areas. Rural Communities should have areas designated for small-scale shops and light industrial uses that are compatible with residential areas.

Tourism

With attractions such as Indiana University, with its athletic and cultural events, and the natural beauty of rural areas, Monroe County has a tourism industry that provides a significant economic benefit. However, the tourism industry has room for expansion. The new Limestone Country Trail and other proposed trail programs should be supported. The reclaiming of an abandoned quarry as a public park would also expand tourism opportunities. While the Plan recognizes that some carefully controlled expansion of tourism is possible and desirable, it also recognizes that Monroe Reservoir and Lake Lemon can become overdeveloped and overused, causing a decline in the recreational quality. When tourism-related development occurs, the natural beauty of the area should be maintained or enhanced through proper design, landscaping and buffering. Local, State and federal agencies should work together to promote the responsible development of additional recreational alternatives in this area, taking into consideration the developments' impacts on the surroundings and existing tourism resources.

Mineral Resources

A number of limestone deposits and quarry sites exist in Monroe County. Quarries containing "dimension" (architectural) limestone are a natural resource of national significance. As an important industrial use in the County, quarries are protected from encroachment by other types of development under this Plan. A dimension limestone quarry should not be rendered functionally obsolete because of operational impacts upon adjacent land use activities which were developed with advance knowledge or understanding that active quarrying may occur. Economically viable dimension limestone deposits should be preserved for quarrying activities. Aggregate quarries, while not scarce resources, are also important economic resources in the County. Such quarries should also be protected from encroachment by incompatible land uses that may be sensitive to the blasting, dust and heavy trucking operations. Areas around quarries where active blasting is occurring or may occur should be reserved for one of the following use categories: agriculture, industrial, public open space or natural resources residential.

Mineral resource uses include all uses associated with the operation of quarries, such as the extraction, storage, processing and transportation of the quarry product. It should be expressly understood that currently inactive dimension or other limestone quarries may eventually reactivate and are protected under this Plan in the same manner as active quarries. The areas identified comprise about 7,000 acres of open quarry sites and un-mined deposits.

Agriculture

Protecting the opportunity to farm has been identified as an important land use policy of this Plan. Much of the rural character of Monroe County is derived from agricultural activities. Areas in the northwestern and southwestern portions of the County are designated as priority agricultural use areas as shown on the Plan Map (Figure 2, page 33). These areas are fairly large expanses of relatively flat land and are presently very sparsely developed. In these areas, agricultural uses shall be given priority over residential uses. Residential uses in agricultural priority zones should have a minimum lot size of 5 acres. Most farmsteads meet this requirement, and non-farm residences would be non-intrusive at this density. Clustering may be workable under strict guidelines that assure agricultural priority, even for high-impact agricultural operations. In

locations where residential development occurs with clustered units, the open space created by the density requirements could be made available for crops and grazing.

The proposed agricultural category designated in the Plan totals about 17,500 acres. In addition, farming on a small scale should be encouraged to continue in other areas of the County. However, in these other areas, agriculture uses should not be given preferential treatment over residential uses, but, rather, low intensity agriculture uses should be treated as a permitted uses in low-density residential zones. These areas should be identified by the use of an Agricultural Overlay provision to be added to the County zoning ordinance and mapped by recommendation of the Plan Commission upon application by individual property owners when the combining of residential uses and the proposed agricultural uses is considered to be compatible.

Residential

Five residential categories are identified in the Plan. They are: Natural Resources Residential, Conservation Residential, Estate Residential, Rural Residential and Suburban Residential. In addition, the Plan calls for Rural Communities which will absorb the most residential growth in the 20-year planning period at Suburban Residential densities.

Table 1, Recommended Residential Densities (page 29) and the following principles should guide residential development in Monroe County:

- Encourage a diversity of housing types and prices in order to provide choices for families and individuals of varying incomes and age groups. When reviewing new development proposals, the County will evaluate the composition of its existing housing inventory and may, from time to time, target goals for new development in order to maintain a balanced housing stock.
- Encourage development to occur in areas with the least environmental constraints and most favorable infrastructure capability.
- Encourage development with adequate recreational space to meet the needs of the residents.
- Link subdivisions within Rural Communities with collector streets and greenway paths.
- Encourage innovative concepts in housing designs and architecture that demonstrate quality and character and are aesthetically pleasing. Substandard and uninhabitable housing shall be prevented.
- Encourage the design of residential areas that have a minimum of intrusion and interference from non-residential land uses and traffic. Appropriate screening, buffering and landscaping will be provided between residential neighborhoods of varying density and between residential and non-residential development.
- Strive to preserve the rural character and minimize the visual impact of large-scale development. Wherever possible, the maximum amount of natural vegetation on each site should be preserved.
- Encourage the concept and practice of developing a design that fits the site rather than manipulating a site to fit the design in order to minimize the amount of necessary land disturbance. Development should be restricted on slopes for which adequate soil and water management practices are not possible.

- Protect water quality through the use of acceptable erosion control and soil conservation techniques. An erosion and drainage control plan should be provided by petitioners for all development, especially in watershed areas. The plan should include measures to minimize erosion during and after construction and methods to stabilize disturbed areas.
- Require driveway design that will accommodate emergency vehicles. Limit the number of curb cuts onto public roads to improve public safety and traffic flow. Encourage joint driveways with adjoining properties.
- All driveways should avoid crossing agricultural land to reach non-farm residential development lots. Flag lots or other long driveways should be discouraged.
- The general location of residential development should remain consistent with the Plan and be concentrated in the Rural Communities.

Table 1

Recommended Residential Densities

Land Use Category	Density (* with Cluster)	Minimum Lot Size Without Clustering	Maximum Slope (%) Permitted
Natural Resource	.10	10.0	
Agriculture	.20	5.0	
Conservation			
Area 1	.20*	5.0	12
Area 2	.40*	2.5	15
Area 3, Option 1	.40*	2.5	
Area 3, Option 2 (with public sewers)	3.0 - 5.0*	.3 - .2	
Estate	1.0	1.0	
Rural	.25*	4.0	
Suburban Single Family with public sewers	To be determined in individual, detailed Rural Community Plans. Densities might range up to 5 units per acre.		
Suburban Multifamily with public sewers	To be determined in individual, detailed Rural Community Plans. Densities might range up to 15 units per acre.		

NOTE: Clustering is a flexible design alternative that concentrates buildings on the least constrained parts of a site in order for the remaining land to be used for recreational or open space purposes or for the preservation of environmentally sensitive features.

The five residential categories and the Rural Communities concept are described below.

Natural Resource Residential

This category offers a very low density for approximately 4,300 acres of land located primarily on the east side of Benton South Township at the Monroe County/Brown County line. It also includes private inholdings within the Public Open Space category. The low density is necessary in order to protect sensitive watershed areas that have limited accessibility. Minimum lot sizes are recommended to be 10 acres. It is not recommended that clustering be an option in this area.

Conservation Residential

This category recommends limitations on development within the environmentally sensitive watersheds of Monroe Reservoir, Lake Lemon and Lake Griffy. It is established to provide a residential option while protecting the lakes and the water supply resources of the County. There are approximately 9,000 acres of land in this category.

With the exception of The Pointe development on Monroe Reservoir, these sensitive areas generally do not have public water and sewer services. Access is limited by narrow, winding roadways. Development at higher densities would require a significant investment in roadways, water, sewer and other public services. Most of these areas are heavily forested and have rugged topography making development at higher densities difficult and potentially expensive and environmentally damaging.

In general, critical water supply watersheds and areas of steep topography are not encouraged for development. Where development occurs, it should be for large lot residential uses with a minimum lot size of five acres. In reviewing subdivision and site development proposals, the County Plan Commission should consider the following criteria:

- Public services or improvements are not recommended for these areas.
- Regulations should be adopted regarding erosion, drainage and vegetation management.

Estate Residential

This category includes areas that have some, but not full, public services and are generally along or near major County roads or state highways and on relatively flat land. This category is intended to have large lot in-fill residential development with a minimum lot size of one acre per dwelling unit. It is not recommended that clustering be an option in this area. Environmental conditions may further limit development densities. Most development will occur on individual septic systems. Two independent septic fields per dwelling unit must be identified. There are approximately 13,900 acres of land in this category.

For those areas where public sanitary sewer facilities are available, or are reasonably close, the developers of the property may petition the Plan Commission for densities higher than those recommended in this Plan. However, the planning commission is not obligated to grant higher densities, and the requests will be reviewed individually.

Rural Residential

This category includes remote areas, environmentally sensitive areas and areas adjacent to quarry operations where lower densities and a more rural character are most appropriate and desirable. Generally, these areas are characterized by active or potential mineral extraction operations within one-quarter mile, steep slopes, forest and/or agricultural land where roads and other public services are minimal or not available. This category includes approximately 66,700 acres of land that cover most of Indian Creek Township and portions of Van Buren, Richland, Bean Blossom, Washington and Benton Townships.

Rural Residential areas are recommended to have a very low density with a minimum lot size of four acres per dwelling unit. However, clustering may be an option in this category with the remaining open space resulting from the density requirement being set aside as permanent open space. The open space within the

development can serve a variety of uses including recreational opportunities for local residents, limited agricultural uses in the proposed Agricultural Overlay District or buffering of an adjoining use. Adequate land should be required to support two independent septic fields per dwelling. Subdivisions in excess of 10 dwelling units are not recommended in these areas because public services or improvements are very limited.

