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MANAGEMENT PLAN**

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PART I

EXECUTIVE SUMMARY

PURPOSE

The purpose of the 2020 Land Use Plan is to provide a public policy basis for making decisions regarding growth and development in the County.

EXECUTIVE SUMMARY

The 2020 Plan provides a general reference and framework for land use allocations in Madison County. It outlines how development should occur in a manner consistent with the stated County goals, objectives, and policies. It is intended that the 2020 plan will address the land use needs for a population of 299,509 which is the projected population for Madison County for the year 2020.

Madison County has prepared the 2020 Land Use Plan to be used as a guide for the future development of the County. The purpose of the Executive Summary is to present the Plan's findings and recommendations in a summary format. Additional Plan detail can be obtained by referencing the Plan document in Part II. Part III of the Plan provides an extensive analysis and description of existing conditions, issues, and the framework for planning. Parts I and II were developed based on the information contained in Part III.

For the purpose of comprehensive planning, Madison County is comprised of three distinct land use areas: American Bottoms Corridor, Bluffs Corridor, and the Rural/Agricultural Corridor. Different strategies and types of development are appropriate for each area and where appropriate, serve to reinforce historical land use patterns. These areas are described as follows:

American Bottoms Corridor

The American Bottoms Corridor is comprised of the municipal and undeveloped areas in the western third of Madison County and home to approximately 65,328 residents. In 1990, the American Bottoms Corridor encompassed 18 percent of the County's total acres. At the western edge of the American Bottoms Corridor is the Mississippi River, which flows



along the entire western length of the County. The municipalities along the Mississippi River have historically served as magnets for industrial and business uses. The largest municipalities in the County, Alton and Granite City, are located in the American Bottoms Corridor. The American Bottoms Corridor contains the largest concentration of employment and industrial development in Madison County, with substantial infrastructure investment, especially in transportation.

Land uses include mature residential neighborhoods, traditional downtowns, industrial areas, and arterial commercial developments. Of the three corridors, this region has the least amount of unincorporated land. The urban density is made possible by the sewer and water infrastructure of the river communities and the land use diversity is a result of historic development patterns in the American Bottoms. This area is the County's center for many of its employment and recreational opportunities such as Horseshoe Lake, the Gateway International Raceway and its adjoining development, Granite City Steel, Shell Oil Refinery, and much more, including

the 2700-acre Gateway Commerce Center Industrial Commercial Park.

Bluffs Corridor

The Bluffs Corridor includes the central region of Madison County. On the western edge is the American Bottoms Corridor, to the east is the expanse of the Rural/Agricultural Corridor. The Bluffs Corridor area has a unique development character — a blend of suburban and semi-rural residential development communities, open space, and farmland. It is a transition area from the more industrially developed urban region to the west and the farms and villages to the east. Approximately 121,019 people live in the Bluffs Corridor, which encompasses 22 percent of the County’s land but 47 percent of its population. This area offers a pleasant lifestyle with open space, scenic vistas, convenient transportation routes and proximity to shopping and other amenities. The desirability of the area is evidenced by countryside residential developments and the growing communities of Edwardsville, Glen Carbon, Maryville, Collinsville, Troy, Bethalto, Godfrey, East Alton and Wood River.

The Bluffs Corridor of Madison County is rapidly changing. It is the area where the county has experienced its greatest population increase over the past twenty years. There has been a shift of population from some of the older urbanized communities in the American Bottoms Corridor to communities in the Bluffs Corridor.

Rural/Agricultural Corridor

The Rural/Agricultural Corridor encompasses the eastern portion of Madison County. The Rural/Agricultural Corridor borders the County’s Bluffs Corridor area on the west and extends east to the Madison County line.

The Rural/Agricultural Corridor comprises 60 percent of the County’s 474,043 acres and is home to about 64,564 people. Agricultural uses are predominant with row crops and animal production. Moving east across the Rural/Agricultural Corridor the terrain changes from gently rolling land with scattered wooded areas to flat, fertile farmland. The wide farmland vistas give much of this area its rural character, and also offer residents and travelers a sense of quiet and tradition.

The communities in this area were established to provide support businesses and services to the growing number of farmers coming to the area. Some were located along railroad routes, providing easy transportation for manufactured goods and exporting agricultural products. The communities eventually grew to include opportunities for social activities, housing, and employment, with each community developing a unique community identity. The Rural/Agricultural Corridor, will experience the fewest changes over the next 20 years

PLAN GOALS

Guidance for the Plan was established through the development of the following goals. The Plan pursues these goals by presenting objective policies and implementation actions designed to guide future development of the County. Objectives and policies are presented in each “Planning Issue” discussion in the Plan report.

- 1. Agriculture Preservation.** Prevent the premature conversion of agricultural lands for other development related land uses in the Rural Agricultural Corridor and selected locations within the American Bottoms Urban and Bluffs Corridors.

2. **Employment.** Strengthen and expand Madison County’s position as an economically diversified County.
3. **Environmental Considerations.** Plan and guide development that results in an attractive and healthful total environment, both natural and man-made.
4. **Housing.** Ensure that housing of all sizes, types, and prices are available to County residents.
5. **Managed/Sensible Growth.** Adopt an approach to development that promotes economic development while preserving open space, minimizing the need for costly new infrastructure and improving the viability of communities.
6. **Natural Resources.** Incorporate the concepts of conservation and wise use of the soil, air, water resources and the natural environment of Madison County into all development decisions.
7. **Open Space and Recreation.** Protect, maintain and enhance the visual character and recreational opportunities of Madison County.
8. **Transportation.** Provide safe, efficient transportation systems that serve to guide future development and that are compatible with existing land use.

2020 Plan And Recommendations

The following represents a summary of the Plan and recommendations found in Part II.

AMERICAN BOTTOMS CORRIDOR PLAN

The majority of new industrial development in Madison County will occur within the American Bottoms Corridor because of the substantial existing infrastructure and available tracts of land suitable for large-scale development. The 2020 Plan emphasizes and supports these development activities. Open space protection, enhancement, and acquisition within the American Bottoms Corridor remain important. Large open spaces, such as Horseshoe Lake Recreational Area, should be protected and enhanced. Acquisition of linkages from the Horseshoe Lake State Recreation Area to the Cahokia Mounds State Historic Site can further the implementation of the Southwestern Illinois Greenway Plan and protect important wildlife habitat. Countywide planning efforts should continue to support the downtowns of the American Bottoms Corridor municipalities. Strong, viable downtowns provide multiple benefits of reducing non-managed growth and the premature conversion of Agricultural lands to other uses.

Strong residential neighborhoods are necessary in the municipalities in the American Bottoms Corridor. The infilling and maintenance of residential areas within municipalities is recommended to preserve these communities as desirable places to live. Maintaining residential areas will reduce the relocation of people to newer developing areas by offering quality housing in stable neighborhoods. This also helps reduce the premature conversion of agricultural lands outside of the community. The 2020 Plan proposes infill development within municipal boundaries that takes advantage of the substantial infrastructure investments already made. In supporting the municipalities in the American Bottoms Corridor, the 2020 Plan serves to help contain suburban non-managed growth.

Land Use Proposals

The land use proposals utilize the 2020 Plan's land use strategy elements and also incorporate municipal land use plan proposals, as well as the Southwestern Illinois Greenway Plan and the Madison County Long-Range Transportation Plan.

Commercial/Industrial

Corridor areas which are emphasized for growth reflect the existence of three Enterprise Zones: 1. The Southwestern Madison County Enterprise Zone; 2. The Gateway Commerce Center Enterprise Zone; and 3. The Riverbend Enterprise Zone. It is anticipated that the enterprise zones and industrial parks will attract the majority of industrial/commercial development within the planning period.

Residential

In accordance with the land use strategy elements, most development is proposed adjacent to existing municipalities where it can be served by existing infrastructure. The Plan does not propose any medium or high-density residential sites in unincorporated areas that are not in municipal plans. Those residential developments should be located within municipalities or within the planning jurisdiction areas of municipalities where a comprehensive plan and official map have been adopted by the municipality and where adequate infrastructure and social and economic services exist to support the population.

Open Space/Greenways, and Recreation, Transportation

The land uses proposed in this category reflect the bicycle and pedestrian trails proposals of the Madison County Long-Range

Transportation Plan plus the recommendations of the Southwestern Illinois Greenway Plan as shown separately. Areas of wetlands should be retained in order to provide for surface drainage in the future.

Summary Of American Bottoms Corridor Recommendations

- Form planning partnerships with existing municipalities to coordinate planning, zoning and subdivision regulations, especially in the area within 1-1/2 miles of municipal boundaries.
- Form development partnerships with existing municipalities to promote the development of the American Bottoms Corridor including its three Enterprise Zones.
- Emphasize industrial growth and development within this corridor, and zone the area accordingly, with buffers for other uses.
- Change the zoning classification of all property presently zoned as manufacturing, but being used for agriculture, to agricultural zoning. Provided, however, that the change is consistent with the proposed classification on the 2020 Land Use Plan Map.
- Strongly encourage, through the use of planning partnerships, the municipal adoption of storm water standards that are consistent with County standards.
- Establish a comprehensive storm water management system in the American Bottoms that includes major facility improvements such as channel

upgrades, sedimentation basins, and wetlands development.

- Do not approve subdivision development of six (6) or more lots unless it is served by a municipal waste water system or a common sewage collection system with an IEPA approved on-site treatment plant that serves the entire subdivision.
- Restrict the installation of new individual private sewage disposal systems that discharge effluent on the ground surface.
- Protect wetlands by avoiding the destruction of wetlands, forming a “wetlands bank” to develop new wetlands, and uniformly adopting a wetlands ordinance.
- Link Horseshoe Lake Recreation Area and the Cahokia Mounds State Historic Site.
- Establish an agricultural preservation goal for this corridor to preserve the ability to produce specialty Madison County crops such as horseradish, sweet corn and related crops.
- Direct sewer system improvements to urbanized residential areas presently un-sewered including the State Park Place, Cloverleaf and Eagle Park neighborhoods.
- Implement the recommendations of the Long-Range Transportation Plan and the Southwestern Illinois Greenway Plan.

BLUFFS CORRIDOR PLAN

The 2020 Plan recognizes that it is crucial for the municipalities and the County to manage growth in the Bluffs Corridor while protecting the environment. Much of the Bluffs Corridor will develop under the influence of the municipalities. This area will be the County’s litmus test — where the County and municipalities either surrender to conventional suburban sprawl or make a stand for managed growth. The elements of the Bluffs Corridor strategy call for preservation of open space in new development, coordination of transportation and land use, community character enhancement, balanced land use, and water resource management. Open space set aside is a high priority in the Bluffs Corridor to provide “breathing space”, environmental protection, recreational areas, visual beauty, educational opportunities, and other community benefits. A key to enhancement and protection of water quality in the Bluffs Corridor is minimizing the amount of impervious surface in new developments. This can be done without sacrificing quality development and must be done to reduce hillside drainage affecting the American Bottoms.

The enhancement of community character in the Bluffs Corridor can be achieved through development design techniques such as prairie traditional, open space design and Planned Unit Developments. Madison County and the municipalities must wisely manage the Bluffs Corridor. The edges of this area provide visual evidence of land use and density changes between this area and the American Bottoms Corridor to the west and the Rural/Agricultural Corridor to the east. It will be essential that the eastern edge of the Bluffs Corridor remain well defined to provide adequate agricultural land use preservation.

Land Use Proposals

The land use proposals for the Bluffs Corridor reflect the elements of the land use strategy, the historic land use of this area, municipal land use plans, the Madison County Long-Range Transportation Plan and the Southwestern Illinois Greenway Plan. Accordingly this Corridor reflects a significant conversion of agricultural and non-agricultural land to residential uses. Supportive and appropriate commercial and industrial expansion is proposed principally in proximity of the interstate highway system or principal highways.

Residential

The municipalities within the Bluffs Corridor are projecting aggressive residential growth in the areas within one and one-half miles of municipal boundaries. In addition, the extension of new Highway IL-255 into Wood River, Foster, and Godfrey Townships will create new housing pressures in these areas that have attractive topography and will have its accessibility to the metropolitan area greatly enhanced by the completion of the highway.

Commercial

The majority of commercial development in this Corridor is currently within municipalities and the majority of future growth should be located within municipalities and the I-55/70-Corridor. Lands adjacent to that portion of I-55/70 between I-70 East and U.S. Route 40 are expected to continue to develop commercially. It is anticipated that with the extension of IL-255 into the northern portion of the County, planned commercial developments will occur near and around the municipalities of Bethalto and Godfrey.

Industrial

Industrial proposals in this Corridor primarily reflect proposals of the municipal land use plans. There are limited industrial land uses within this Corridor with existing uses primarily within municipalities. Proposals for increased industrial land uses are in proximity to I-55/70 from Troy to Edwardsville.

Open Space/Greenways, and Recreation, Transportation

The land use proposals within this land use category reflect the bike trail proposals in the Madison County Long-Range Transportation Plan, plus the recommendations of the Southwestern Illinois Greenway Plan and municipal plans where appropriate.

Agriculture

Agriculture will remain a very large land use for the planning period but its future within this Corridor will be one of conversion to other uses. It is within this Corridor that critical decisions will have to be made concerning agricultural preservation.

Summary Of Bluffs Corridor Recommendations

- Form planning partnerships with municipalities to coordinate planning, zoning and subdivision regulations, especially in the area within 1-1/2 miles of municipal boundaries.
- Adopt a Storm Water, Soil Erosion and Sedimentation Control Ordinance and work to have all Bluff communities adopt the same standards.

- Apply open space designs standards in the residential zoning districts in order to promote open space.
- Work with communities to create “green buffers” between Bluff communities to maintain community identities, and to contain suburban non-managed growth.
- Select a minor watershed (sub watershed) within this corridor as the first watershed demonstration project.
- Recommend that areas within 1 1/2 miles of municipal boundaries be amended into existing municipal plans and then zone them in cooperation with the municipality. If the areas are not included in a current adopted municipal plan the County should zone the areas to a restricted holding zone.
- Require all subdivision development of six (6) lots or more to connect to a public wastewater system or a common sewage collection system with an IEPA approved on-site treatment plant that serves the entire subdivision.
- Restrict the installation of new individual private sewage disposal systems that discharge effluent on the ground surface.
- Protect wetlands by avoiding the destruction of wetlands, forming a “wetlands bank” to develop new wetlands, and uniformly adopting a wetlands ordinance.
- Strengthen the historic development pattern at this corridor by emphasizing its residential and suburban character with planning, zoning, and Planning Partnership agreements.
- Do not zone for any densities above single-family residential unless the zone district is consistent with a municipal plan.
- Direct sewer system improvements to urbanized residential areas presently not served by a public or community sewage treatment system.
- Prepare and adopt interstate interchange plans before the land around the interchanges is developed, including plans for land around proposed interchanges from the IL-255 extension and future interchanges including one at I-270 and Old Troy Road.

RURAL/AGRICULTURAL CORRIDOR PLAN

The Rural/Agricultural Corridor will change the least between now and the year 2020 in comparison to the American Bottoms Corridor and Bluffs Corridor areas. This is appropriate because the eastern half of Madison County contains most of the farmland in Madison County. The 2020 Plan does provide opportunities in this Corridor to accommodate urban development to the year 2020. Further, the County supports logical planned growth for the communities. In most of this area, the County should discourage growth that is not served by infrastructure, including public water and sewer systems. Development should be steered towards existing communities and subdivisions, thus avoiding the “pop-up subdivisions” that suddenly appear in the countryside. Part of this planning strategy is to identify and encourage protection of the four existing land use patterns in the Rural/Agricultural Corridor:

- Farming, including agricultural infrastructure, agricultural industry, and farmsteads.
- Towns and villages which support and enhance agriculture.
- Countryside residential, where limited single-family development will be encouraged on non-prime farmland or adjacent to existing residential uses.
- Individual and farm family residential development where appropriate, such as new residences for farm family members engaged in agriculture and sites not suitable for agricultural production.

The 2020 Land Use Strategy reinforces the premise that agriculture in Madison County should not simply be considered a holding zone waiting for market pressures to dictate development. Unplanned development eventually pushes out farming as well as subsidiary industries, equipment sales, greenhouses and nurseries and sod farms. The 2020 Plan recognizes that the towns and villages of the Rural/Agricultural Corridor are still centers of local services and social activities.

Land Use Proposals

The land use proposals for this Corridor reflect the Corridor’s historical use as an intensive agricultural area supported by towns and villages. This Corridor is primarily agricultural and is expected to remain throughout the planning period. Conversions of agricultural land will occur, but if guided to areas designated, the impact on the agricultural economy will be minor. Scattered individual residential growth and residential subdivisions that appear to “pop up” in farm fields are specifically discouraged.

Residential

Residential growth is projected primarily in areas designated by municipal plans. Most of the smaller municipalities in this Corridor have adequate vacant land within their borders to accommodate growth. Therefore, little or no residential development areas are shown outside those municipal boundaries. Existing settlements are shown and rural residential development that is not within or adjacent to a municipality should be encouraged to locate in these settlements. When large lot developments, referred to as “Country Subdivisions”, are proposed, they should be permitted on land not suitable for agriculture relating to productivity, topography, vegetation, man-made barriers, etc.

Commercial

The majority of commercial development in this Corridor is located within municipalities, with the exception of some agri-business activities, cross-roads commercial activities and commercial developments extending along highways that serve the municipalities and at interstate interchanges.

Industrial

The primary industry in this Corridor is agriculture. Industrial developments do exist in the area of Highland, but there is little industrial activity in the villages within this Corridor. The possibility of industrial development exists at Shafer Metro-East Airport west of Highland and at selected major intersections and interchanges. No extensive industrial areas are projected for this Corridor within the planning period.

Open Space/Greenways and Recreation Transportation

The dominance of agricultural lands in this Corridor results in a low corridor priority for open space during the planning period. The trails and greenways proposals of the Madison County Long-Range Transportation Plan and the Southwestern Illinois Greenway Plan are recommended for consideration as opportunities arise.

Summary Of Rural/Agricultural Corridor Recommendations

- Support the growth of municipalities in this corridor as the preferred areas to receive development.
- Prepare Interchange Area Plans for all interchanges projected to receive commercial development.
- Establish a goal for the permanent retention of land within this corridor to remain in agricultural production.
- Adopt a Storm Water, Soil Erosion and Sedimentation Control Ordinance and work to have all Rural/Agricultural communities adopt the same standards.
- Require all subdivision development of six (6) lots or more to connect to a public wastewater system or a common sewage collection system with an IEPA approved on-site treatment plant that serves the entire subdivision.
- Restrict the installation of new individual private sewage disposal systems that discharge effluent on the ground surface.
- Adopt large lot zoning, with a minimum of 40 acres in agricultural

zones to limit sprawl subdivisions. Create a new “Country Subdivision” agricultural zoning classification that permits the development of single family dwellings on large lots not suitable for agriculture such as wooded areas and adjacent to steep topographical land features.

- Protect wetlands by avoiding the destruction of wetlands, forming a “wetlands bank” to develop new wetlands, and uniformly adopting a wetlands ordinance.

COUNTYWIDE PLAN RECOMMENDATIONS

The 2020 Land Use Plan is focused on the County’s efforts and needs to manage the land and resources within its borders to maintain and improve the quality of life for all County residents. The management of any asset for any purpose involves choices. Those choices involve costs, methods, timing and results desired. The recommendations for implementing the Plan involve those same variables. The County should also consider the choices and application of specific tools to use in its management efforts. The Plan identifies and recommends the application of both methods and planning tools the County should consider in that management effort.

County-Municipal Cooperation

An important recommendation in the Plan is for County-Municipal cooperation in the form of planning partnership areas. Areas of cooperation include, but are not limited to:

1. The mile and one-half area around municipalities where the County and municipality have statutory planning and enforcement rights.

2. Watershed planning.
3. Transportation planning.
4. Greenways, trails and large recreation facilities.

To initiate a process for cooperation with municipalities, the County will select a limited objective in one or more of the four preceding areas, select a geographic area where an opportunity or problem exists and work with a municipality(s) involved to form a planning partnership or joint-study task force.

Planning Capability

It is recommended that Madison County develop an “in-house” planning capability. The County will continue to urbanize and development issues will increase in complexity.

Development Regulations Review

It is recommended that the County begin an in-depth review and revision of the regulations now in use, specifically the County Zoning and Subdivision Regulations.

Storm Water/Watersheds

It is recommended the County adopt standards equal to or greater than those contained in “A Model Ordinance Providing For the Control of Storm Water Drainage and Detention, Soil Erosion and Sedimentation Control” (SIMAPC 1997), in addition to a storm water impact fee.

It is recommended the County initiate a watershed planning program utilizing the Illinois Environmental Protection Agency “Watershed Program” in concept with a planning partnership that contains all “bluffs” municipalities.

The St. Louis District of the Corps of Engineers is preparing proposed measures to provide interior flood control and ecosystem restoration for East St. Louis and vicinity, Madison and St. Clair Counties, Illinois. The interior drainage system currently does not have sufficient capacity to handle local and upland runoff from rainfall events greater than 5-year storms, and sediment from upland tributaries not only reduces the channel capacity of the drainage system but also causes environmental degradation. The purpose of the reevaluation study is to investigate measures that blend flood control with ecosystem restoration. The County should evaluate the findings of the study and supports its measures that it deems beneficial.

The County should also work with other units of local government in developing a strategy in upgrading storm water drainage facilities in the bottoms that have become overtaxed from increased runoff and sedimentation from the bluff areas. A mechanism should also be developed to assign maintenance responsibility of drainage facilities.

Sanitary Sewers And Public Water Supply

It is recommended that a coordinated effort between the County, municipalities and Facility Planning Areas (FPA’s) take place to promote the extension of facilities to areas presently not serviced by public water and sewer. In addition, FPA’s should be encouraged to upgrade facilities to service new growth proposed in the 2020 Land Use Plan.

Residential Development Locations

The creation of residential zoning districts consistent with municipal land use plans that places residential districts next to municipal boundaries where infrastructure is available is specifically recommended.

In rural areas, the creation of agricultural districts with very large lot requirements up to 40 acres is one concept that is recommended.

It is recognized, however, that there are demands and pressures for large lot residential development in rural areas. Creating a new “Country Subdivision” zoning classification for large lot development would allow for limited rural development in locations that are not considered prime. These subdivisions should be developed to a high standard and include adequate public facilities to serve its residents. Included is a requirement for public water, street construction and design meeting the minimum standards in the County’s Subdivision Control Ordinance, and adequate sewage disposal. Any subdivision of six lots or greater should be served by a common sewage collection system with secondary effluent treatment approved by the Illinois Environmental Protection Agency.

The creation of density and other incentives, such as simplified Planned Unit Development procedures, in conjunction with open space design or other design features is recommended.

County and municipal development regulations must make development more economically attractive and rewarding if most new development is to actually locate adjacent to municipalities and their existing infrastructure.

It is recommended the County initiate a discussion concerning a future land percentage that would be maintained in agriculture production. This recommendation presupposes that a balanced future, land use pattern is desired and necessary for a high quality of life for County residents.

Commercial Development

The commercial land use proposals of the Plan primarily reflect existing land use patterns, municipal plan proposals and optimal location consideration in relation to interstate and major highways. The implementation of these land use proposals can best be encouraged through appropriate zoning and subdivision regulations.

Provisions within the current County Zoning Ordinance should be reviewed to encourage more planned commercial and office parks through the use of planned districts and signage incentives, flexible multi-use parking standards and related uses.

Agriculture

Plan proposals for the retention of agricultural lands to support a strong agricultural economy, to prevent the premature conversion of agricultural land, and to allow appropriate residential and agricultural business uses are supported.

It is recommended that the County implement actions to reduce non-managed growth in agricultural areas, including very large lot zoning, and the implementation of planning partnerships that result in land use and development regulation agreements with municipalities. Agricultural preservation methods identified in the agricultural planning issue discussion.

Limited residential development will occur in agricultural areas but should occur on non-prime agricultural lands and to respond to the housing needs of those engaged in agriculture are also encouraged.

Industrial

Madison County long ago realized the advantages the County has for industrial development.