Suburban Residential

This is a generalized category for single family and multifamily residential development at suburban densities of greater than one dwelling unit per acre within Bloomington's urbanizing area and Rural Communities. Adjacent to Bloomington, the development densities should be coordinated with the policies of the City's Growth Policies Plan. There are approximately 5,300 acres of land in this category, excluding the Rural Communities. The recommended minimum lot sizes and densities are to be determined in individual, detailed Rural Community Plans to be developed after the adoption of this Plan.

Rural Communities

This category includes land for cluster development at traditional Midwestern village densities around existing small communities. These settlements are encouraged to have mixed residential, convenience commercial, light industrial and public/semi-public uses which are served by public water, gas and sanitary sewer systems. Elementary schools, as well as police, ambulance, fire protection, recycling facilities, parks and other public services and facilities should be located in the Rural Communities. In identifying Rural Communities, the following factors were considered: 1) the settlements were existing; 2) some infrastructure existed; and 3) some water and sewer service capacities existed. The Plan identifies several Rural Communities, the largest of which is around Ellettsville. Approximately 7,500 acres of land are in this category.

Concentrating development in Rural Communities will reduce residential sprawl in remote areas, maximize the utility of public capital expenditures, minimize maintenance service costs and protect farms and mineral and environmental resources from residential encroachment. Residential development should be a mix of single family and multifamily uses, with single family uses predominating. The densities for single family residential development are two to four dwelling units per acre. For multifamily residential, town homes and mobile home developments, densities may range up to eight units per acre. The mix of dwellings should be organized into a rational development pattern, rather than random lot-by-lot development. The Plan Commission should make it a top priority to undertake the preparation of a detailed plan for each Rural Community after adoption of this Plan.

Limited convenience commercial and restricted light industrial uses are encouraged at appropriate locations in Rural Communities. Commercial uses may include a grocery, drug store, and branch dry cleaning establishments as examples. Compatible small-scale industrial uses can also be located in these areas. Until detailed Rural Community plans are adopted, all proposed industrial uses in Rural Communities should be treated as special uses subject to Plan Commission review for locational and operational compatibility. While further definition should be provided in a zoning ordinance, such uses should generally be under 10,000 square feet of gross floor area, limited to light assembly operations, agricultural processing and small (under one acre) construction or material yards as examples. Public/semi-public uses such as schools, utility facilities and places of worship may also locate in Rural Communities. Commercial and public/semi-public

uses should locate near roadway intersections in the centers of these communities. Strip commercial development should be discouraged.

In order to maintain a wide range of residential lifestyle options, mobile home developments should be included as a form of single family dwelling to improve the availability of affordable housing in Monroe County. It is important to note that today's manufactured housing, including modular and mobile homes, does not necessarily carry the stigma of early mobile homes or "trailers". If planned and designed well, a modern mobile home development may be compatible with site-built housing.

The Plan recommends that a special Mobile Home Planned Unit Development (PUD) District be included in the County's new zoning ordinance. The zoning regulations and subdivision standards should encourage good design for all types of housing. Discretion should be used in selecting sites for mobile home developments. The sites should not be located in commercial and industrial areas, but may be more appropriately located in Rural Communities and Bloomington's urbanizing area. Mobile homes should be accepted for in-fill lots and should not be prohibited from locating in any residential district.

To protect the health and safety of the public and to assure quality construction and compatibility with existing uses, site design standards for mobile home developments should generally mirror the standards for site-built residential developments.

(Figure 2, Recommended Land Use Plan Map here)

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TRANSPORTATION POLICIES

Monroe County is now well-served by a regional highway network. Indiana State Roads 37, 45, 46, 48 and 446 connect Monroe County to other parts of the State and region, as well as to national and regional highway systems. The County highway system includes approximately 680 miles of roadways and a number of bridges. The Monroe County Highway Department continuously updates its road and bridge maintenance program and estimates of the costs of future roadway improvement projects. The recommendations of the *Monroe County Street and Road Management System, Thoroughfare Plan and Capital Improvement Program, December 1995*, as adopted by Ordinance 95-28 on December 8, 1995, are incorporated into this Plan by reference.

STATE ROAD 37 DEVELOPMENT POLICIES

Monroe County is now well-served by a regional highway network. Indiana State Road 37 connects Monroe County to other parts of the State and region, as well as to national and regional highway systems. Every day more than 10,000 workers commute into Monroe County and 3,000 County residents commute out using primarily SR 37. The Bloomington Economic Development Corporation (BEDC) SR 37 Corridor Study is an attempt to ensure that the community's most important infrastructure asset for economic development continues to support the local economy. The recommendations of the BEDC SR 37 Corridor Study, dated March 2000 (including the resolution endorsing the State Road 37 Corridor Plan by the Policy and Technical Advisory Committees of the Bloomington Area Transportation Study dated August 11, 2000, as set forth below), as adopted by Resolution 2001-09, on May 16, 2001, is incorporated into this Plan by reference:

BLOOMINGTON AREA TRANSPORTATION STUDY

RESOLUTION ENDORSING THE STATE ROAD 37 CORRIDOR PLAN, as discussed at the joint meeting of the Policy Committee and Technical Advisory Committee of the Bloomington Area Transportation Study on August 11, 2000.

WHEREAS, the Bloomington Area Transportation Study is the duly designated MPO for the Bloomington, Indiana urbanized area; and

WHEREAS, the MPO is responsible for ensuring that the Bloomington, Indiana urbanized areas transportation planning program is continuing, comprehensive, and coordinated between the MPO and other public and citizen organizations throughout the planning process, as outlined in the metropolitan planning rule jointly issued in the Federal Register by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) on October 28, 1993;

NOW, THEREFORE, BE IT RESOLVED: That the State Road 37 Corridor Plan, prepared by the Bloomington Economic Development Corporation, is hereby endorsed, subject to the following amendments: The Bloomington MPO acknowledges with gratitude the BEDC's commitment to corridor planning and it reserves its opinion on references to proposed Interstate 69 and its potential impacts or benefits as reflected on pages 20 through 25 of the report. The Bloomington MPO reserves its opinion on the location of an interchange at either Kinser Pike or Acuff Road pending the findings of a more detailed study by MPO staff. That the adopted document shall be forwarded to all relevant public officials and government agencies, and shall be available for public inspection during regular business hours at the City of Bloomington Planning Department, located in the Showers Center City Hall at 401 North Morton Street, Bloomington, Indiana.

PASSED AND ADOPTED by the Policy Committee by a vote of 7-0, upon this 11th day of August 2000.

PLAN REVIEW AND REVISION

The County, by using this Plan, will publicly demonstrate its goals, objectives and policies regarding land use. The Plan will also serve as a citizen education tool regarding the dynamic interplay of environmental protection, economic development, preservation and growth.

However, the Plan should remain flexible. It should be reviewed and updated on a regular basis. The Plan is not a zoning ordinance and it does not regulate the use of the land. Nor is it a rigid, unchanging plan that is the final answer to concerns of the future. The Plan, being based upon present knowledge, projections and widely held goals, cannot make decisions but should serve as a guide for decision making. Constant evaluation, sound policy-based decision-making regarding land use and the investment of public capital will be required if the Plan is to be an effective tool to achieve the County's multi-faceted objectives.

A wide range of actions by government, private organizations and individuals are going to be required to achieve the County planning policies. These actions must focus on both broad concepts which support attainment of the objectives and the very specific decisions which actually implement objectives. This section sets forth a policy framework that will support extensive standards and criteria that can guide the required actions over time. They include:

- a means to identify areas suitable and desirable for future development;
- areas of least environmental constraints and most favorable infrastructure capability;
- compatibility for suburban growth within existing residential and rural areas;
- criteria for compatible industrial and commercial development in each area of land use;
- criteria for land use changes with respect to the availability of adequate transportation infrastructure;
- criteria for land use changes with respect to the availability of adequate utility, public services and recreation infrastructure;
- criteria for mass transit and alternative transportation and access;
- criteria for promoting waste recycling and disposal;
- criteria to minimize conflicts between lifestyle options and land intensive economic or residential development;
- desirable levels of community services;
- landscaping criteria in development plans;
- minimal air quality impacts;

- open space and natural area provisions for developments which reduce wildlife habitat, forests and agricultural lands;

- roadway level-of-service criteria for assessing development impacts;
- site specific development criteria for karst, steep slopes, floodplains, wetlands and reservoir watersheds;
- standards for land use which emphasize minimal disruption to the natural environment;
- standards for new development drainage plans and soil conservation practices; and
- tree preservation and site arrangement criteria in development plans.

This Plan is truly a call for pervasive attention to the consequences of growth and development in Monroe County. The list subsumes all aspects of community development management which current ordinances and resolutions address and extends the range of consideration that can affect future development projects. Each standard or criterion identified above may well generate a significant number of more detailed measurements which can be applied to the review of individual proposals. The function of the Plan is neither to address or establish criteria nor enumerate each of the standards and criteria upon which site-specific decisions are made, but, rather, is to establish the policy and conceptual framework under which those standards and criteria can be established and applied. Specifically, the County's zoning, subdivision control and environmental management codes should be revised and extended to include these policies. Further, the County should prepare and keep current a County-wide capital improvements program that will assure the proper location of public investment within a priority system that will respond to all four of the County's major planning strategies: Residential Choices, Environmental Protection, Focused Development Patterns and Planned Infrastructure Improvements.

TECHNICAL BACKGROUND

DEMOGRAPHICS

HISTORICAL INFLUENCES

Monroe County is one of the more rapidly growing counties in Indiana. It is also becoming increasingly popular as a retirement area. In 1990, the U.S. Bureau of the Census identified a total population of 108,978 in Monroe County. This represents a 10.3-percent increase from the 1980 census. In the same time period, the population of Indiana increased only 0.98 percent. (See Table 2, page 42).

Table 2 also illustrates the basic data used to forecast population for 2000 and 2010. This population forecast is based upon population forecasts prepared by the Indiana Business Research Center, School of Business, Indiana University. Using a count of housing units estimated for Bloomington, a proportion of housing units are distributed to Monroe County, Bloomington and Bloomington's urbanizing area (the Fringe) for 1980 and 1990.

Most of the County population is concentrated in and around Bloomington and Ellettsville. Included in the Bloomington and County population counts are approximately 30,000 Indiana University students who reside here during the regular school year. The student population falls to about 13,000 during the summer months. Past growth has been directly related to growth from IU, accounting for up to 48 percent of the population growth and as much as 64 percent of the dwelling unit growth for the County over the past decade.

PROJECTIONS FOR THE FUTURE

Based upon various projections, the Monroe County population is expected to be 118,900 by 2000 and 126,900 by 2010. Eliminating the contribution of IU's growth over the projection period could reasonably reduce the population projections by 25 percent.

Regardless of what the actual IU contribution to local growth is likely to be in the future, the point must be made that slowing the pace of IU's growth from the growth rate which prevailed in the 1980-to-1990 period will have a dramatic impact upon the rate of future population growth in Monroe County. The only contingency is a large unforeseen economic impact either as a result of the location of a major business enterprise or as a result of sustained growth of many mid- and small-sized firms. Without the growth induced by Indiana University, some other growth inducing factor would have to be introduced in order for Monroe County to sustain the population growth experienced in the past.

Table 2
Population and Dwelling Unit Growth 1980-1990
Proportion Share Increase 1990-2010

	Monroe County	Monroe County Beyond Fringe	City of Bloomington and Fringe
<i>Population</i>			
1980	98,785	26,029	72,756 ¹
1990 ²	108,978	28,716	80,262 ³
<i>Forecast</i>			
2000 ⁴	118,900	31,329	87,571
2010	126,900	33,437	93,463
<i>Dwelling Units</i>			
1980	36,213	9,855	26,358
1990	41,948	11,416	30,532 ⁵
<i>Forecast</i>			
2000 ⁶	46,349	12,613	33,736
2010	49,697	13,523	36,174

¹ Estimated based upon 1978 Land Use Survey of housing count and 1980 census. See *Bloomington Area Transportation Study Survey; Summary Report; Long Range Transportation and Land Use Study*.

² Adjusted for 1990 census counts.

³ Bloomington and Fringe maintains 1980 proportionate share at 73.65 percent of Monroe County.

⁴ Population Projections Indiana Business Research Center, November 1993.

⁵ Maintains constant share at estimated 1980 level of 72.79 percent Monroe County.

⁶ Estimated using the expected population increase divided by the expected density rate, about 2.39, and add that amount to the 1990 dwelling unit count plus 250 replacement units in 10 years. The same methods was used to forecast dwelling units in the year 2010.

Given the present city limits, the share of the County-wide population residing in Bloomington will shrink relative to the balance of the County. The 1990 census indicates that 10 out of the County's 11 townships gained population from 1980 to 1990. Clear Creek, Perry and Salt Creek Townships experienced greater than 10-percent population growth. Polk Township had an 11-percent population loss in the last decade. State

demographers expect that most of the new population growth will occur in Perry, Richland and Van Buren Townships. However, these projections are based on a continuation of past settlement trends and not on local planning and zoning policy.

Population Characteristics

During the 1970-to-1990 period, population growth in Bloomington accounted for about 73 percent of the population growth in the County. Table 3 (page 44) assumes that 40 percent of population growth from 1990 to 2000 will occur in Bloomington and 30 percent will occur in the adjacent urbanizing area. From 2000 to 2010, the population growth will be focused in the unincorporated areas of the County, with only 10 percent of total growth being attributed to Bloomington (assuming that the corporate limit remains unchanged). Trends indicate that as much as 25 percent of the County's growth from 1990 to 2010 will be focused along the SR 46 corridor, northwest of Bloomington, in and around Ellettsville. Ellettsville is expected to remain as a growth center and is encouraged to plan now for its growth within the context of County plans.

In the 1990s, Monroe County's population, like that of the nation's, will continue to mature. Nearly 53 percent of the population was over 25 years old in 1990, up from 48.6 percent in 1980. The largest increase in any age group occurred in the 25-44-years-old age group, which increased its share of the total by 2.6 percent from 27.4 percent in 1980 to 30 percent in 1990. The 0-17-years-old age group experienced a drop in percent of population from 21 percent in 1980 to 18.4 percent in 1990. The County also experienced a 1.3-percent increase in the 65-years-and-older age group and a 1.4-percent decrease in the 18-24-years-old age group. This information is also presented in Table 4 (page 44).

These statistics are consistent with the fact that Monroe County has the lowest birth rate of any county in Indiana. The data also suggest that the average age of IU's student body is increasing and that the retirement age group may be increasing at a faster rate than the student population. It is evident that Monroe County has become an increasingly popular retirement location due to the combination of a reasonable cost of living, a vital cultural atmosphere and a striking environment.

Table 3
Allocation Of Future Population Growth - Monroe County

Monroe County		Population Change
1990	108,978	
2000	118,900	9,922
2010	126,900	8,000

Future Allocations(assuming boundaries remain unchanged)

	Current Fringe	City of Bloomington	Balance of Monroe County
1990-2000	30%	40%	30%
2000-2010	50%	10%	40%

Implied Population Growth

	Current Fringe	City of Bloomington	Balance of Monroe County
1990-2000	2,977	3,969	2,977
2000-2010	<u>4,000</u>	<u>800</u>	<u>3,200</u>
	6,977	4,769	6,177

Resulting Populations - Implied Forecast Populations

	Current Fringe	City of Bloomington	Balance of Monroe County	TOTAL
1990	19,629	60,633	28,716	108,978
2000	22,606	64,602	31,693	118,900
2010	26,606	65,402	34,893	126,900

Table 4
Population By Age Groups

<u>Age Groups</u>	<u>1980</u>	<u>% of Total</u>	<u>1990</u>	<u>% of Total</u>
0-17	20,719	21.0%	20,067	18.4%
18-24	30,052	30.4%	31,624	29.0%
25-44	27,086	27.4%	32,254	30.0%
45-64	13,787	14.0%	15,757	14.5%
65+	7,141	7.2%	9,276	8.5%

Sources: Camiros, Ltd.
The U.S. Bureau of Census
Indiana Business Research Center, Population Studies Division

Housing Needs

Based upon population projections, the total 2010 Monroe County housing need is projected to be 49,700 units (Table 2, page 42). That is an increase of 7,750 units over a 20-year period, including 25 replacements per year due to demolition or loss. Only 2,000 units are expected to be built outside the Bloomington urbanizing area with 940 of these being constructed in Ellettsville. Another 1,990 units are projected for the existing city limits of Bloomington. One-half of all new housing units over the next 20 years can be expected to be constructed in Bloomington's urbanizing area. The IU population growth caveat applies equally well to projections of dwelling unit growth. Eliminating the contribution of IU's growth over the projection period could reasonably reduce the dwelling unit projections by 35 to 45 percent, primarily in Bloomington and the adjacent urbanizing area. The impact of IU on the local housing market is also demonstrated by the fact that, in Monroe County, 45 percent of all households rent rather than own their dwelling (Table 5, below), including approximately 100 percent of group housing. This compares to a rate of 30 percent for rental housing for the State.

The age group of 25-44 corresponds to persons of prime home-buying age. This trend was reflected in the strong demand for homes in the County over the past decade. However, it is unlikely that growth in this age group and its demand for new housing will continue. In addition, there may be a need for more senior and elderly-care housing as the proportion of the population that is 65 years of age and older increases over the 20 year planning period.

Table 5
Housing And Occupancy Characteristics

	Bloomington		Monroe County	
	<u>1980</u>	<u>1990</u>	<u>1980</u>	<u>1990</u>
Population	52,044	60,633	98,785	108,978
in Group Quarters		14,625		15,112
in Households		46,008 (76%)		93,866 (86%)
Occupied Households	16,940	20,983	33,952	39,351
Family		9,226 (44%)		22,953 (58%)
Non-Family		11,757 (56%)		16,398 (42%)
Owner Occupied		7,176 (34%)		21,558 (55%)
Renter Occupied		13,807 (66%)		17,793 (45%)
Vacant		1,042	2,597	
Persons Per				
Household		2.19	2.47	2.39
Family		2.81	2.93	

Sources: Camiros, Ltd.
The U.S. Bureau of Census

NATURAL ENVIRONMENT

Monroe County is the gateway to beautiful southern Indiana, where the flat farmland of northern and central Indiana gives way to hills and forests. The environment is highly prized by residents and non-residents alike, and its maintenance for economical and ecological values is a central theme of this Plan. The major environmental features that influence County land use planning are shown on Figure 1, Environmental Conditions Map (page 21).

CLIMATE

Monroe County has a continental temperate climate. It is typically hot and humid during July and August with daily average high temperatures of 85°F and occasional readings approaching 105°F to 110°F. The weather during mid-winter can be cool with some cold periods and daily average low temperatures of 23°F. January and February temperatures can, on occasion, drop below 0°F. The spring and fall are generally comfortable, but the weather is subject to extreme fluctuations throughout the year. The average annual precipitation is about 44 inches, which is spread relatively evenly throughout the year. However, some intense concentrations of precipitation occur.