New industrial development should be guided to the areas designated on the Land Use Plan, through the use of zoning, infrastructure extensions, wetlands banking, incentives and Planning Partnership Agenda.

Environmentally sensitive areas such as flood plains and wetlands should be avoided for this type of development.

Within the enterprise zones appropriate zoning should continue to be reviewed and rezoning should occur for lands so designated on the Plan.

The County is encouraged to consider “economic development” as an important component of its Planning Partnership Agenda.

Open Space/Recreation/Greenways

Madison County, due to the efforts of Madison County Transit (MCT), Southern Illinois University - Edwardsville (SIU-E), City of Edwardsville, Village of Glen Carbon, and the Illinois Department of Natural Resources (IDNR), is the leader in providing recreational transportation options in the region. Through the creation of a bicycle transit network, the County is preserving open space and greenways, i.e. linear open space preserved for recreation, resource management or aesthetic benefits. A network of about 100-miles of bikeways, interconnected with transit stops and areas of interest is currently under development.

In July 1999, legislation was approved by the Missouri and Illinois General Assemblies that authorized, subject to voter approval, the

creation of separate metropolitan park and recreation districts whose purpose would be to improve water quality, increase park safety, and provide community trails. The two districts would be linked together by an inter-governmental agreement to ensure the coordination of planning and development of the overall system of parks and trails which could extend to St. Louis City and all eleven counties in the region, five in Illinois and six in Missouri.

Transportation

Madison County in cooperation with the Madison County Transit District commissioned a separate Long-Range Transportation Plan that extensively addresses all forms of transportation within the County. Some of the high-lights of the Plan include support for the construction of a new Mississippi River bridge; support for the future extension of MetroLink within Madison County; and the completion of major road projects funded through Illinois First including the IL-255 extension and the widening of Illinois Routes 157 and 159. As a result, the Transportation Plan discusses proposals and recommends implementation actions that are detailed and beyond the scope of this Plan.

SUMMARY

The recommendation and implementation actions of this Plan are substantive and intended to assist the County take the next steps in land management and quality of life discussions. As such, the proposals are intended as a beginning that will encourage discussion and activities to maintain and enhance the quality of Madison County’s future. Parts’ II and III of the Plan document contain a more detailed presentation of concepts, strategy, background information and recommendations.

PART II
2020 LAND RESOURCE
MANAGEMENT PLAN
PROPOSED LAND USE DESCRIPTIONS
LAND USE STRATEGY
PROPOSED LAND USE
IMPLEMENTATION/RECOMMENDATIONS

PURPOSE

The purpose of the 2020 Land Resource Management Plan is to provide a public policy basis for making decisions regarding growth and development in the County.

2020 LAND USE PLAN

The purpose of the 2020 Land Use and Resource Management Plan is to provide a public policy basis for making decisions regarding growth and development in the County. The number, size, and complexity of land use proposals on which the County Board has been asked to render decisions are increasing and will continue. There is every indication that the growth of this activity will continue into the 21st century unless there are changes in major national economic trends. The 2020 Plan provides public officials with guidance in making decisions on development proposals and countywide coordination of growth.

The 2020 Plan provides a general reference and framework for land use allocations in Madison County. It outlines how development should occur in a manner consistent with the stated County goals, objectives, and policies. Because the 2020 Plan addresses issues on a countywide scale, there are localized areas and issues that require more detailed analysis. Detailed analysis of specific areas may lead to a land use different than that indicated on the 2020 Future Land Use Map. Any localized departures from the land use map should be reviewed in the context of the goals, objectives, and policies of the 2020 Plan.

The 2020 Plan is a living statement of public policy. The 2020 Plan should be reviewed every five years, with citizen input, in light of changing demographics, changes in state or federal policies, major infrastructure improvements, major shifts in the regional employment base, public policy decisions, and economic and employment activities. At that time the 2020 Plan will be revised as appropriate and as directed by the elected officials of Madison County.



The 2020 Land Use Map is Plate 1. Descriptions of the Land Use. The 2020 Land Use Map reflects existing land use, development trends and the goals, objectives and policies expressed in this Plan. The 2020 land uses designated on the map will more than meet the land use needs of a population of 299,509 which is the projected population for Madison County for the year 2020.

Existing Open Space/ Recreation/Conservation

Open space as used in this context includes recreation and conservation areas. This category reflects existing ownership of larger properties, generally over ten acres in size, by public and private bodies. These existing areas provide a framework for the provision of additional open space, recreation and conservation areas through linkages and expansions.

The open space areas relate directly to the various functions of open space previously discussed in the plan. They range in size and function from small playgrounds, providing active recreational opportunities, to several hundred-acre areas, offering wildlife habitats, natural area protection, and passive recreational pursuits.

Also included are private and institutional land holdings. Although these areas may or may not be generally accessible to the public, they do provide a number of recreational and open space functions and the plan recommends connecting them to other open space areas when feasible.

These lands include trails and greenways, major state recreation facilities, large parks — areas that provide visual open space and community separation, preserve important woodlands and wetlands, protect critical wildlife habitats, and also provide important scientific, cultural and educational opportunities to the citizens of Madison County.

Examples of some of the existing facilities included are Horseshoe Lake State Recreation Area, Lewis and Clark Historic Site, Cahokia Mounds State Historic Site, Belk Park and Southern Illinois University Campus at Edwardsville.

This category includes areas recommended for both public and private open space uses. The provision of additional open space is considered an important part of the County's planning program. The areas indicated could become either major additions to existing public open space or serve as linear connections trails or storm water corridors between larger areas of open space. Areas along and adjacent to some of the existing open space lands are indicated as being included in the countywide open space system.

The remaining wetlands in the County are an important element of the open space system. Often wetlands have been looked upon as unsightly and having no value unless drained. In more recent years, it has been recognized that wetlands provide important wildlife habitat, water recharge and pollution cleansing

functions. These functions will become increasingly important as populations increase and development occurs. Therefore, it is recommended that the most of the County's wetlands that remain be protected.

The Plan recognizes there are limitations to the ability of public agencies to acquire all of the areas that might be suitable for open space uses. It is recommended that those lands be preserved as homeowner association lands, as conservation easements, or if appropriate, as private open space. The areas indicated as important open space linkages, especially in the rural areas, often have development limitations, such as flooding or poor soils, so these lands can often be preserved if development occurs. For those portions of the eastern townships which will remain predominantly in agricultural use to the year 2020, the recommended open space may not be implemented until development becomes more appropriate.

The 2020 Future Land Use Map indicates areas for potential future open space in the form of large tracts, linear greenways, and recreational areas. While the areas indicated are an increase in the County's existing open space it is not intended to limit the locations or amount of open space that could be achieved by the year 2020. This proposed open space armature can easily be expanded as additional natural, recreational or water resource management sites and connecting greenways become available.

Agriculture

The agricultural category applies to extensive areas on the 2020 Plan. These areas contain productive farmland. Also, some of the land in the agricultural category is used for farmsteads, very low density residential uses and agricultural-related business and industry.

A major strategy of the County's objectives, policies, and Land Use Plan Map is to prevent the premature conversion of farmland to non-agricultural uses. However, the plan recognizes that some of the land in these areas is not well-suited for agriculture because of soil productivity, topography, vegetation, man-made barriers, etc., and therefore, could be more suitable for other purposes. The plan also recognizes that many farmers and agricultural land owners may wish to create a lot or erect a dwelling unit for a child, dependent, or relative on a portion of their land which is indicated as agricultural.

With respect to these types of situations and where clear and convincing evidence is provided, Madison County policy is that individual residential land uses are appropriate after it has been determined that the property is adequately suited for the intended use; that the soils are suitable for wastewater disposal; that the use will not impair the drainage of surface or sub-surface water; that access will not create dangerous traffic conditions or congestion; that the use will not be injurious to the use and enjoyment of other property or diminish property values in the area; and that the use will not interfere with normal agricultural practices on adjoining lands.

This category also provides for agribusiness, farm support services, and other related uses that are dependent upon, or closely allied to, modern agricultural practices. Madison County recognizes that prime farmland can be best utilized as agricultural land when it is supported by a full range of agribusiness and farm services in the immediate area. Any proposed uses of this nature would be evaluated by the same criteria listed in the preceding paragraph.



Low Density Residential

These areas are often adjacent to existing low density residential areas or may already have a limited degree of scattered development. These areas generally contain three or less dwellings per acre.

The plan recommends that the character, wildlife base, and natural features of these areas be preserved by establishing low density criteria for future developments. The density of development should be determined by the area's physical characteristics and, where applicable, the suitability of the soils to accommodate individual wastewater disposal systems.

Rural residential areas adjacent to small communities are included in this category to encourage an infill strategy between and adjacent to existing rural residential development generally where prime agricultural lands will not be taken out of production

Densities of new proposed subdivisions in the areas planned for rural residential development should be based on prevailing standards and regulations, surrounding densities, soil suitability for septic systems, preservation of natural features, and the character of the area.

Open space design requirements are recommended for these areas.

Urban Residential

The Urban Residential category refers to densities of development equal to or greater than four dwellings units per acre that specifically should receive the provision of municipal-type facilities and services.

Urban residential designations on the 2020 Plan Map in large part reflect the proposed or adopted land use plans of municipalities or the character of residential areas adjacent to municipalities. This category also includes areas adjacent to existing development or settlements that have public water and sewer systems. Specific areas for multiple family (commonly called high density residential) are not excluded from this category, but are not shown separately. The majority of multiple family developments should only occur where public infrastructure is accessible and that occurs primarily in municipalities. Multi-family developments not within municipalities or designated within the planning jurisdiction of municipalities should be discouraged. Once annexation and extension of utilities have occurred, the municipalities can provide diverse housing opportunities in well-designed neighborhoods.

Commercial

This general land use is divided into two areas, Highway Commercial, and General Commercial Development. Many areas designated for commercial development are based primarily on municipal plans. The County recognizes the importance of balancing future residential and population growth with the generation of additional



employment opportunities. Most of the areas recommended for commercial land uses are along major county or municipal highways and streets and are close to concentrations of population. Control of access points and requirement of aesthetic design criteria will be critical concerns in order to prevent inefficient traffic patterns and unsightly strip commercial development. The County's management of these land uses will need to be carefully coordinated with the municipalities. It is anticipated that much of this kind of development will occur only as the properties are annexed and provided with municipal services.

Highway Commercial

This is a limited land use category specifically used to identify commercial activities that serve the market provided by the transportation corridor, not just the surrounding population. In most instances there is a mix of markets but the primary market is that of the transportation corridor. Interstate interchange areas are a prime example of this land use.

General Commercial Development

This land use category is used to denote a variety of commercial development possibilities. Depending on the specific location, they may include urban arteries, individual businesses, professional office parks, malls, agri-business uses or areas that are primarily commercial but may contain some warehousing or other uses.

Industrial, Light Industrial, Warehousing

(Includes related office facilities and similar large facilities)

The development of land uses in this category generally should occur on large parcels as industrial parks or light industrial centers. Some industrial land uses are “heavy” in nature, others secondary manufacturing, warehousing, distribution, and light industrial uses. Once again, it is recommended that most of these uses be permitted only when they are in developments that are coordinated with transportation facilities and where water and sewer systems are available, since these land uses generally require a high level of utility service and generate considerable traffic volumes.

Development of these types of land uses will ensure the traditional employment base of Madison County and provide an adequate tax base for the general public. These land uses may also be developed as businesses utilizing high technology.

Institutional

This land use category includes governmental uses and institutional holdings such as Southern Illinois University at Edwardsville.



This category also represents the incorporated municipalities in Madison County. These communities contain infrastructure, higher densities, mixed land uses and commercial and employment centers. They provide a number of services to their residents including fire and police protection and public water and sewer service.

2020 MADISON COUNTY LAND USE STRATEGY

The 2020 Plan will maintain Madison County’s unique sense of place — a blend of river towns, bluffs communities and rural villages, cultural amenities, and farm fields. As the County moves into the 21st century, the combination of employment opportunities, quality neighborhoods, and natural beauty will continue to attract new residents and business interests. The Conceptual Land Use Strategy serves as the foundation for the 2020 Plan, calling for a balance between natural resource protection and community development. The Conceptual Land Use Strategy identified three distinct land use areas and emphasizes a need for open space protection, water resource management, balanced community development, coordination of transportation improvements with land use management, protection of agriculture, and a cooperative planning process with the municipalities.