GEOLOGY AND TOPOGRAPHY

The land forms of Monroe County are generally grouped into three physiographic regions. These are parts of larger areas of Indiana that were described many years ago by Malott (1922). The northern and eastern parts of the County are part of the Norman Upland, an area of steep, rocky hills, abundant streams and narrow ridge tops. A central belt about six miles wide, extending from the northwest corner of the County trending to the southeast through Bloomington and Harrodsburg, is part of the Mitchell Plain. The Mitchell Plain is characterized by sinkholes and moderate slopes. Along large streams, such as Clear Creek, deep valleys have been cut in the underlying limestone. In southwestern Monroe County, hills that have broad ridge tops and relatively moderate slopes are part of the Crawford Upland.

KARST

Karst topography is one of the special environmental features in Monroe County. Karst terrain, as shown on Figure 3, Simplified Geologic Map (page 47), is located primarily in the western part of Monroe County, but there is also a small area of subdued karst in the southeastern part of the County. Karst is a type of geologic structure that is formed by the dissolution of limestone, dolomite or gypsum bedrock and is characterized by closed depressions (sinkholes), caves and underground drainage. These underground drainage systems have watersheds similar to surface streams, can resurface as springs and may be present even where no surface stream exists. Sinkholes are formed either by dissolution of the surface limestone or by collapse of underlying caves.

(Figure 3, Simplified Geologic Map here)

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SOILS

Sandstone and sandstone-derived soils cap most of the hills of the Crawford Uplands in southwestern Monroe County and limestone and limestone-derived soils are present at lower elevations. The soils of the Mitchell Plain are generally well drained silty loams derived from loess and weathered limestone. Crider Silt Loam is a major soil throughout most of this relatively level plain. The Norman Upland, also known as the Brown County Hills Section (Homoya, et. al. 1985), is characterized by deeply dissected uplands underlain by siltstone, shale and sandstone covered by well-drained acid silt loams soils with minor amounts of loess. Bedrock is near the surface but rarely crops out.

FOREST/RECREATION

People in Monroe County take great pride in the region's forests for their aesthetic beauty and their important roles in the economy and in defining and maintaining the quality of life of the area. Woodland is the largest land use (in gross acres) in Monroe County with forestry resources dominating the east side of the County.

Morgan-Monroe State Forest, located along and east of Old SR 37 North, is managed under the multiple use concept, providing timber production, recreation, resources and wildlife management, watershed protection and research. A part of the Hoosier National Forest lies southeast of Monroe Reservoir in Polk Township and includes Charles Deam Wilderness, the only Congressionally-declared wilderness in Indiana. In addition to the public forest lands, many large tracts of woods are maintained privately, and urban forestry is recovering much of the developed former woodland area.

WATER RESOURCES

While the Monroe County area has abundant rainfall, it does not have large, naturally existing water bodies. The geologic formations of the County result in poor groundwater sources. Man-made reservoirs have long been the solution for potable water supply. Griffy Reservoir (1925) and Lake Lemon (1955) were built for water supply purposes but were quickly outgrown and over-utilized. Bloomington and much of Monroe County currently rely primarily upon Monroe Reservoir which was built in 1966 by the State and Federal governments.

Monroe Reservoir was built primarily for flood protection and low-flow augmentation of the White River by the U.S. Army Corps of Engineers. The State of Indiana's participation is based upon potable water and recreational opportunities. The largest inland water body in the State, Monroe Reservoir serves as the primary water source for more than 100,000 people, a regional recreational destination for approximately 1.5 million visitors each year, a source of wildlife and plant habitat and a field laboratory for many Indiana University programs. The economic, educational and recreational impacts of the reservoir are invaluable to the entire region.

FLOOD PRONE AREAS

Major floodplains are along Bean Blossom creek in the northern portion of the County and in the upper Monroe Reservoir basin along Salt Creek. Flooding also occurs along many smaller streams and in many

sinkhole areas of Monroe County because of the broad expanse of low areas along the banks of many of the County's streams. Monroe County is a participating community in the National Flood Insurance Program and is required to administer floodplain regulations. The Indiana Flood Control Act designates additional areas as floodplain. The regulated floodplain areas cover a great deal of land, including some residential areas. While much of the land in the floodplain is used for agricultural purposes, there are significant amounts of native and re-established wetlands, especially in the Monroe Reservoir area.

WILDLIFE HABITAT

Monroe County currently supports a wide variety of wildlife and plant species. Wildlife, such as the Bald Eagle, provides recreational opportunities for residents and enhances the natural beauty of the County. The Indiana Department of Natural Resources has identified a number of animals and plants in the County that are on Federal or State endangered species lists or the State threatened, special concern or watch lists. Karst ecosystems provide wildlife habitats that are extremely sensitive to land use impacts. For example, Monroe County caves provide winter hibernation for significant numbers of Indiana Bats which are on the Federal endangered species list. Despite the presence of portions of State and national forests, several nature preserves and other public areas, the majority of the area's wildlife depends upon natural habitat on privately-held lands.

LAND USE

The Plan is, essentially, the desired future land use pattern of Monroe County based on the needs and concerns of the community. As such, the Plan incorporates the attractive and/or stable elements of the existing land use pattern with desired modifications to that pattern. Consequently, in order to fully understand the changes in land use embodied by the Plan, a thorough knowledge of the existing land use pattern must be attained first.

Monroe County, which is approximately 412 square miles in area, is bounded by Morgan County on the north, Brown and Jackson Counties on the east, Lawrence County on the south, and Owen and Greene Counties on the west. Bloomington and Ellettsville combined occupy about four percent (15.1 and two square miles, respectively) of the land within Bloomington's urbanizing area accounting for another ten percent (40.88 square miles). Monroe County's general land use configuration is shown in Figure 4, Generalized Existing Land Use Map (page 53).

RESIDENTIAL

Single family residential uses account for most of the residential land uses in the County. The Pointe, a recreational/residential resort complex located on Lake Monroe in Clear Creek Township, is presently the largest of the few multi-family residential complexes outside of the Bloomington urbanizing area and Ellettsville. Platted subdivisions are found along major roadways with concentrations south and east of Ellettsville along SR 46, southwest of Bloomington along SR 45 and south of Bloomington to the Smithville community. The remaining residential uses are scattered along County roadways.

COMMERCIAL AND INDUSTRIAL

Further evidence of the County's rural character is the limited amount of commercial uses outside the Bloomington urbanizing area, most of which are located in Ellettsville. The one exception is the strip commercial corridor along SR 46 in Richland Township southeast of Ellettsville. The majority of commercial uses located in the County are convenience oriented, generally serving the day-to-day shopping and service needs of residents. Retail activities are primarily groceries, drug stores, liquor stores and so forth. Shoppers goods, those that generally involve price comparisons such as clothes, appliances or furniture, are found in Bloomington.

MINERAL EXTRACTION

Mineral extraction is an important economic activity in Monroe County. Indiana dimension limestone is considered a resource of national significance. Abundant commercial-quality limestone is available near the surface, and quarries are scattered throughout central, southern and western Monroe County. Dimension building limestone, high-calcium limestone and crushed stone are being mined on a large-scale basis.

The architectural dimension limestone is mined using large saws, low velocity charges and compressed air to gently break apart formations after the removal of overburden. Fabrication mills are located throughout the Mitchell Plain. Aggregate quarrying uses high velocity charges to blast away the stone which is then usually processed on site. Blasting is regulated by State and Federal laws.

Small amounts of oil and gas are located along the Mount Carmel Fault in eastern Monroe County.

RECREATION

Lake Lemon and Monroe Reservoir provide a wide range of outdoor recreational opportunities including sailing, canoeing, motor-boating, water skiing, camping, fishing and wildlife observing. State and Federal forest lands provide additional recreational opportunities including hunting, fishing, hiking and camping. Karst Park, on the west side of the County, and Danny Smith Park, on the east, provide organized recreational settings. County residents may also enjoy Bloomington and Indiana University recreational facilities. A Rail Trail is under development from Bloomington south to the Victor community in Lawrence County.

WOODLAND

Woodlands, the largest single land use in Monroe County, cover about 45 percent of the County. National and State forests and preserves are located in the eastern portions of the County. Charles Deam Wilderness, a part of the Hoosier National Forest, accounts for more than one-half of the land in Polk Township and extends into Brown County. Deam Wilderness is an extraordinary resource for County residents and visitors and should be carefully protected from incompatible development or land uses which may infringe upon its wilderness character.

AGRICULTURE

Agriculture uses comprise the second largest County land use category, at approximately 35 percent of the total land area. Approximately 20 percent of the County is in cropland, while 15 percent is in pasture. However, there are very few full-time commercial farms in Monroe County. From an economic viewpoint, Monroe County agriculture is not particularly strong. The County could see a decline in commercial agriculture in the future due to economic pressures for other types of land uses. However, agriculture can continue to provide a valued way of life and augment other employment activities for many families. The opportunity to farm should be protected.

In Monroe County, the most important uses of agricultural land are pasture, and grain and hay production. There is a limited local grain market, so much of the locally-produced grain is exported. However, much of the roughage produced within the County is sold within the County. Most of the grain, pasture and livestock farmland lies in floodplains or on the Mitchell Plain.

(Figure 4, Generalized Existing Land Use Map here)

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MAJOR PLANNING ISSUES

OVERVIEW

Planning in Monroe County must respond to a host of issues. Many of these require difficult choices as the effect of fixing policy for the good of the whole often limits the choices of certain individual property owners. Balancing the desires to maintain a rural character, protect environmental assets, develop a safe and efficient thoroughfare system, promote economic growth, provide adequate housing, effectively spend public moneys on infrastructure and protect personal property rights is a complex task. Regulations that protect the general public should be equitably distributed in terms of cost to individual community residents. Six major issues appear to be central to the objectives and policies of this Plan.