Designed to achieve balanced growth in Madison County, the 2020 Plan is the alternative to uncoordinated development which results in suburban sprawl. The success of the Plan rests on the land use strategy of three distinct land use areas based on the County's historical land use pattern. These are, from west to east: the American Bottoms Corridor, the Bluffs Corridor, and the Rural/Agricultural Corridor. The American Bottoms Corridor includes the municipal and developed land uses along the Mississippi River. The Bluffs Corridor includes central bluff areas of the County adjacent to the American Bottoms with a mixture of residential, farmland, and growing communities. The Rural/Agricultural Corridor is the remaining eastern portion of the County characterized by productive farms, small villages and the City of Highland. Each land use strategy area is unique and requires a distinct approach to land resource management.

The three corridor areas delineated by the Land Use Strategy require individualized approaches to land use management. The planning approach for each area is defined by elements relating to open space, transportation, community character, land use, water resources, and related subjects. These elements provide a blueprint for the County and municipalities to guide resource management within the corridors described in this section.

AMERICAN BOTTOMS CORRIDOR

The American Bottoms Corridor is comprised of the municipal and undeveloped areas in the western third of Madison County. The American Bottoms Corridor covers the area from the Mississippi River east to the bluff line, providing a visible transition to the Bluff



Corridor. Home to almost 65,328 residents, the American Bottoms Corridor encompasses 18 percent of the County's total acres.

At the western edge of the American Bottoms Corridor is the Mississippi River which flows along its entire length. The municipalities along the Mississippi River have historically served as magnets for industrial and business uses. The American Bottoms Corridor includes the industrial employment corridors of the American Bottoms. The largest municipalities in the County—Alton and Granite City—are located in the American Bottoms Corridor. The American Bottoms Corridor contains the largest concentration of employment and industrial development in Madison County, and substantial infrastructure investment, especially in transportation. Major employers include Shell Oil, Olin, and National Steel. The American Bottoms contains a 2700-acre enterprise zone which is expected to further develop and strengthen Madison County's historic industrial and commercial base.

Many of Madison County's recreational opportunities are located in the American Bottoms Corridor, including the Gateway International Raceway, Horseshoe Lake Recreational Area, Lewis and Clark Historic

Site. The campus of Southwestern Illinois College-Granite City is also in this corridor. Economic and social changes that have affected the physical development of the American Bottoms Corridor are evidenced by the wide variety of mixed land uses and distinct differences in neighborhood and community character.

As the types of industries and businesses in the American Bottoms Corridor have changed in response to changing markets and technologies, their relationship to adjacent neighborhoods and commercial districts has also changed. Changes in social patterns such as employment, family size and makeup, desired housing size, and averages travel distances to work and shopping have affected downtowns and existing neighborhoods as well as influenced the type and locations of new development. Historically, the American Bottoms Corridor's strength has been its ability to adjust to the changing economic environment.

The 2020 Plan recognizes that municipal planning and development in the American Bottoms Corridor will be required to maintain residential neighborhoods and expanded public services. Municipally developed commercial and industrial land uses provide employment opportunities and a diversified tax base. The municipalities in the American Bottoms Corridor will continue to be the centers for industrial employment development and redevelopment.

The majority of new industrial development in Madison County will occur within the American Bottoms Corridor because of the substantial existing infrastructure and available large tracts of land suitable for large scale development. The 2020 Plan emphasizes and supports these development activities. The Land Use Strategy Elements sets a course of

action that will maintain and enhance the American Bottoms Corridor. These elements relate not only to individual communities, but also to the character and well-being of all Madison County.

Open space protection, enhancement, and acquisition within the American Bottoms Corridor remain important. Large, open spaces, such as Horseshoe Lake Recreational Area, should be protected and enhanced.

Acquisition of linkages from the Horseshoe Lake State Recreation Area to the Cahokia Mounds State Historic Site can further the implementation of the Southwestern Illinois Greenway Plan and protect important wildlife habitat. Neighborhood parks should be enhanced and expanded to meet the needs of surrounding residents.

Successful downtown revitalization initiatives by municipalities in the American Bottoms Corridor incorporate programs and incentives for new and diversified commercial uses, business and professional services, public institutions, and residential opportunities. The County will continue to encourage and support these important efforts. Historically and architecturally important buildings shape and define a downtown's character as well as give testament to its history, and should be protected and rehabilitated. Countywide planning efforts should continue to support the downtowns of the American Bottoms Corridor municipalities. Strong, viable downtowns provide multiple benefits of reducing sprawl, and the premature conversion of agricultural lands to other uses.

Strong residential neighborhoods are necessary in the municipalities in the American Bottoms Corridor. Vibrant neighborhoods and neighborhood rehabilitation are crucial for community stability and serve to meet the

growing need for diverse housing opportunities. The proximity and easy accessibility of neighborhoods to downtowns by a variety of transportation choices provides a market for goods and services. The development of these neighborhoods over time has resulted in a wide variety of housing types, sizes, architectural styles, lot sizes, and local commercial districts. Preservation and rehabilitation of historic neighborhoods retain the unique character of municipalities and can attract people desiring the conveniences of a city and a strong sense of community. The infilling of residential areas within municipalities also reduces the tendency of sprawl and the premature conversion of agricultural lands to other uses.

Municipalities in the American Bottoms Corridor have recognized the potential for infill development within the American Bottoms Corridor. The 2020 Plan supports infill development within municipal boundaries that takes advantage of the substantial infrastructure investments already made. Common sense dictates that tax dollars be spent in utilizing existing infrastructure rather than unnecessarily duplicating it into the countryside. Large and small tracts of undeveloped land still exist within municipal boundaries with access to existing transportation systems as well as municipal utilities and services. Infill development should reflect the historic pattern of mixed uses in the American Bottoms Corridor. Land uses that create new jobs serve to encourage neighborhood rehabilitation.

In supporting the municipalities in the American Bottoms Corridor the 2020 Plan will also serve to help contain suburban sprawl. One side effect of suburban sprawl is the loss of individual community identity. In much of suburbia, the only way to tell where one

municipality ends and another begins is by reading the “Welcome To . . .” signs.

American Bottoms Corridor 2020 Land Use Proposals

In keeping with historic land use patterns and the stated land use strategy elements the land use proposals for this Corridor are designed to strengthen the existing development pattern of this Corridor. The land use proposals utilize the land use strategy elements and incorporate municipal land use plan proposals where possible, as well as the Southwestern Illinois Greenway Plan and the Madison County Long Range Transportation Plan.

Industrial/Commercial

This Corridor reflects the proposed conversion of significant acreage from farmland to industrial/commercial uses. While this conversion is desirable for economic benefits, the growth should be planned and environmentally sensitive and prime farmlands shall be avoided where possible.

Areas which are emphasized for this growth reflect the existence of three Enterprise Zones: (1) The Southwestern Madison County Enterprise Zone, (2) The Gateway Commerce Center Enterprise Zone and (3) The Riverbend Enterprise Zone. It is anticipated that the enterprise zones and industrial parks, such as Northgate, will attract the majority of industrial/commercial development within the planning period. The result of that development will be a further strengthening of the American Bottoms Corridor’s historic development as a major industrial employment center within the County.

Residential

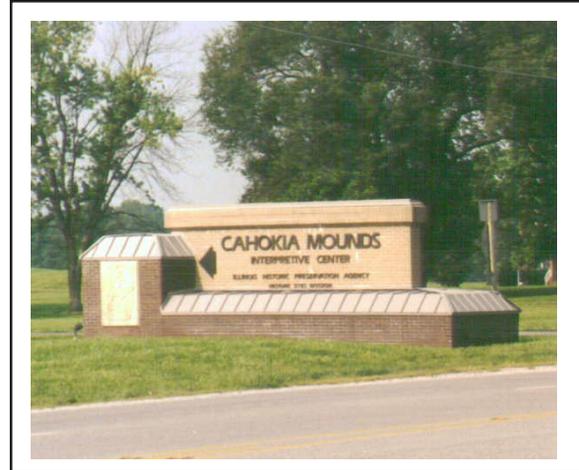
The majority of residential development is proposed within the vicinity of Granite City, plus Pontoon Beach. In keeping with the land use strategy elements, most development is proposed adjacent to existing municipalities where they can be served by infrastructure. The Plan does not propose any medium or high density residential sites in unincorporated areas that are not in the municipal plans. Those residential developments should be located within municipalities or within the planning jurisdiction areas within a mile and one-half of municipalities where a comprehensive plan and official map have been adopted by the municipality. Further, areas where these residential uses are permitted should be within planning partnership areas where the municipality and the County have agreed to land uses and have zoned the areas accordingly.

Open Space, Greenways, Recreation

The land uses proposed in this category reflect the trails proposals of the Madison County Long Range Transportation Plan plus the recommendations of the Southwestern Illinois Greenway Plan shown separately, see maps at rear of report. (For details on these proposals, it will be necessary for the reader to consult the individual plan.) Areas of wetlands should be retained but have a doubtful future. Wetland development can occur with mitigation and wetlands not currently designated have no protection.

Agriculture

Significant expansions of other land uses in this Corridor will come at the expense of agriculture. Agricultural lands that are shown as remaining have a doubtful future unless the



County and municipalities pursue an agricultural preservation program in the American Bottoms. A large amount of existing agricultural property is presently zoned as manufacturing. The County should consider changing the zoning of this property to agricultural. This would allow the plan to guide future land use decisions regarding changing the use of the property from its present agricultural use.

Elements Of The Land Use Strategy For American Bottoms Corridor

Within the American Bottoms Corridor the following elements have served to guide the land use proposals of this Plan.

Land Use

- Promote and encourage urban renewal and brownfields redevelopment projects
- Foster adaptive reuse of older structures
- Encourage and support infill development
- Encourage and expand employment-generating land use and economic opportunities
- Balance land use development with the availability of current or proposed transportation services
- Support continued infrastructure development for existing municipalities

- Retain historic fabric of urban core
- Preserve agriculture and its ability to produce specialty crops such as horseradish and sweet corn.
- Support neighborhood rehabilitation

Transportation

- Provide capacity improvements to support recent and future growth
- Support the New Mississippi River bridge proposal
- Coordinate land use management with Metro Link
- Increase mobility choices and travel options
- Increase and enhance pedestrian and bicycle options
- Coordinate transportation planning with County and municipal land use plans
- Pursue Metro Link in Madison County

Water Resources

(includes Storm Water and Flooding)

- Protect and improve the quality of surface water
- Protect the ground water aquifers as a potable water resource.
- Protect existing wetlands and promote the development of new wetlands to retain storm water.

- Avoid residential subdivision development, of six or more lots, on private sewage disposal systems unless an IEPA approved treatment facility services the subdivision.

- Direct sewer system improvements to already developed urbanized areas such as Eagle Park, Cloverleaf, and State Park.
- Assist municipalities in implementing non-point source control



- Encourage best management practices for storm water management to improve the quality of storm water runoff

Open Space

- Implement the Southwestern Illinois Greenway Plan
- Support the important role of private open space
- Adopt open space design requirements
- Integrate open space with storm water planning
- Expand and enhance neighborhood parks
- Coordinate open space planning efforts with municipalities, park districts, and adjoining counties

Community Character

- Preserve and enhance neighborhoods
- Support revitalization effort of downtowns
- Coordinate with and support municipal preservation efforts to preserve and enhance community and neighborhood historic resources
- Continue to expand diversity of land uses and job-creating employment opportunities

- Recognize and enhance individual community identity

BLUFFS CORRIDOR

The Bluffs Corridor includes the central region of Madison County. On the western edge is the American Bottoms Corridor; to the east is the expanse of the Rural/Agricultural Corridor. The primary factors used in determining the boundaries of the Bluffs Corridor were the bluffs, soils and topography, as well as municipal and county development patterns and existing and proposed infrastructure.

The Bluffs Corridor has a unique development character — a blend of suburban and semi-rural residential development, communities, open space, and farmland. It is a transition area from the more industrially developed urban region to the west and the farms and villages to the east. As a transition area, this area represents suburban growth in the County.