ECONOMIC DEVELOPMENT

Relationship Between Population Growth and Economic Vitality

For some, the desire to attain and maintain a high quality of life results in reliance upon a link between population growth and economic growth. For others, this same desire becomes unattainable in the face of population growth which competes for the same resources upon which their quality of life depends. In order to meet the needs of the former, the latter must inexorably experience a loss. For this latter group, the issue to resolve is the creation of the means for economic vitality which depends not upon more people as consumers, but better economic opportunity for existing residents. With Monroe County's relatively low unemployment rate, it is not so much a matter of creating jobs as it is a matter of creating better paying jobs and assuring that residents have the opportunity to acquire the skills needed to fill those better jobs.

For the former group, such a localized focus ignores the realities of modern market economics and population dynamics. They see economic vitality as the result of new industrial capacity and regional consumption based upon a rapidly expanding population. The former group seeks to perpetuate the experience of the last 20 years, while the latter group seeks to arrest the burgeoning negative impacts which have resulted.

Community Economic Focus

Educational Institutions

Over the past 20 years, almost 50 percent of the population growth in Monroe County has resulted directly from the expansion of Indiana University's teaching and research operations. Indeed, it is the expected decline in this rate of expansion that is the leading cause for expected declines in the rate of population growth over the next 20 years. Continuing to leverage the University's physical and personnel assets is important to continuing economic growth, but fostering such an effort with a State institution of international stature is difficult. The State has relatively little interest in moderating its institutional plans to meet local objectives. However, the community can influence the decisions of individuals, and the institution indirectly, by providing an attractive place in which to live and attend school. Making Monroe County less attractive to those students and faculty necessary for the University's growth and maintenance will seriously undermine the local economic vitality.

The past 20 years have also seen the growth and development of the Indiana Vocational and Technical College. Serving a regional base, the College is now a major contributor to skills development for local businesses and industries. With planning for a new campus under consideration and a clear need for its educational product, this institution can be expected to play a significant role in community economic growth.

Retail and Service Sectors

Typical of most of the country, growth in retail and service businesses has been a leading factor in local economic growth. The large student population and increased regional access have created an expanding market for consumer goods and services locally.

Unfortunately, the jobs created by these businesses are not generally well paying. Indeed, some claim that the low hourly wage rates found in many sectors of the Bloomington economy result from a large part-time student employment base. Regional consumption has also brought traffic congestion around shopping destinations. As more people use Bloomington as a shopping destination, they also tend to use other local services, building the regional function of the County and adding a great deal of energy to the local economy.

Consumers are able to find wide variety and competitive pricing in goods and services. Centered on Bloomington Hospital, a large medical services sector has emerged to meet regional demand. Monroe County professionals are reaching an expanding regional and national clientele.

Efforts should be made to continue to develop the regional character of local retail and professional services while managing the impact on the thoroughfare network. Focusing on the development of higher-paying job opportunities should serve to improve overall wage rates. To that end, the County economic development leaders should seek to help existing high-tech operations expand when an opportunity arises and to attract new high-tech enterprises to locate here. The development of top quality business parks should be encouraged. Such business parks should be conveniently located proximate to potential support services and the transportation network and include lush landscaping and other possible amenities in order to enhance their visual appeal.

Industrial and Wholesale Sectors

Industrial employment, both in total jobs and as a percentage of total employment, has decreased recently. While the primary objective of local economic development organizations has been to maintain and enhance existing industrial operations, there has been a lack of development-ready industrial sites for new employers.

In the past, some local industrial operations polluted drainage systems and landfill sites. While many feel the need to promote industrial employment opportunities, many also demand caution in the types of industries promoted. Large industrial and commercial operations should have more capacity to manage complex and expensive land use development in ways which protect community resources.

Small businesses provide many jobs. Efforts directed toward retaining and expanding existing small businesses and attracting new small businesses will result in a strong, diversified economic base.

Tourism Sector

With Indiana University's athletic and cultural events and facilities, Monroe Reservoir, the County's public recreation lands and the promotional efforts of the Monroe County Convention and Visitors Bureau, tourism provides a significant economic benefit to Monroe County. The retail impact is far more extensive than a mere regional shopping center. Hotels, restaurants and many specialty shops are supported by tourist dollars.

Tourism also has an impact on local infrastructure and certain public services. At times, the impacts of tourism can be overwhelming and inconvenient. The most frequently expressed complaint about Monroe Reservoir concerns overcrowding. SR 46 before or after an IU athletic event is congested. While tourism provides economic gain for local businesses and recreational benefits for visitors, efforts should be made to ensure that these gains and benefits are not realized entirely at the expense of the residents.

Economic Opportunities

The difficulty in addressing the effects of planning on economic development lies in the evaluation of opportunities. Planning is a means to structure this evaluation from the perspective of community goals as distinct from personal goals. The identification of significant economic opportunities, the preparation of a timely response to such opportunities and the integration of those realized opportunities into the fabric of Monroe County are reasons for having a comprehensive plan. If residents do not or will not integrate an opportunity into the community, then that opportunity is not viable.

PUBLIC SERVICES AND FACILITIES

Public Financial Resource Limits

Every presentation and discussion of public facilities and infrastructure should begin with a reference to the realities of public finance. Public revenue, in the form of taxes, fees or fines, is the primary means for funding public enterprise operations and building public capital facilities. In Monroe County, the amount of revenue available is determined almost entirely by the State of Indiana. State government sets or approves local tax rates, supplies revenue from state-wide revenue sources and provides access to Federal sources of funds. The largest county employer is Indiana University, a State institution, and large tracts of land are publicly held.

As a result of these financial dependencies, not all of the public services and facilities that are requested by the County's residents are able to be financed. In fact, the capacity of public infrastructure is being eroded by both increasing demand for its use and decreasing support for its operation.

Given that public financing will not change radically over the course of this Plan, it may be difficult to meet the expressed needs of the residents. Several solutions to this problem seem possible. First, public revenue should be focused in order to efficiently and effectively provide public services and facilities by allocating current money wisely and by limiting future expenses. Second, private capital should be focused in order to efficiently and effectively support community needs for public services and facilities. These actions can include public revenue support of private initiatives which will result in greater opportunities for both private and public revenue. A third alternative, the Tax Increment Financing (TIF) District, has already produced tangible results in Monroe County. As explained by Robert D. Swhier, Jr., in the August 1991 publication of the Indiana Association of County Commissioners:

TIF laws allow government units to pay the cost of public improvements made in connection with redevelopment and economic development projects, from the future increased real property taxes generated by the projects. Once established, a redevelopment district receives a temporary allocation of the increase in real property tax proceeds (the "tax increment") generated by increases in assessed value due to private redevelopment or economic development activities in a designated TIF area. The future tax increment pays for public improvements that may be necessary to induce private development, or retires bonds issued to finance the public improvements. TIF may be used to acquire property and construct local public improvements in or serving the TIF area such as roads, waterlines, sewers and parking facilities.

It appears impossible for either approach to achieve a satisfactory result without the other. This public/private dependency relationship raises several important issues. If public revenue can not possibly support public needs, then why is any public financial support of private initiatives even considered? Are the measures of fiscal efficiency and effectiveness used in the private sector appropriate for public entities? When does the public's involvement in private investment decisions result in an inability of private individuals and organizations to productively manage their own affairs? How do we determine future public expenses which can be reasonably avoided? Generally, these issues are difficult to resolve. Planning efforts which focus on specific community needs can identify options that address those needs. However, such efforts must be framed in the context of the entire County so that a solution to one problem does not create another problem elsewhere.

Transportation Network

For many people, traffic congestion and roadway conditions are the two most frequently cited concerns when the subject of future growth and development arises. Both City and County governments depend on State-shared revenues and Federal highway funds for most capital and operating costs related to roads, public transit and the airport. Transportation-related taxes, fees and fines collected locally are distributed by the State and supplemented for specific projects by State and Federal agencies. Monroe County participates in the Metropolitan Planning Organization (MPO) for the Bloomington Urbanized Area to program Federal highway assistance funds and transit funds. Because State-shared revenue funds are needed to support transportation-related operation and maintenance expenses, the MPO process represents most of the capital project funds available. In addition, Monroe County is compiling a Thoroughfare Plan to address long-term maintenance and construction needs.

Although developments are required to construct interior roads to established standards before the County will accept responsibility for the maintenance of the new roads, neither the MPO nor the Thoroughfare Plan directly addresses the role that private development has in the provision of an adequate transportation network. Currently, the impact of a new development upon the entire transportation network is not considered relevant to a particular project. Such impacts are borne by the public at large.

Public transit is largely viewed as a convenience for City residents and IU students. Limited transit service in the Fringe leaves much of the non-student urban population without access to transit and forces automobile travel from home to place of employment or shopping. Very low density, scattered residential uses make regular rural transit infeasible to many parts of the County. However, Area 10 Agency On Aging provides limited rural transit service, primarily for elderly and/or disabled persons who are no longer driving or have no other transportation available to them, in Owen and Monroe Counties and connects at certain points with Bloomington Transit and Indiana University bus systems. One regular express route is established between Spencer and Bloomington, operates from 6:30 a.m. to 7:00 p.m. and has designated stops along the route. Arrangements can be made for additional stops between the regular stops by calling ahead. Certain general

areas of the County are served on specific days with arrangements being made for pick-up one day in advance of the designated day. Public transit should be made a more integral part of movement around the County as funds become available.

Recently, efforts were made to begin providing bicycle and pedestrian pathways to serve County residents. While most of these are in the Bloomington urbanizing area, suburban areas around Ellettsville and south of Bloomington could also benefit from these opportunities.

The Monroe County Airport-Kister Field, located on approximately 765 acres west of Bloomington, is a valuable facility which offers opportunities for local businesses and residents. Yet some view it as an unnecessary noise maker that restricts the use of adjacent developable land and operates for the convenience of a few local companies. It is predicted that the 1990s will be a decade of significant growth at the airport. The longest runway is 6500 feet and accommodates charter and commuter service, including daily commuter service to Ohare and Midway Airports in Chicago. Monroe County Airport is the area's only commercial service airport, is operational 24 hours per day and is home base for approximately 75 aircraft. In 1994, total annual operations exceeded 30,700. The airport's economic impact upon the community was computed by the Aviation Association of Indiana to be in excess of 25 million dollars annually. The Monroe County Airport Development Plan addresses its own specific development-related issues.

Waste Management

The City of Bloomington Utilities (CBU) provides sanitary sewer to Bloomington, much of the adjacent urbanizing area and portions of Richland Township. Ellettsville provides sanitary sewer in and around that community. The Lake Monroe Regional Waste District is authorized to provide sanitary sewer to the remainder of the County but currently serves Stinesville and an area on the northwest edge of Monroe Reservoir near The Pointe and plans a near-future expansion into Harrodsburg. The remainder of the County depends upon septic treatment systems. Unfortunately, due to slopes and soils, much of Monroe County is not well-suited to septic systems and most existing systems do not meet current standards. New developments within 300 feet of a sanitary sewer line are required to connect to it. Many developers have been willing to extend sewers even farther distances into their projects because of the property value that is added.

Because sewers are seen as a means of adding potential density to and increasing the profitability and impacts of a project, sewer placement is a land use planning consideration. Only CBU has a long-term development plan. However, none of the various utilities are guided by or answerable to an official body of Monroe County. This relationship between waste disposal and land use is highlighted by recent decisions of the Monroe County Board of Health with respect to septic system standards. New regulations limit even further the sites suitable for septic system installation, and the Board of Health has been accused of conducting land use planning, particularly in reservoir watersheds.

Water Delivery Systems

Providers of water services to the area include CBU, East Monroe Water Corporation, B and B Water Corporation, RHS Water Corporation, Washington Township Water Corporation, Maple Grove Water District and Patricksburg Water Corporation. While there is generally a sufficient water supply, water distribution is a limiting factor. Most rural water companies do not provide any fire protection flow, and development in some areas has been limited by capacity. Many of the companies buy their water from CBU which relies almost entirely upon a single 36-inch line from Monroe Reservoir.

Other Utility Services

Public Service Indiana (PSI) and several Rural Electric Membership Corporation (REMC) authorities provide electrical power service within Monroe County through a substation based distribution network. Several high-voltage power line easements exist. Telephone service is generally provided along County highway right-of-way and other public easements by Indiana Bell and the Smithville Telephone Company. Natural gas is stored along the Mt. Carmel Fault and is distributed to much of the developed area.

Parks and Recreation

In the context of a County with considerable open space and a rural life style, the concepts of formal parks and recreation facilities may seem out of place. Active recreational opportunities, primarily in the form of organized athletic activities, are well-utilized facilities. Most County residents live in suburban surroundings without available open space for play and personal enjoyment nearby.

Historically, most park land had been donated to the community. As large parcels disappear and land is more often held for future development, these donations rarely occur. When an offer to provide park land is made, that land is often not suitable for residential use and is, therefore, not very well suited to many types of recreational uses either. How can the County obtain sufficient land proximate to County residents to meet their needs for open space and recreational opportunities? Is it feasible to pass such costs on directly to nearby residents through development fees or tax districts? Can private lands be used to meet the park and recreational needs of others? Is the expressed desire for a "rural character" in conflict with the call for accessible public open space? To what extent do the extensive State and Federal facilities in Monroe County meet residents needs? The Master Plan for the Monroe County Department of Parks and Recreation addresses many of these issues and is included in this Plan by reference.

Police and Fire Protection

There are four police organizations in Monroe County: the Bloomington Police Department, the Ellettsville Police Department, the Monroe County Sheriff's Department operating out of Bloomington and the Town Marshall in Stinesville. The Sheriff's Department is responsible for all of unincorporated Monroe County. State police officers patrol State highways from a post in northern Bloomington.

There are 14 fire stations in the County: five in Bloomington, two in Ellettsville and others in Bean Blossom, Van Buren, Clear Creek, Indian Creek and Benton South Townships. Some areas of the County are in need of local fire protection, especially Benton North, Washington Townships and those portions of Salt Creek and Polk Townships southeast of Monroe Reservoir. Other areas need additional capacity to meet the demand of recent growth. Inadequate water supplies, substandard hydrants and narrow culs-de-sac cause problems for firefighters. As has become apparent through the recently implemented 911 emergency phone system, the duplication of street names, single streets with multiple names and inconsistent property address numbering are major problems for safety providers.

The fire companies which operate outside of Bloomington and Ellettsville are not part of a County-wide system. They are managed by Township Trustees and funded by township-based taxes often with inter-township agreements. This arrangement may not provide the best protection to County residents. Small companies can not benefit from economies of scale, must rely upon small professional and volunteer staffs and can not offer broad-based protection.

Schools

The Monroe County Community School Corporation (MCCSC) provides instruction for the majority of students from kindergarten through 12th grades. The Richland-Bean Blossom Community School Corporation (RBBCSC) provides instruction for residents of Ellettsville, Stinesville and the surrounding areas in northwestern Monroe County. There are a total of 16 elementary, three middle and three high schools. The majority of the schools serving the County are in or adjacent to Bloomington. School facility siting has become a serious issue during the past ten years as successive school boards have responded to population changes with different approaches. The serious over-crowding at Ellettsville Elementary is the result of a failure to comprehend the impacts of development along SR 46. One outcome of comprehensive planning must be the ability to conduct better siting of schools to accommodate future changes in population.

While the Indiana Vocational and Technical College (IVTC) is not strictly a local school, it is a very important local educational resource. IVTC provides most of the post-secondary technical training for Monroe County residents and is, therefore, a critical resource for economic development. Not much has been done to provide a broad base of local support for this institution. Assisting IVTC to physically grow could do much to foster a spirit of economic development in Monroe County.

Social Service Delivery

While social services ranging from health clinics to church-based welfare organizations are primarily found in Bloomington, a wide range of services are distributed throughout the County, either as community organizations or as outreach services from the Bloomington-based groups. Of particular importance are the 94 licensed daycare and nursery schools in Monroe County. The number of children who can be accommodated by each facility ranges from four to 114. Child care is an important part of employment opportunity and must be available for pre-school children as well as after regular school hours and during the summer. Child care costs can be difficult for average-income families to afford.

These and other social, health and welfare services or facilities have independent planning needs and policy issues. Their common bonds regarding land use and transportation planning are service delivery and facility duplication in a fairly sparsely settled area totaling over 400 square miles. Where people reside determines the place of demand for many of these services and their attendant facilities.

RESIDENTIAL DEVELOPMENT

Residential Diversity

The availability of structurally sound, sanitary and affordable housing for every resident is a crucial social and economic need. People should have an opportunity to live close to their places of work if they so choose. The supply of housing should be able to meet the needs of each household according to household income, size and location needs and preferences.

The estimates of total housing needs in Monroe County (Table 2, page 42) result from the following factors: deficiencies in the housing stock due to substandard conditions and overcrowding; units which will be

needed to house the future population growth; and the need for standard housing that is affordable by low- and moderate-income households.

Because most housing is provided by the private sector, it seems appropriate to consider stabilizing influences on the housing market as a means of promoting the provision of adequate housing. With the assurance of land availability and infrastructure, the two most frequently cited requirements for successful development financing, there is an opportunity for the market to provide a range of housing options. However, not everyone wants to be subjected to every housing option in their neighborhood, and housing options are not equally feasible. In many respects, existing housing stock provides the most affordable housing.

Housing Costs

A common complaint by the housing industry about planning and zoning regulations is the escalation of development costs. There is certainly an additional cost to managing a problem that was heretofore unmanaged. In many circumstances, the problem addressed by new regulation, or most often its consequential scope, is new to a community. The roads may be congested, the drainage system may no longer work and the open space may no longer be available. In attempting to resolve these problems, additional costs may be added to housing. For many households, the marginal cost increase may be manageable, but for others, it may not be manageable.

ENVIRONMENTAL PROTECTION

Watershed Management

Drainage in Monroe County is split between the east and west forks of the White River basin which drains much of south central Indiana. Within the County, watershed management is of particular concern in the drainage areas for water reservoirs which provide drinking water and recreation. The watersheds for Monroe Reservoir and Lakes Griffy and Lemon include many governmental agencies' jurisdictions whose collective priorities may not be explicitly coordinated. Differing objectives sometimes result in conflicting responses to the same situation. Fortunately, many aspects of watershed management are of common concern, have recognized impacts and are managed by mutually acceptable regulatory procedures. An example is the regulation of sewage disposal from large watercraft.

Erosion and Sedimentation

Soil erosion and the resulting accumulation of sediment in streams, lakes and drainage ways are major concerns for watershed management everywhere. Erosion reduces soil quality, clogs drainage ways and carries excessive nutrients and toxic materials to streams and reservoirs. While erosion gullies are a visible problem, the cumulative effects of sheet and rill erosion are less obvious to the untrained eye. In recent years, the erosion of agricultural lands has been addressed by increased awareness and use of better soil management practices for highly erodible soils, but much remains to be done regarding stream wash along the edges of cultivated bottom lands. Recently, attention has been directed to monitored erosion control during construction. Efforts to provide adequate post-construction maintenance of erosion control structures is just beginning. These issues are of great concern in Monroe County due to high development rates, steep slopes, erodible soils and critical water resources.