Approximately 121,019 people live in the Bluffs Corridor, which encompasses 22 percent of the County’s 474,043 acres. This area offers a pleasant lifestyle with open space, scenic vistas, convenient transportation routes, and proximity to shopping and other amenities. The desirability of the area is evidenced by countryside residential developments and the growing communities of Edwardsville, Glen Carbon, Maryville, Collinsville, Troy, Bethalto and Godfrey. These communities will not be balanced recognizable communities without well-placed strategies to preserve open space, incorporate scenic vistas, create neighborhood identity, and maintain the countryside character of the Bluffs Corridor.

The Bluffs Corridor contains a blend of land uses: open space, agriculture, residential, institutional and commercial services. Open



space is a prominent feature of this Area. Public and private open space provides environmental protection, recreational opportunities, visual beauty, educational opportunities, and countless other benefits. Agriculture is also a significant land use in the Bluffs Corridor. Much of the farming in this area, as in all Madison County, is family-operated.

Current residential land use in the Bluffs Corridor consists primarily of single family lots. This type of residential development has a demonstrated market in Madison County as current residential construction projects demonstrate.

The 2020 Plan recognizes that it is crucial for the municipalities and the County to manage growth in the Bluffs Corridor while protecting the environment. Much of the Bluffs Corridor will develop under the influence of the municipalities. This area will be the County’s litmus test — where the County and municipalities either surrender to conventional suburban sprawl or make a stand for managed growth and the preservation of countryside character and open space. This critical growth area is, to a large extent, where the future character of the municipalities and the County will be determined.

In the Bluffs Corridor it is vital to prevent suburban sprawl. Suburban sprawl, the spread of residential and commercial development into rural areas, is a serious urban and environmental issue. The continued expansion of suburban development in the St. Louis region will increase development pressures in this area.

The Elements of the Land Use Strategy depict the planning approach for the Bluffs Corridor. The approach focuses on preserving the unique character and natural resources of the area. The elements of the Bluffs Corridor strategy call for preservation of open space in new development, coordination of transportation and land use, community character enhancement, balanced land use, and water resource management.

Open space set aside is a high priority in the Bluffs Corridor to provide “breathing space,” environmental protection, recreational areas, visual beauty, educational opportunities, and other community benefits. Protection of open space will directly benefit the water quality of the major watersheds in the area. Water resources — creeks, lakes, (and to a lesser extent) wetlands, flood plains — are natural features that need to be enhanced as well as protected from pollution and encroachment.

A key to the enhancement and protection of water quality in the Bluffs Corridor is minimizing the amount of impervious surface in new developments. Impervious surfaces include rooftops, roads, driveways, sidewalks, and parking lots. The amount of impervious surface on a site directly affects the quantity and quality of runoff. Minimizing impervious surfaces reduces runoff, which reduces the rate, volume, and pollutant load of water traveling downstream. This is essential to protecting the quality of water within the watersheds of the Bluffs Corridor. This can

be done without sacrificing quality development and must be done to reduce hillside drainage affecting the American Bottoms.

The enhancement of community character in the Bluffs Corridor can be achieved through design techniques such as prairie traditional, open space design and Planned Unit Developments. These design methods are viable alternatives to conventional suburban patterns which consume large acreages. Prairie traditional often uses a clustering technique whereby homes are set in smaller, compact neighborhoods in an open space setting. Along with encouraging neighborhood activities, cluster site planning reduces costs for roads, waterlines and sewer lines. This design also provides privacy and neighborhood identity and preserves natural features or farmland.

An additional important benefit of prairie traditional planning is viewshed management, an effort to preserve a rural atmosphere by identifying and protecting scenic vistas. Often a curve in a road can lead to an expanse of trees, a water feature, or perhaps a local landmark such as a church steeple. These unexpected encounters help to separate the countryside from the suburbs, as well as provide a transition from one community to the next.

As the Bluffs Corridor develops, it will be important to coordinate transportation planning with County and municipal land use plans. Bypass routes around some of the communities may be appropriate. New developments should plan pedestrian and bicycle-friendly trails. Balancing the need for additional transportation capacity with land use will help to maintain the open character of the Bluffs Corridor.

Madison County and the municipalities must wisely manage the Bluffs Corridor. The edges of this area provide visual evidence of land use and density changes between this area and the American Bottoms Corridor to the west and the Rural/Agricultural Corridor to the east. It will be essential that the eastern edge of the Bluffs Corridor remain well-defined so that a person can tell when he leaves the city and enters the Rural/Agricultural Corridor. Rather than denoting municipal boundaries, this edge maintains the integrity of the Bluffs Corridor. The western edge of the Bluffs Corridor is equally important, providing a transition from what will become a predominance of industrial/commercial land uses next to suburban land uses of the Bluffs Corridor.

Bluffs Corridor Land Use Proposals

The land use proposals for the Bluffs Corridor reflect the elements of the land use strategy, the historic land uses of this area, municipal land use plans, the Madison County Long Range Transportation Plan and the Southwestern Illinois Greenway Plan.

Accordingly this Corridor reflects a significant conversion of agricultural and non-agricultural land to residential uses. Supportive and appropriate commercial and industrial expansion is proposed principally in proximity of the interstate highway system or principal highways.

Residential

The municipalities within the Bluffs Corridor are projecting aggressive residential growth in the areas within one and one-half miles of municipal boundaries. Accordingly, this Corridor reflects significant conversions of agricultural and wooded lands to residential uses. Community plans proposed and existing

residential development is primarily single family dwellings.

Commercial

The majority of commercial development in this Corridor is currently within municipalities and the majority of future growth will be within municipalities and the I-55/70-Corridor. Lands adjacent to that portion of I-55/70 between I-70 east and U.S. Route 40 are expected to continue to develop commercially. As residential development occurs there will be significantly increased pressure to rezone for individual and limited commercial activity.

Commercial uses shown also reflect commercial concentration, existing and proposed, within several of the municipalities due to their effect on adjacent unincorporated areas. This is especially true of Illinois 157 in Collinsville and to a lesser degree in Troy and Edwardsville.

Industrial

Industrial proposals in this Corridor primarily reflect proposals of municipal land use plans. There are limited industrial land uses within this Corridor currently, with existing ones primarily within municipalities.

Open Space, Greenways, Recreation

The land use proposals within this land use category reflect the trail proposals in the Madison County Long Range Transportation Plan, plus the recommendations of the Southwestern Illinois Greenway Plan and municipal plans where appropriate. For details on those proposals the reader should consult the individual plan.

Agriculture

Significant amounts of agricultural land uses are proposed for conversion to residential land use in this Corridor, reflecting the aggressive projections of municipalities in this Corridor. Agriculture will remain a very large land use for the planning period but its future within this Corridor is one of conversion to other uses. It is within this Corridor that critical decisions will be made concerning agricultural preservation or the lack of it.



Elements Of The Land Use Strategy For The Bluffs Corridor

Within the Bluffs Corridor the following elements have guided the land use proposals of this plan.

Land Use

- Minimize conflict between agriculture and new development
- Utilize and encourage design techniques such as, open space and prairie traditional as an alternative to sprawl
- Create a transition zone from the city to the countryside
- Preserve and create a sense of neighborhood in existing and new developments
- Allow only development that protects and enhances natural resources
- Prepare land use plans for major interstate interchanges
- Plan infill development compatible with surrounding areas

Balance development with the availability of current or proposed infrastructure, including transportation

Transportation

- Coordinate transportation planning in County and municipal land use plans
- Preserve and protect potential and existing rights-of-way
- Develop municipal by-pass routes
- Limit access to heavily traveled roads – encourage frontage roads and cross access easements
- Develop pedestrian and transit-friendly neighborhoods

Water Resources

- Improve surface water quality and protect ground water aquifers
- Protect existing wetlands and promote the development of new wetlands to retain storm water.
- Avoid residential subdivision development, of six or more lots, on private sewage disposal systems unless an IEPA approved treatment facility services the subdivision.
- Utilize stream bank stabilization and soil erosion techniques

- Develop a multiple benefit/multiple use watershed demonstration site as a model for the remaining major watersheds
- Protect and improve water quality in the Bluffs watersheds
- Limit the amount of impervious surfaces within developing watersheds

Open Space

- Advocate the value of institutional open space
- Implement the Southwestern Illinois Greenway Plan
- Consider Forest Preserve acquisitions
- Develop linkages in the greenway system
- Protect and enhance valuable viewsheds
- Coordinate open space planning activities with municipalities, park districts, and adjoining counties
- Develop the multiple benefits/multiple use open space concept in conjunction with water resources management, especially with storm water
- Consider acquiring natural areas and appropriate buffer zones

Community

- Encourage the development of neighborhoods
- Utilize open space or related design techniques where appropriate to protect natural features, preserve open space, and create a sense of neighborhood
- Encourage municipalities to use new design approaches
- Reinforce a sense of community by requiring that new development be compatible with the historic development of the area
- Preserve and enhance village, community, and neighborhood historic resources



RURAL/AGRICULTURAL CORRIDOR

The Rural/Agricultural Corridor encompasses the eastern portion of Madison County. The Rural/Agricultural Corridor borders the County's Bluffs Corridor area on the west and extends east to the Madison County line.

The Rural/Agricultural Corridor comprises 60 percent of the County's 474,043 acres and is home to about 64,564 people. Agricultural uses are predominant with row crops and animal production. Moving east across the Rural/Agricultural Corridor the terrain changes from gently rolling land with scattered wooded areas to flat, fertile farmland. The wide farmland vistas give much of this area its rural character, and also offer residents and travelers a sense of quiet and tradition.

Farming has been the predominant use in the Rural/Agricultural Corridor since southern Illinois first opened to settlement. Farm families moved from the east and established farms influenced by their diverse ethnic traditions. These traditions influenced settlement patterns and building styles and are still evident as part of the visual landscape. The farms of the Rural/Agricultural Corridor are predominately family operated, with many

multi-generational farms still producing agricultural products.

The communities in this area were established to provide support businesses and services to the growing number of farmers coming to the area. Some were located along railroad routes, providing easy transportation for manufactured goods and exporting agricultural products. The communities eventually grew to include opportunities for social activities, housing, and employment, with each community developing a unique community identity.

The Rural/Agricultural Corridor will change the least between now and the year 2020 in comparison to the American Bottoms Corridor and Bluffs Corridor areas. This is appropriate because the eastern half of Madison County contains some of the most fertile farmland in Illinois. The 2020 Plan provides more than enough opportunities in this Corridor to accommodate development to the year 2020.

The 2020 Land Use Strategy calls for new development in the agricultural area of the Rural/Agricultural portion of the County and supports logical planned growth for the communities. In most of this area, the County should discourage growth that is not served by infrastructure, including public water and sewer systems. The County should also discourage the creation or expansion of Facility Planning Areas that diverge from existing agricultural and community development patterns. Development should be steered towards existing communities and subdivisions, thus avoiding the “pop-up subdivisions” that suddenly appear in the countryside.

Part of this planning strategy is to identify and encourage protection of the four existing land use patterns in the Rural/Agricultural Corridor:

- Farming, including agricultural infrastructure, agricultural industry, and farmstead.
- Towns and villages, which support and enhance agriculture.
- Countryside residential, where limited single-family development will be encouraged on non-prime farmland adjacent to existing residential uses.
- Individual and farm family residential development where appropriate, such as new residences for farm family members engaged in agriculture and sites not suitable for agricultural production.

The 2020 Land Use Strategy reinforces the premise that agriculture in Madison County should not simply be considered a holding zone waiting on market pressures to dictate development. Unplanned development eventually pushes out farming as well as subsidiary industries, equipment sales, greenhouses and nurseries, sod farms, etc. Maintenance and expansion of agricultural operations should be encouraged along with the practical function of production from farmland.

The 2020 Plan recognizes that the towns and villages of the Rural/Agricultural Corridor are still centers of local services, social activities and employment as well as provide community identity to the surrounding farm areas. Because of these important functions, their preservation and growth is as important as that of the agricultural land itself. These communities continue to function as local service, social, and employment centers and should expand along existing development patterns when appropriate growth occurs.

Planning in the Rural/Agricultural Corridor will focus on protecting farmland and farming as a way of life as outlined in The Land Use Strategy. Agricultural land is a non-renewal resource that contributes to a stable County economy. By recognizing and protecting this important land use, and by setting the agenda for the future, the 2020 Plan seeks to support agriculture and its supporting services so it may continue to thrive in eastern Madison County.