Soil erosion is a natural process which cannot be eliminated. Minimizing the erosive impact of land disturbing activities is the only means by which to manage this process in a way that reduces negative impacts of sediment in ditches, streams and reservoirs. Therefore, the central management issue becomes the establishment of acceptable erosion control mechanisms which work well over the long term and are easy to administer.

Ground Water

Even though most Monroe County residents do not use well water, it is still a potable water source for some homes and livestock. Ground water pervades the karst where rare and endangered species and geologic forms may be maintained. Usually this water is carried again to the surface in the form of springs or stream rises. Concern for ground water quality in karst areas is the major factor which lead to the Super Fund cleanup efforts for PCB dumping sites in Monroe County.

Septic effluent is a major source of ground water contamination. Recent actions by the State of Indiana and the Monroe County Board of Health address the need for better septic management. In sensitive areas, issues relating to non-agricultural runoff, such as increased water volume, toxic residues, chemical nutrients and sediment accumulation, are largely ignored. Monroe County is situated at a relatively high elevation. It is important to pass clean water on to downstream residents and environments. Only site-specific soil erosion effects, where the problem is visible, appear to be of much current concern.

Rivers and Streams

In addition to the erosion concerns cited above, it is important for Monroe County residents to realize that many people drink the water which leaves the County. Livestock also relies upon stream water. Water flowing south in Clear, Indian and Salt Creeks toward the east fork of the White River and west in Bean Blossom, Jack's Defeat and Richland Creeks toward the west fork of the White River is contaminated by toxic materials deposited in Monroe County to the extent that fish caught in these waters should not be eaten. It is unclear how to improve surface water quality as natural filter areas are reduced and new sources of material loading develop.

Bean Blossom Creek in northern Monroe County often floods in the spring. Local flooding occurs on many low-lying County roads. Flooding will likely increase if development occurs without proper management of storm water runoff.

Storage Reservoirs

Monroe Reservoir

As of this writing, a "U.S. EPA Diagnostic /Feasibility Study of Lake Monroe" is being conducted by the Environmental Systems Application Center of Indiana University's School of Public and Environmental Affairs. This study will help identify sources of soil erosion, nutrient loading and runoff in the Monroe Reservoir watershed. The resulting management plan will provide guidance for both in-lake and watershed management and will provide important input to Monroe County's land use planning policies. Plan policies for the management of Monroe Reservoir will be reevaluated as this new information becomes available. In

the interim, a cautious approach should be taken regarding development and other land-disturbing activities in the reservoir watershed.

Even though much of the Monroe Reservoir watershed has protective forest cover, pollution threatens the lake as a result of illegal sewage disposal from recreational users and watershed residents, and such non-point source pollution as runoff from agricultural and residential pesticides and fertilizers. It is imperative that measures be taken to protect this water source. Siltation has already forced a one-foot rise in the normal pool level from the design standard to accommodate summer boating in the eastern reaches of the reservoir.

The State of Indiana, through the Indiana Department of Natural Resources, is the primary management authority for Monroe Reservoir, subject only to the flood control and low flow augmentation needs of the U.S. Army Corps of Engineers. The State's original investment in the Monroe Reservoir project was based upon the desire for a long-term potable water resource and supplementary recreational facility.

State managers have actively supported efforts to gather water quality information, reduce recreational use impacts on water quality and generally enhance the environmental quality of the reservoir area. The issue still remains one of who is directing the balance between the desire for recreational use and the need for a secure, potable water supply. With a concept known as Total Resource Management, the State now also manages productive timber resources along the shoreline and in the bottom lands above Monroe Reservoir. Some people are concerned that timber sales will become another competitive force resulting in further degradation of the reservoir's natural environment.

Potable Water Supply Requirements

At present, the Bloomington Water Treatment Facility at Monroe Reservoir is the source of potable and industrial water for about 85,000 people. The City and most of the local rural water companies rely primarily upon this water resource. The current treatment capacity is 24 million gallons per day with an average daily consumption of 13 million gallons and a peak consumption of 18 million gallons per day. The excess capacity should meet local needs for many years to come. However, there are some concerns about the reservoir that must be considered.

Lower water quality at the intake tower increases water treatment costs, decreases treatment flow rate and decreases some quality components, such as taste and odor, of the resulting treated water. While current water use is local, Monroe Reservoir is a State facility with the potential to serve water users as far north as Indianapolis. The water use design capacity of the reservoir is perhaps ten times the current use. Assuring that capacity over the long term means that both the water quality and volume in storage must be maintained. A survey of Monroe County residents indicated that the protection of this water supply is one of the most important outcomes of land use planning. However, few can agree on which protective measures should be taken.

Recreational Resource

In 1990, 1.5 million people visited Monroe Reservoir to partake of its wide variety of recreational opportunities. On major warm-weather holidays, the reservoir is literally packed with people and boats. State operated Fairfax Marina can accommodate up to 1,000 boats, and private docks can accommodate up to another 200 boats. Public boat ramps and campsite opportunities are available as well. The Four Winds Resort and Fairfax Beach are heavily-used summer attractions.

Overuse is the most frequently cited problem related to recreational use of Monroe Reservoir. The small number of on-site IDNR staff and conservation officers is often restricted to policing the boat ramps and campgrounds. Recently, private boat dock rules were modified to eliminate the possibility of future dock locations and to require sewage discharge points at any dock capable of handling large watercraft.

Watershed Development Pressure

While the reservoir, its immediate shoreline (up to 560 feet Mean Sea Level) and the adjoining State and national forests are managed by the State and Federal governments, most of the remainder of this watershed in Monroe County, about 9,000 acres, is in the jurisdiction of the Monroe County Plan Commission. This jurisdiction includes most of the watershed's prime development land which is privately owned.

Over the past 25 years, development has generally been sparse in the watershed because of relatively high development costs, steep slopes, poor access and poor soils for septic systems. Some notable exceptions exist, and all are a source of concern because of poorly anticipated long-term impacts. The terrace areas not purchased by the State for recreational use have seen residential construction using older style septic systems. The Pointe is located, in many places, at the fee take line of 560 feet and continues to be a source of erosion control problems and leaking sewage pump stations. The Lake Monroe Regional Waste District which serves this area is expanding into other watershed areas where higher density development could occur. Newly-developed lots on septic systems overlooking the reservoir are priced in the \$80,000 range. Development pressure in the reservoir area is increasing. At some point, incremental development may diminish the water quality and recreational value of the reservoir. Significant opportunities exist for economic development which utilizes the reservoir as an asset. However, as with many issues regarding land use, the value of opportunity is personal and vested. Not all prospective uses can be accommodated, as some uses will preclude others. At some point, certain opportunities must be foregone in order to allow for the maintenance of others.

Multi-jurisdictional Management

Over 20 local, State and Federal governmental agencies are responsible for some portion or aspect of the Monroe Reservoir watershed. With the exceptions of contractual agreements between the State of Indiana and the Federal government for the management of Federal reservoir property and those between Bloomington and the State of Indiana for water use, no formal agreements coordinate the various agencies' efforts specifically regarding the reservoir. While all agencies may have the best interests of the watershed in mind, the lack of coordinated and complementary plans for watershed management is a growing concern as watershed land use intensifies. Clearly stating the various agencies' interests and determining which interests must be subordinate to others are critical tasks for the future.

One group, the Lakes Task Force, was formed in 1989, has its roots of origin in Monroe County and includes residents and officials from neighboring watershed counties in its membership. A primary focus of this group has been to bring together the various groups and individuals who have an interest in the coordinated management of Monroe Reservoir and its watershed. The Lakes Task Force holds monthly meetings which are open to the general public.

Another group, the Lake Monroe - Salt Creek Watershed Alliance, developed out of a group of Brown, Jackson and Monroe County citizens that was assembled to participate in the administration of a Section 319

Non-point Source Pollution Control grant that was awarded from the US Environmental Protection Agency (EPA) through the Clean Water Act. Administered locally through the Indiana Department of Environmental Management (IDEM), the grant was awarded for the purpose of creating an awareness among local landowners of the problems associated with sedimentation in the Monroe Reservoir watershed and identifying how to effectively and economically control sedimentation. The Alliance's vision statement reads: "A group of concerned citizens committed to fostering, inspiring, and coordinating a land ethic that promotes and enhances a healthy and sustainable environment in the Salt Creek Watershed as evidenced by clean water in the watershed streams and lakes." The Alliance's goal is "to be an effective steering committee to inform the public, including targeted stakeholders in water quality and watershed issues in the Upper Salt Creek watershed." The objectives of this group have grown from participation in the 319 grant to include working toward the overall protection of the watershed as a resource. Monthly meetings are open to the general public.

Since Monroe County land comprises only 20 percent of Monroe Reservoir's total drainage area, the effectiveness of even the most rigorous County watershed protection program may be limited. Neighboring Brown County, with a population of 14,000 and an area of 312 square miles, is almost entirely within the watershed. However, because of State- and Federally-owned lands, there may actually be less privately-owned developable land in the Brown County portion of the watershed than in Monroe County's portion. The affected neighboring counties must be motivated to also protect the resource. A cooperative management effort is clearly required. The State and the U.S. Army Corps of Engineers are preparing new management plans for the area. Local public input into those plans appears to be non-existent although personal contacts and public policy are probably incorporated.