Rural/Agricultural Land Use Proposals

The land use proposals for this Corridor reflect the Corridor’s historical use as an intensive agricultural area supported by towns and villages. This Corridor is primarily agricultural and is expected to remain so throughout the planning period. Conversions of agricultural land will occur but if guided to areas designated in the City of Highland Land Use Plan and to infill areas within and adjacent to smaller villages, the impact on the agricultural economy will be minor.

Scattered individual residential growth and residential subdivisions that appear to “pop up” in farm fields are specifically discouraged. This problem has been discussed in the agricultural planning issue and is addressed in the Recommendations and Implementation section of this Plan.

Residential

Residential growth is projected in areas designated by municipal plans, especially in the City of Highland area. Most of the smaller municipalities in this Corridor have adequate vacant lands within their borders to accommodate growth and little or no residential development areas are shown outside of those municipal boundaries.

Existing settlements (developments) are shown and rural residential development that is not within or adjacent to a municipality should be encouraged to locate in these settlements. When large lot developments, referred to as “Country Subdivisions”, are proposed, they should be permitted on land not suitable for agriculture relating to productivity, topography, vegetation, man-made barriers, etc.

Commercial

The majority of commercial development in this Corridor is located within municipalities with the exception of some agri-business activities, cross-roads commercial activities and commercial developments extending out highways that serve the municipalities.

Proposed commercial developments are those areas shown in community plans, cross-roads commercial and highway commercial at I-55 and I-70 interchanges.

Industrial

The primary industry in this Corridor is agriculture. Industrial developments do exist in the City of Highland. Additional industrial development is reflected in the City of

Highland Plan and the possibility of industrial development exists at Shafer Metro-East Airport west of Highland. No large industrial areas are projected for this Corridor within the planning period.

Open Space/Greenways/Recreation

The preponderance of agricultural lands in this Corridor results in a low corridor priority for open space during the planning period. The trails and greenway proposals of the Madison County Long-Range Transportation Plan and the Southwestern Illinois Greenway Plan are recommended for consideration as opportunities arise. The open space implementation proposals especially along the principal creeks of the County will provide multiple benefits for water quality, wildlife and open space.

Land Use Strategy Elements Of The Rural/Agricultural Corridor

Land Use

- Consider establishing a goal for the retention of a stated percentage of the County as agricultural
- Encourage, maintain, and support agriculture as a viable land use
- Support the continuation and expansion of agricultural business
- Minimize conflicts between agriculture and non-agricultural uses
- Maintain and expand rural communities as cultural, social, and employment centers
- Only allow new development that is served by public infrastructure or acceptable private infrastructure

Transportation

- Encourage improved access from rural areas to job markets

- Promote public safety and awareness regarding the agricultural vehicles that share our roads
- Support the continued viability of the Tri-City Regional Port District

Water Resources

- Maintain and encourage agricultural, soil erosion control, and conservation practices
- Require publicly owned and managed wastewater facilities in lieu of small private plants
- Protect existing wetlands and promote the development of new wetlands to retain storm water
- Avoid residential subdivision development, of six or more lots, on private sewage disposal systems unless an IEPA approved treatment facility services the subdivision
- Protect water quality by reducing non-point source pollution of surface water
- Enhance and protect water quality by reducing and eliminating point source discharges of wastewater into surface water
- Through the use of development regulations discourage the use of individual wastewater disposal systems

Open Space

- Identify and acquire environmentally sensitive natural areas where appropriate
- Develop and improve parks and open space systems
- Coordinate open space planning activities with municipalities, park districts, and adjoining counties

Community

- Encourage and assist municipalities in protecting their historic resources

- Encourage the viability and maintenance of municipal main streets
- Encourage new developments to locate within existing communities

Agricultural Economy

- Protect productive farmland
- Support the location and expansion of agriculture-related industries
- Consider the creation of 40-acre zoning lots in Agricultural Zoning Districts

COUNTYWIDE PLAN RECOMMENDATIONS AND IMPLEMENTATION

This 2020 Plan focuses on the County’s efforts and needs to manage the land within its borders to maintain and improve the quality of life for all County residents. Managing land and how it is used is what 2020 Plan is all about.

Management of any asset for any purpose always involves choices. Those choices involve costs, methods, timing and results desired. The recommendations for implementing this plan involve those same variables. The additional element the County must consider is the choice and application of specific tools to use in its management efforts. The 2020 Plan identifies and recommends the application of both methods and tools the County should consider in its management effort.

Recommendations

County-Municipal Cooperation

Perhaps the most important recommendation in the Plan is for County-Municipal cooperation. Many of the previous subjects

in the Plan note areas where cooperation is necessary for each party to be successful.

Areas of cooperation include, but are not limited to:

a) The mile and one-half area around municipalities where the County and the municipality have certain statutory planning and enforcement rights

b) Watershed planning for water quality and storm water purposes necessarily involves multiple political jurisdictions

c) Transportation planning always involves multiple political jurisdictions.

d) Greenways, trails and large recreation facilities benefit multiple political jurisdictions.

To initiate a process for cooperation with municipalities the County should select a limited objective in one or more of the four preceding subjects a) through d), select a geographic area where an opportunity or problem exists and approach the municipality(s) involved with an offer to form a planning partnership for a specific purpose.

For example, it is in each party’s interest to have an agreement concerning the mile and one-half territory adjacent to municipal boundaries in the area of proposed land use, zoning, subdivision regulations and open space. First, determine the amount of agreement possible for future land use proposals. Incorporate those proposals in the respective land use plans. Second, review the zoning districts and subdivision standards to apply and determine the amount of agreement possible. Standards need not be identical but the greater the similarity the better the application, simplicity of conformance and administration will be. This “trial run” planning partnership then becomes a template

for other areas and a structure where other issues, opportunities and problems can and will be addressed.

Planning Capability

It is recommended that Madison County develop an “in-house” planning capability. The County will continue to urbanize and development issues will increase in complexity. Consultants are useful for specific kinds of projects or technical assistance activities but are ill equipped for the day-to-day attention that is required and that in-house staff bring to the table.

Development Regulations Review

It is recommended that the County begin an in-depth review of the development regulations now in use, specifically the County Zoning and Subdivision Regulations. The review should include consideration of large lot zoning, introducing new design concepts, more stringent wastewater standards, the use of planned districts and incentives to foster better and more open design for all development.

Development Impacts

It is recommended the County begin to explore development impact analysis and development fees. The County can make more informed decisions about the benefits, revenues, jobs, costs and other associated impacts of development with this tool. Development impact fee programs are used to have new development pay a proportionate share of the cost of new roads, sewer systems or similar public facilities.



Storm Water/Watersheds

The County’s storm water problems need continuous attention and the exploration of new ideas. It is recommended that the County consider the implementation of a storm water impact fee as one of the revenue sources for addressing storm water programs. It is also recommended the County review and adopt standards equal to or greater than those contained in “A Model Ordinance Providing For the Control of Storm Water Drainage and Detention, Soil Erosion and Sedimentation Control” (SIMAPC 1997).

It is recommended that the County initiate a watershed planning program utilizing the new Illinois Environmental Protection Agency “Watershed Program”. This program is new and can be used to address water quality and storm water issues the Regional Storm Water Committee has been working on.

Encourage Development (Including Residential) To Locate In Appropriate Locations

Encourage residential development to locate adjacent to municipalities or existing residential developments. The proliferation of subdivisions not served by existing or adequate infrastructure simply creates unnecessary problems. The proliferation of individual

disposal systems, increased traffic on rural roads, and demands for greater police and fire protection are common results of this kind of residential sprawl. Available cheap land and the increasing availability of public potable water supplies will emphasize this residential sprawl unless other alternatives are considered.

Regulations and incentives will be necessary to reduce this problem.

The creation of agricultural districts with very large lot requirements-up to 40 acres.

The creation of residential districts in concert with municipal land use planning that places residential districts next to municipal boundaries where infrastructure is available.

The creation of incentives, density and others such as simplified Planned Unit Development procedures, in conjunction with open space design or other design features. The County Zoning and the municipal subdivision regulations must make development more economically attractive and rewarding if most new development is to actually locate adjacent to municipalities and their existing infrastructure.

It is additionally recommended that the County consider the use of development impact fees for infrastructure improvements. The use of development impact fees would be even more effective if used in conjunction with municipalities.

Commercial Development

There is little question that location is the first key to commercial success. The commercial land use proposals of the 2020 Plan primarily reflect existing land use patterns, municipal plan proposals and locational considerations



in relation to interstate and major highways. The implementation of these land use proposals can best be encouraged through appropriate zoning and subdivision regulations. Provisions within the current County zoning ordinance should be reviewed to encourage more planned commercial and office parks through the use of planned districts and signage incentives, flexible multi-use parking standards and related uses.

Agriculture

The 2020 Plan proposals for agriculture center on the retention of agricultural lands to support a strong agricultural economy, to prevent the premature conversion of agricultural land and to allow appropriate residential and agricultural business uses.

The retention of designated lands although difficult can be accomplished. That is not to imply that all lands now in agriculture should be retained.

The County is encouraged to initiate a discussion concerning a future land percentage that would be maintained in agriculture production. This recommendation presupposes that a balanced future, 20 years and beyond, land use pattern is desired and

necessary for a high quality of life for County residents. The time to begin the discussion and explore options and locations is now. The accomplishment of such a goal is definitely a long term endeavor. The alternative, over time, is continuous monotonous development.

Short term implementation actions to reduce sprawl in agricultural areas are very large lot zoning, the implementation of planning partnerships that result in land use and development regulation agreements with municipalities and the use where possible of agricultural preservation methods identified in the agricultural planning issue discussion.

Limited residential development will occur in agricultural areas but should occur on non-prime agricultural lands and to respond to the housing needs of those engaged in agriculture. These are specific problems the County's development regulations should address for wastewater treatment, storm water, and transportation impact fee consideration.

Industry

Madison County long ago realized the advantages the County has for industrial development and in many ways has supported and sought to implement activities that encourage additional industrial development. The creation of Tri-City Regional Port District, St. Louis Regional Airport, the interstates and the continuing extension of I-255, the new Clark Bridge at Alton, support for a new Mississippi River Bridge in the Tri-Cities area, and the creation of three Enterprise Zones are principal implementable actions, some accomplished, others ongoing.

Within the enterprise zones appropriate zoning should continue to be reviewed and rezoning should occur for lands so designated in the Land Management Plan.



There are numerous local and regional economic development agencies, and organizations involved in promoting and encouraging new industrial development within the County. As a short-term measure the County should support and participate with those organizations where possible. In the future, the County is encouraged to consider the addition of “economic development” to its planning partnership agenda.

Open Space/Recreation/Greenways

The Southwestern Illinois Greenway Plan is regional in nature and does not replace the need for additional open space planning at the municipal or county level. The greenways plan is a guidance document that additionally includes trails and bikeways as recreational activities that may be developed to add recreational benefits in association with greenways.

The Plan provides a long-range strategy for the development of a regional network of greenways in Madison, St. Clair, and Monroe Counties and includes an identification of priorities for development and implementation. The reader is encouraged to consult the Southwestern Illinois Greenway

Plan for a more detailed discussion of recommendations that include acquisition, regulations, planning and preservation.

The 2020 Plan specifically recommends the review and adoption of a “Stream Protection Ordinance.” Linear greenways along streams, (blueways) provide a dual function as proven filter strips for trapping sediment and pollutants that degrade water quality.

Figure 1
Federal/State Roadway Improvements
FY 2000 - 2020

Facility	From	To	Type of Improvement	Length (miles)	Cost (millions)	Implementation Timeframe
<u>Central County</u>						
IL 159	Center Grove Road	IL 143	New Road	2.20	9.6	FY 00-05
IL 159	St. Clair County Line	I-55/70	New Road	3.00	20.0	FY 00-05
IL 157	Schwarz Road	SIUE Entrance	Widen (2 to 5 Lanes)	4.20	20.3	FY 00-05
IL 159	Center Grove Road	I-55/70	Widen (2 to 5 Lanes)	5.10	25.5	FY 00-05
IL 143	IL 159	I-255	Widen/Resurface	6.20	42.0	FY 06-10
IL 162	Formosa	US 40	Widen (2 to 3/4 lanes)	4.37	18.6	FY 06-10
IL 158 Extension	JB Bridge	I-55/70 (Troy)	Feasibility Study	0.00	0.0	Unknown
Subtotal				25.07	136.0	
<u>East County</u>						
US 40	I-55/70	IL 4	Widen (2 to 4 lanes)	6.0	28.0	FY 06-10
IL 143	US 40	2 miles west	Widen (2 to 4 lanes)	2.0	9.0	FY 11 -15
IL 140	Morland Road	IL 159	Widen (2 to 4/5 lanes)	3.5	28.0	FY 11 -15
US 40	IL 143	N. of I-70 Interchange	Widen (2 to 4 lanes)	1.5	4.0	FY 11 -15
Subtotal				13.0	69.0	
<u>Riverbend</u>						
I-255	IL 143	IL 267	New Road	13.9	200.4	FY 00-10
IL 111	IL 143	Airline Drive	Widen (2 to 4 lanes)	2.0	4.6	FY 06-10
IL 3	US 67	Stirlitz Road	Widen (2 to 4/5 lanes)	3.6	14.0	FY 11 -15
IL 3/111	IL 143	US 67	Widen (4 to 6 lanes)	5.5	33.0	FY 11 -15
IL 111	IL 140	Airline Drive	Widen (4 to 6 lanes)	1.0	5.0	FY 11 -15
IL 267	US 67	Jersey County Line	Widen (2 to 4 lanes)	2.7	12.9	FY 11 -15
US 67	IL 267	Jersey County Line	Widen (2 to 4 lanes)	2.7	11	FY 11 -15
IL 140	Homer Adams Pkwy.	Morland Road	Widen (4 to 6 lanes)	3.9	32.0	FY 16-20
Subtotal				35.3	312.9	
<u>Tri-Cities</u>						
IL 3	Broadway Street	I-70 (relocated)	New Road	2.40	46.8	FY 06-10
Chain of Rocks Road	IL 111	FAP 310	Widen (2 to 5 lanes)	0.09	3.0	FY 00-05
I-270	Mississippi River	IL 111	Widen (4 to 6 lanes)	6.60	221.3	FY 11 -15
Subtotal				9.09	271.1	
Total, Federal and State Road Improvements				82.46	789.00	
New Roads				21.5	276.8	
Capacity Improvements				60.96	512.20	

Figure 2

County/Local Roadway Improvements
FY 2000 - 2020

Facility	From	To	Type of Improvement	Length (miles)	Cost (millions)	Implementation Timeframe
Central County						
Keebler Road	I-55/70	IL 162	Realign	2.4	7.0	FY 00-05
Meridian Road	Glen Crossing Rd.	S. of I-270	Reconstruct	1.3	2.4	FY 00-05
Glen Crossing Rd.	Meridian Road	IL 159	Widen	1.6	5.0	FY 00-05
Bluff Road	IL 157	New Poag Road	Resurface	1.9	2.9	FY 00-05
E. Main Street	IL 159	IL 162	Reconstruct	2.0	2.6	FY 00-05
Center Grove Rd.	IL 157	IL 159	Widen (3 to 5 lanes)	1.6	3.9	FY 06-10
Goshen Road	IL 159	I-55	Reconstruct	3.0	3.4	FY 06-10
West Main Street	Keebler Road	IL 159	Reconstruct	1.1	1.1	FY 06-10
Glen Crossing Rd.	IL 159	Old Troy Road	Reconstruct	1.5	2.0	FY 06-10
Old Troy Road	Cottonwood Road	IL 162	Reconstruct	3.0	3.9	FY 06-10
New Poag Road	IL 3	E. of Bluff Road	Resurface	6.4	7.9	FY 11-15
Sand Road	Chain of Rocks Road	New Poag Road	Reconstruct	3.0	5.3	FY 11-15
South Bypass	IL157	IL 143	New Road	3.5	Unknown	FY 11-15
Subtotal				32.3	47.4	
East County						
Buchta Road	IL 111	IL 159	Reconstruct	5.1	6.9	FY 00-05
Reken Road	IL 159	Prairietown Road	Resurface/Widen	2.8	2.4	FY 06-10
Highland Bypass	St. Rose Road	IL 143	New Road	2.0	6.4	FY 11-15
Reken Road	Prairietown Road	Macopin County Line	Resurface	6.5	7.3	FY 11-15
Iberg Road	Troxler Road	St. Rose Road	New Road	1.5	0.8	FY 11-15
Troy-O'Fallon Road	US 40	St. Clair County Line	Widen (2 to 4 lanes)	5.0	25.4	FY 11-15
Lebanon Road	Clay School Road	IL 4	Reconstruct	9.0	12.8	FY 11-15
Staunton Road	IL 162	IL 143	Reconstruct	6.0	7.8	FY 11-15
Fruit Road	IL157	IL 160	Reconstruct	13.0	16.9	FY 11-15
Subtotal				50.9	86.7	
Riverbend						
Birch Road	IL 143	Buchta Road	Realign	2.8	3.7	FY 00-05
Seiler Road	Humbert Road	Seminary Road	Reconstruct	2.1	3	FY 00-05
Indiana Avenue	IL 143	East Broadway	New Road	0.5	10.7	FY 00-05
Hedge Road	Madison Avenue	Wagon Wheel Road	Resurface	1	1.3	FY 00-05
West Corbin Street	Old Bethalto Road	Albers Lane	Resurface	1.0	1.3	FY 00-05
Cut Street	East Broadway	East-West Connector	Reconstruct	1.6	3.8	FY 06-10
Chessen Lane	East Broadway	East-West Connector	Reconstruct	1.6	3.8	FY 06-10
Pierce Ln./Airport Rd.	IL 3	US 267	Resurface	2.5	3.3	FY 06-10
East-West Connector	Indiana Avenue	Chessen Lane	New Road	1.4	2.9	FY 06-10
Wanda Road	New Poag Road	IL 143	Resurface	3.0	3.9	FY 11-15
Edwardsville Road	IL 143	IL 3	Widen (2 to 4 lanes)	3.5	4.6	FY 11-15
Harris Lane	Seminary Road	Fosterburg Road	Reconstruct	2.5	3.3	FY 11-15
Hawthorne /Madison	IL 3	Wanda Road	Resurface	3.0	3.9	FY 11-15
Airport Road Ext.	Airport Road	Great River Road	New Road	4.0	8.9	FY 16-20
Humbert Road	I-255 Interchange		Widen (2 to 4 lanes)	1.0	1.3	FY 16-20
Seiler Road	Seminary Road	IL 159	Reconstruct	9.5	10.3	FY 16-20
Bethany Lane	I-255	Airport Road	Resurface	1.0	1.3	FY 16-20
Culp Lane	Moro Road	Fosterburg Road	Reconstruct	4.5	5.9	FY 16-20
Subtotal				46.5	77.2	
Tri-Cities						
Schaeffer Road	IL 3		Resurface	1.0	1.3	FY 06-10
Tri-Cities Port Access			New Road	1.5	10	FY 00-05
Pontoon Road	IL 203	IL 162	Widen (2 to 4 lanes)	4.0	5.2	FY 00-05
Chain of Rocks Road	W. of IL 111	IL 203	Resurface	2.6	2.3	FY 06-10
South Lake Parkway	IL 111	Pontoon Road	New Road	5.5	30	FY 16-20
Mockingbird Lane	Pontoon Road	IL 162	Reconstruct	2.0	2.6	FY 16-20
Subtotal				16.6	51.4	
Total, County/Local Road Improvements				146.3	262.7	
New Roads				19.9	69.7	
				126.4	193	

Transportation

Madison County commissioned a separate Long Range Transportation Plan that extensively addresses all forms of transportation within the County. The reader is referred to the Madison County Long Range Transportation Plan for a discussion of proposals and implementation actions. A brief summary of that document is provided in this Plan for informational purposes.

Implementation Summary

The recommendation and implementation actions of this Plan are substantive and intended to assist the County in taking the next steps in land management and quality of life discussions. As such, the proposals are intended as a beginning that will encourage discussion and activities to maintain and enhance the quality of Madison County's future.

LONG RANGE TRANSPORTATION PLAN

The following description of the Madison County Long-Range Transportation Plan (LRTP) is an abbreviated summary condensed from that Plan. It is presented as information only and the reader is encouraged to consult the LRTP for a full discussion of the LRTP. An important role of the Madison County Long Range Transportation Plan (LRTP) is to anticipate how future development will impact the transportation system. The following presents specific recommendations for each travel mode to address transportation needs through the year 2020.

Recommended improvements and strategies are presented for the following transportation systems:

- Street and Highway System Improvements
- Transit System Strategies Transportation Demand Management
- Water and Air Transportation Strategies
- Port Access

The projects and strategies in this section support the multi-modal intent of the LRTP's four principal goals: (1) mobility, (2) safety and efficiency, (3) economic feasibility, and (4) consistency with social, environmental, and energy considerations.

The transportation proposals described in the following sections were developed based on public input on transportation issues facing the community; technical analysis of existing and future transportation conditions; and local policies.

Street And Highway Improvements

The planning process used to develop the recommendations included; use of the traffic forecast model MINUTP, input from public involvement committees, route alignment, and cost alternatives. These activities include recommendations for the following types of projects or strategies.

- A. Highway Capacity Improvements
- B. Grade separation of railroad crossings
- C. Intersection improvements

Highway Capacity Improvements (Federal/State Systems)

Interstate, U.S. Highway and Illinois State Route improvements were identified and tested in the planning process.

The LRTP recommends additional study regarding the needs to construct grade separation of roadways and railroad lines.

Intersection Improvements

The LRTP recommends additional study be conducted to examine potential intersection improvements at the locations specified in the Plan. These improvements would address capacity, delay, and/or safety issues at these locations.

Transit Service Plan

Madison County Transit District has begun implementing a hub and spoke system utilizing transit centers as the transfer location. In addition, express bus service is provided to the major park-and-ride centers along major arterials and interchanges. This system matches the quality of service to the nature of the trip and has proven to be very efficient.

The long range plan was developed with this hub and spoke service concept and matching the service type with population and employment densities. The long range Transit Plan is described in terms of three time periods, or phases, and four separate but related transit services.

The first phase has already begun with the coordination and expansion of existing service related to the implementation of the transit center concept, and the absorption of Bi-State express routes. Phase I ends with the opening of the new MetroLink station at Emerson Park and with the initiation of the light rail preliminary planning and analysis.

Madison County Transit (MCT) is developing transit centers throughout the County. Currently, there are four transfer facilities in Madison County with three more to be added in the near future.

Phase II begins with the completion of the Transit Centers in Edwardsville, Collinsville, Alton and Wood River and the opening of the Emerson Park MetroLink Station. With these significant investments, Madison County Transit will add new services and adjust others to reflect the travel time and comfort advantages offered by these facilities. Some express buses may short loop at MetroLink and regional routes will be improved by the direct routing to the transit centers. Phase II represents the full operation of the spoke-and-hub service concept. In Phase II, the planning and preliminary design environmental reviews begin for the first portion of the Madison County Light Rail Transit (LRT) system. Phase II continues throughout the development and construction of the LRT system and ends with the opening of the LRT.

Phase III begins with the opening of the LRT system and represents a significant improvement to the transit system. The express bus, the regional shuttles, and the local shuttle bus system will be restructured to maximize the potential benefits of the LRT system.

Bicycle And Pedestrian Transportation

This part of the Plan presents a future scenario for bicycle facilities in the County with recommendations that would fill gaps in the existing bikeway system by establishing an interconnected system.

The future system includes existing trails, routes and suitable roads. It also includes future trails, routes and recommended road segments to be upgraded for shared bicycle use.

Airports

This part of the LRTP identifies the generalized facility requirements and improvements necessary to improve the existing aviation infrastructure in Madison County to satisfy aviation demand through the year 2020.

It should be noted that airport needs are not uniform. Each airport was evaluated separately and individually because of the unique features of each airport facility and the differences in the airport's roles, types of aircraft served, and service area characteristics. Additionally, current Airport Master Plans and Airport Layout Plans were reviewed along with information and recommendations in the Regional Aviation System Plan being prepared by the East-West Gateway Coordinating Council.