Lake Lemon

Bloomington built this Lake Lemon for its primary water supply in the 1950s but abandoned its use for that purpose in the 1980s in favor of expanded capacity at its Monroe Reservoir Treatment Facility. Since that time, the future of Lake Lemon has been a subject of controversy. This shallow lake has a history of problems with sedimentation fill and aquatic weed infestation. Weed control is attempted by mechanical harvesting and chemical treatment. Much of the lake is surrounded by residential development which has older-style septic systems or holding tanks. The public and private commercial ventures which provide recreational facilities are marginal in operation because of the declining quality of the lake and competition from Monroe Reservoir.

Bloomington has expressed a desire to eliminate its responsibility for the lake, but no viable plan for its maintenance has emerged. A proposed conservation district for the lake is being considered by the area's residents. It is unclear whether a conservancy could support the lake's maintenance given the relatively low value of many of the area's properties. The success of new commercial ventures in this area is doubtful.

A recently completed Diagnostic Feasibility Study for Lake Lemon may allow requests for remedial action funding from State and Federal agencies which can begin a recovery process. At that point, a new management structure that places more reliance upon residential users may be possible, and an attractive mix of residential and neighborhood convenience commercial uses may again emerge. The addition of sanitary sewer service would greatly improve the chances for a successful revitalization of this area.

Griffy Lake Nature Preserve

Lake Griffy is located north of Bloomington, adjacent to land owned by Indiana University. Since 1925, this facility has provided water for Bloomington and is still contributing one million gallons per day. Recently, 240 acres of the southern portions of this property were dedicated as a State Nature Preserve. Bloomington's Growth Policies Plan provides protection for the undeveloped portions of the watershed within the urbanizing area using a large-lot Conservation Residential designation. The major land use concern is whether these watershed development restrictions will be extended into the County's planning jurisdiction. Future land use of Indiana University property in the watershed, particularly that which is close to already developed land northeast of the SR 46 Bypass, is a particular concern. While the implementation of the Griffy Lake Long Range Use and Management Plan has reduced what had become an alarming use problem, the potential for over-use of this relatively small site so close to a population center is always present.

Solid And Hazardous Waste Management

The Indiana Solid Waste Management Plan requires each county to form, or belong to, a Solid Waste Management District. Each District has been required to develop a 20-year solid waste management plan that explains how each district will reach its mandatory 50-percent reduction of solid waste by 2001. Waste reuse and recycling and vegetation composting are essential elements to this plan. Final disposal is considered the last resort if the above methods are not adequate.

Disposal Facilities and Methods

The Solid Waste Management District provides properly managed and conveniently located stations for depositing recyclable waste in order to minimize illegal open dumping, maximize recycling by County residents and extend the life of the landfill. The stations are convenient to the residents of each community in the County. The four existing County recycling and waste stations are conveniently located on Oard Road, Dillman Road and Bethel Lane in the County and on North Matthew Drive in Ellettsville. Bloomington also provides solid waste and recycling pick-up service.

The recent need to recycle has demonstrated the lack of facilities for many members of the community. This is especially true for apartments, industries and businesses. It is essential for land use planning to consider these needs when multi-family dwellings, subdivisions and commercial and industrial areas are planned and approved.

Final disposal by land filling requires suitable land. Landfills are not considered to be desirable places around which to live. However, when properly managed, modern landfills do not create the kind of problems that the "dumps" of yesterday imposed on their neighbors. They are thought to be associated with blowing trash on roads, erosion, groundwater contamination, methane odors and lowered property values. They are also considered a critical necessity for economic development and decent sanitation. The present landfill has approximately 2.5 years of use remaining. An expansion permit, expected to be issued soon, will allow for an additional 25 acres of land for general waste and provide up to an additional 35 years of life at the current site. A six-acre site for construction debris has been established to ease the demand on the main landfill. The existing landfill has been singled out by the Indiana Department of Environmental Management for its successful operation.

Additional land has already been purchased in an area known as Glacier Valley for even longer-range landfill disposal. This area is desirable for land filling because of the presence of deep soils over impermeable rock.

Hazardous Waste Identification

Many areas of Monroe County have been contaminated by PCB's, resulting primarily from the electrical capacitor disposal associated with the manufacturing operations of Westinghouse Electric Corporation. The material was disposed of in area landfills and quarries and also found its way into the sanitary sewage system, contaminating the Winston Thomas Sewage Treatment Plant, which is no longer operational.

A consent decree between Westinghouse, the U.S. EPA, the Indiana Department of Environmental Management, Monroe County and Bloomington required certain contaminated areas to be excavated with the excavated material being burned in a two-stage incinerator. The proposed incinerator, to be located on Dillman Road southwest of Bloomington, met with considerable local opposition. The ash that would have resulted from the incinerator operation was to be landfilled in an area on Bottom Road north of Bloomington in Washington Township. To date, the incinerator has not been established and its future is doubtful. Negotiations over the fate of the contaminated areas continue, with all parties searching for an acceptable alternative. Areas of known contamination should be identified in such a way that potential buyers are properly warned about the potential liabilities.

KARST IMPACTS

Limestone bedrock underlies well over 60 percent of Monroe County. It is most prevalent in the central, western and southern sections of the County where most of the land suitable for urban, agriculture and residential development is located. Bedrock formations are shown in Figure 3, Simplified Geologic Map (page 47). Much of this limestone area is characterized by karst topography and subterranean drainage features.

Karst terrain presents development obstacles not normally found in the Midwest. Three problems associated with urban development in karst topography limit easy rural development and make the use of septic waste water disposal undesirable: flooding potential; groundwater pollution; and unstable ground in and around sinkholes. To protect groundwater resources, sewage collection and treatment systems are necessary for all but very low density residential developments.

Flooding may occur when sinkholes or passages and constrictions within the cavernous system become filled or plugged with sediment, collapsed rock material, trash and/or illegally dumped waste. Flooding potential is heightened by the increased volume of runoff resulting from urban development.

Any pollutant, including septic effluent, that is introduced into a sinkhole or bedrock crevice contaminates the subsurface drainage. Special regulations are needed in karst-sensitive areas to protect the health and welfare of the people in Monroe County. However, with 60 percent of the County potentially being a karst problem site, specific development plans must be assessed for karst impacts.

Disturbing the natural compaction of the soil by grading within sinkholes usually results in unstable fill. In time, this can lead to slumping and collapse. Repeated wetting and drying of these soils may cause either the reopening of a soil filled sinkhole or the development of a new sinkhole. Structural problems may occur with construction that is placed on disturbed soils of this type.

NATURAL RESOURCE MANAGEMENT

Limestone

Monroe County, with its large deposits of Salem Limestone, is one of the primary building stone sources in the United States. Limestone extraction, begun in 1828, is the oldest industry in the State. Becoming national in scope in 1854 with the arrival of the railroad, the limestone industry contributed to the early growth of Monroe County. Indiana limestone came into use in churches, government buildings and other major buildings throughout the country, such as the Empire State Building. The local mining industry is still healthy, employing approximately 700 workers.

Limestone Reserves

Limestone companies own approximately 20 percent of the land with deposits of commercial-quality dimension stone. While these holdings are expected to meet the demand for the foreseeable future, the use of Indiana limestone as a building product is not expected to end. Maintaining a reliable source of stone is a concern for the long term, well beyond the scope of this Plan.

Mining Operations

The demand for dimension limestone is cyclical. Many of the local quarries which appear to be abandoned are actually only idle and may start operating again. What appear to be new operations are generally extensions of existing quarries. Recently, one company began underground horizontal extraction operations.

The Plan recognizes the existing holdings and the mining and fabrication activities which will likely occur there. Current regulations do not distinguish this type of industrial use from other industrial uses. Special regulations are needed to protect these quarry sites from nearby incompatible development and to designate specific quarry-related industrial activities.

Agriculture

In Monroe County, agricultural land is devoted to a full spectrum of enterprises such as the production of horticultural and row crops, pasture, timber and many species of livestock. Monroe County farmers often supplement their livelihood with off-farm income. County residents highly value the rural atmosphere and scenic beauty which is, in part, provided by these farms.

Urban and industrial development is placing great pressure on agricultural land since much of it is also the best land for residential and other types of urban development. How to preserve an amount of land for agricultural use and at the same time accommodate the continued growth of residential and industrial development has become an important land use issue.

More strategies must be developed which address the conflicts between farm operations and the encroaching residential uses. Some conflicts arise due to technological changes in farming operations, which are normally expected in agricultural areas, but are perceived by the non-farm land user to be a nuisance. Many Monroe County farmers have demonstrated their sensitivity to protecting the environment by adopting new conservation practices, such as no-till farming and the use of integrated pest management. For agricultural uses to remain successful, there needs to be an opportunity to improve agricultural practices and operations for economic reasons and to adopt technological advances. Without an opportunity to farm, the farmer is limited in his ability to remain current and viable in the business.

Forestry

With over 53 percent of the land in Monroe County being wooded, forestry is an important land use and economic resource to area residents. In addition to timber production, these forests stabilize most of the highly erodible soils on Monroe County's steep slopes and provide the habitat for most of the County's wildlife. Scenic value and recreational opportunities are additional benefits to residents and visitors.

The major concern for forestry activities is to assure that timber production does not reduce the effectiveness of the forests to provide the other essential benefits. Historically, poorly planned and executed timber harvests, especially on private land, have caused extensive erosion problems and long term disruption to habitat. Modern forestry best management practices, like selective cutting and managed access, help to reduce the occurrence of such events. Forest production must be viewed in broader terms in order to realize the maximum benefit from this resource.

**MONROE COUNTY
COMPREHENSIVE
LAND USE PLAN**