The Transportation Plan identifies airport expansion proposals. The expansion and improvements include the following types of proposals.

- Land and easement acquisition for future airport development requirements or for noise mitigation purposes
- Runway improvements to accommodate increased airport activity levels, changes in aircraft types, and maintenance requirements
- Taxiway improvements for safety and capacity purposes
- Apron and aircraft tie-down improvements to accommodate increased airport activity and/or changes in aircraft types.
- Lighting improvements for safety and nighttime airport usage
- Navigational aid enhancement for safety and to allow expanded usage of airports during periods of inclement weather
- Building and terminal improvements to accommodate airport based aircraft and foreign itinerant airport uses



- Miscellaneous improvements such as utility extensions and airport land use compatibility zoning recommendations to ensure airport safety and durability

River Ports

Capacity of Port Facilities

Madison County is home to 17 of the 50 individual private river terminals located on the Mississippi River within the entire 72-mile length of the St. Louis Harbor. The County is also home to the Tri-City Regional Port District, the largest public port in the St. Louis area, with its harbor and terminal facilities located adjacent to lock #27 on the Chain-of-Rocks Canal. The Port District territorial jurisdiction is made up of four townships located in the southwest corner of the County. In addition to private operations located in the vicinity of the harbor complex, the Port District owns four public river terminals and one privately operated river terminal. Port facility operators directly support 350 jobs and indirectly contribute to 1,100 related jobs within Madison and St. Clair Counties.

In addition to the harbor complex, the Port District owns an industrial park within the Melvin Price Support Center and is the license

holder of Foreign Trade Zone (FTZ) #31. FTZ operations are carried out from 412,000 square feet of approved FTZ warehouse space.

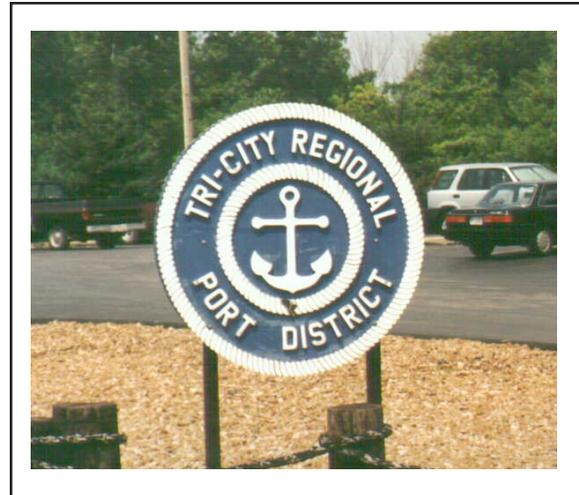
The Port District has performed a feasibility study and development plan for the reuse of the Price Support Center should the military facility close and become available to the District.

Depending on inter-modal transportation availability, a currently planned 1,880-foot expansion of the port's harbor will help provide additional terminal capacity and land access for industrial development.

In cooperation with AmerenUE, the Port District is planning two new ports and terminal complexes that will be served by IL 3. One will be located at the northern end of the Chain-of-Rocks Canal, adjacent to the 1,400-acre Lewis & Clark Industrial Park (Northport), and one south of the existing harbor and adjacent to the McKinley Bridge (Southport). Under a new Harbor Expansion Project approved by the US Army Corps of Engineers, the Port District also plans to construct 3,000+ feet of new harbor at Northport.

Needed Improvements

Because of the potential developmental growth that can result from an improved IL 3, consideration and support for its improvement is greatly encouraged. In addition to the improvement of IL 3 connections to the north and south of the Port's harbor facilities, other improvements to Tri-City Regional Port District, terminals, docks, and rail facilities are needed. Grade separations for new rail crossings and interchanges to eliminate traffic lights wherever possible should be given consideration to improve safety, reduce traffic congestion, and improve highway and rail operations. Old Rock Road, which directly



serves the existing harbor off IL 3, is in need of improvement and capacity expansion. In addition to these roadway improvements, improvements to docks, wharves, conveyors, and other terminal equipment are also needed and proposed funding will be through ISTEAA.

Financial Capacity Analysis

The LRTP provides an investment strategy with the understanding that adequate financing should be dedicated to meet the needs to both preserve the existing transportation system and to fund other planned investments. This

Figure 3
Projected
Transportation
Revenues
(Cost in Millions)
Madison County, Illinois

Funding	1997	1997-2020
County Revenue	\$8.5	\$315.5
Federal Revenue	\$10.5	\$241.9
Total	\$19.0	\$557.4

financial analysis reflects that only portions of the total transportation system serving Madison County are directly under the control of County sponsored agencies. It is recognized that the financial capacity of this plan is directly related to federal funds allocated to IDOT and state-generated revenues, county revenue sources and revenue dedicated to Madison County Transit.

The following discusses a number of revenue cost scenario estimates for Madison County to implement plan recommendations through the year 2020.

County Highway System Expenditures

The Madison County Highway Department is responsible for the maintenance and construction of roadways included in the County highway system. The cost for maintenance and construction is projected at \$396.4 million over the planning period.

Committed County highway projects would be funded by local revenue sources. The reconstruction projects total \$30.2 million. Construction of the projects would leave only \$23.7 million for other reconstruction or resurfacing over the planning period.

State and Federal Expenditures

The LRTP includes projects that are currently committed or planned. Committed projects are those projects included on the Transportation Improvement Program (TIP) completed by either EWGCC or IDOT. This project list includes the Alton Bypass (I-255) from I-270 to IL 143, the IL 159 (Main Street) project in Edwardsville, and adding turn lanes to a section on US 67 in Alton. The cost of these projects is estimated at \$168.2 million.

Figure 4
County Highway
Project
Totals
 (Cost in Millions)
Madison County, Illinois

Committed Projects	\$30.2
Long Range Projects	\$86.8
Total Projects	\$117.0

The state and federal system projects included in this Plan include a number of major projects. The cost of these projects is approximately \$1.1 billion. This total includes the estimated \$512 million for the I-70/IL 3 project in northern St. Clair County, as well as the I-255 extension, and IL 159 widening.

The preceding discussion is a highlight summary of the Madison County Long Range Transportation Plan. The reader is urged to consult that plan for transportation planning information.

PART III

BACKGROUND FOR PLANNING

PLANNING FRAMEWORK

PURPOSE

The purpose of this Section is to set the Plan parameters and direction for the planning effort.

PLANNING IN MADISON COUNTY

Comprehensive planning has been a function of Madison County government for many years. Planning related activities began when Madison County adopted subdivision regulations in 1956, a building code in 1958 and a zoning ordinance in 1963. County planning formally began in 1960 when the County Board commissioned a land use plan for unincorporated areas to assist in the development of the zoning ordinance.

In August of 1967 the County Board contracted with the Southwestern Illinois Metropolitan Area Planning Commission to carry out the first phase of the formulation of a general plan. This work was performed with the support of the federal government and coordinated with the East-West Gateway Coordinating Council. This program was carried out concurrently for Madison and St. Clair Counties, resulted in a series of reports concerning population, economic base, transportation and land use, and was published in the spring of 1969. This series of reports comprised an analysis of existing conditions within Madison and St. Clair Counties.

In January 1969, the County Board contracted with the Southwestern Illinois Metropolitan Area Planning Commission to assist in preparing land use and transportation elements for a county plan which was completed and published in December of 1969. This plan was not formally adopted or put into effect.

In April 1972, the Madison County Board created the Madison County Regional Planning Commission. The principal task assigned to the Commission was to review and revise the proposed 1969 plan which had not been adopted by the County Board. In response to this assigned responsibility, the



Commission and the County Board contracted with the Southwestern Illinois Metropolitan Area Planning Commission for technical planning assistance necessary to update and modify the plan of 1969. In 1973 a comprehensive plan was formally adopted.

Today, building, zoning, and subdivision review are important functions of the County Building, Zoning and Environmental Department. The Department's planning responsibilities were increased in 1987 to include solid waste planning. In addition, the Department provides staff services to the County Planning Commission and the Madison County Zoning Board of Appeals.

The County and the Madison County Transit District commissioned a major long range Transportation Plan in 1996 and a County Comprehensive Plan in 1997.

The County Planning Commission was organized by the County Board in 1997 to guide and coordinate development of the County Land Use Plan. The Commission is composed of nine members, with three ex-officio members.

County Planning Commission Responsibilities

- To participate in the preparation of a Comprehensive County Plan and make recommendations to the County Board with respect to the plan.
- To cooperate in the preparation of project plans in accordance with the official plan and make recommendations to the County Board.
- To assist County officials charged with the direction of projects for improvements embraced within the Comprehensive Plan, to further the development of these projects, and generally to promote the realization of the Comprehensive Plan.
- To report to the County Board on the status of the Comprehensive Plan and on the effectiveness of County ordinances and regulations as they relate to the Comprehensive Plan.
- To transmit to the County Board reports on the important problems, conditions, and proposals pertinent to the future development of the County.

1973 Comprehensive Plan

The 1973 Comprehensive Plan spelled out goals and policies for future development within the County's planning districts. It also called for open space systems to protect natural areas and connect existing public land with future acquisitions. However, the 1973 Plan was very generalized and it failed to address some issues adequately, such as, farmlands, rural development and environmental quality.



The Plan did note that properly planned development in the rural areas could provide jobs, new markets for commerce, alternative housing opportunities, and good uses for less productive and highly erodible farmland.

The 1973 Plan encouraged new rural subdivisions on vacant parcels near existing municipal residential developments and discouraged new subdivisions where detrimental to a goal of preserving prime agricultural land. It noted that Madison County's challenge was to balance additional rural residential development with environmental, conservation, and development goals, and to guide new subdivisions into areas consistent with the County's adopted development goals.

Intergovernmental Cooperation

This Plan proposes increased intergovernmental cooperation as a key implementation tool. The statutory authorization for that cooperation is described in the following text.

On September 23, 1985, the Illinois legislature enacted the Local Land Resource Management Planning Act, Illinois State Statutes, Chapter

50 ILCS 805. This important legislative initiative added strength to the ability of the counties and municipalities to engage in intergovernmental planning activities. The new enabling legislation can be used to develop joint land resource management plans that address critical land and water resource issues. The Land Resource Management Planning Act states:

“It is the purpose of this Act to encourage municipalities and counties to protect the land, air, water, natural resources and environment of the State and to encourage the use of such resources in a manner which is socially and economically desirable through the adoption of joint or compatible Local Land Resource Management Plans.”

Conceptual Land Use Strategies

As Madison County entered the 1990s, growth pressures increased and agricultural/conservation preservation, growth management, urban and economic development, environmental protection, and intergovernmental cooperation emerged as interrelated issues. To address those issues within the development frame work of comprehensive planning the following Land Use Strategies serve as basic policy guides to the County Planning Commission in working towards the completion of this Land Resource Management Plan. The strategies are as follows:

1. For the purpose of comprehensive planning, Madison County is comprised of three distinct land use strategy areas: American Bottoms, Bluffs and the Rural/Agricultural Corridor.



2. Different strategies and types of development are appropriate for each area and, where appropriate, serve to reinforce historical land use patterns.

3. Water resource management is a critical element of land use planning for the County and its municipalities and should be viewed from area and watershed units.

4. Balanced development should be encouraged with land use emphasis building upon the locational characteristics of areas, historic use and their natural and social resources.

5. Agriculture will continue to be a desired land use and will be addressed in a cultural, economic and open space framework.

6. An interdependent relationship exists between land use and transportation planning that requires coordinated planning.

7. Partnership Planning concepts should be explored to facilitate cooperative planning with municipalities.

Process

The process of preparing the draft Plan begins with a review of goals followed by an evaluation of the natural and developed characteristics of the County. Plan inputs are illustrated in Figure 5 and Figure 6.

This Plan includes land use planning, issues of quality of life, water resource management, open space preservation, and environmental protection.

The Plan's Existing Conditions Inventory describes the environmental, physical, and demographic characteristics of the County. This framework serves as information in the identification and examination of planning issues facing Madison County. Objectives and policies are included for each planning issue.

The Land Use Plan and implementation component describes how the County and municipalities can work together to achieve common and management goals and other County actions that should be considered.

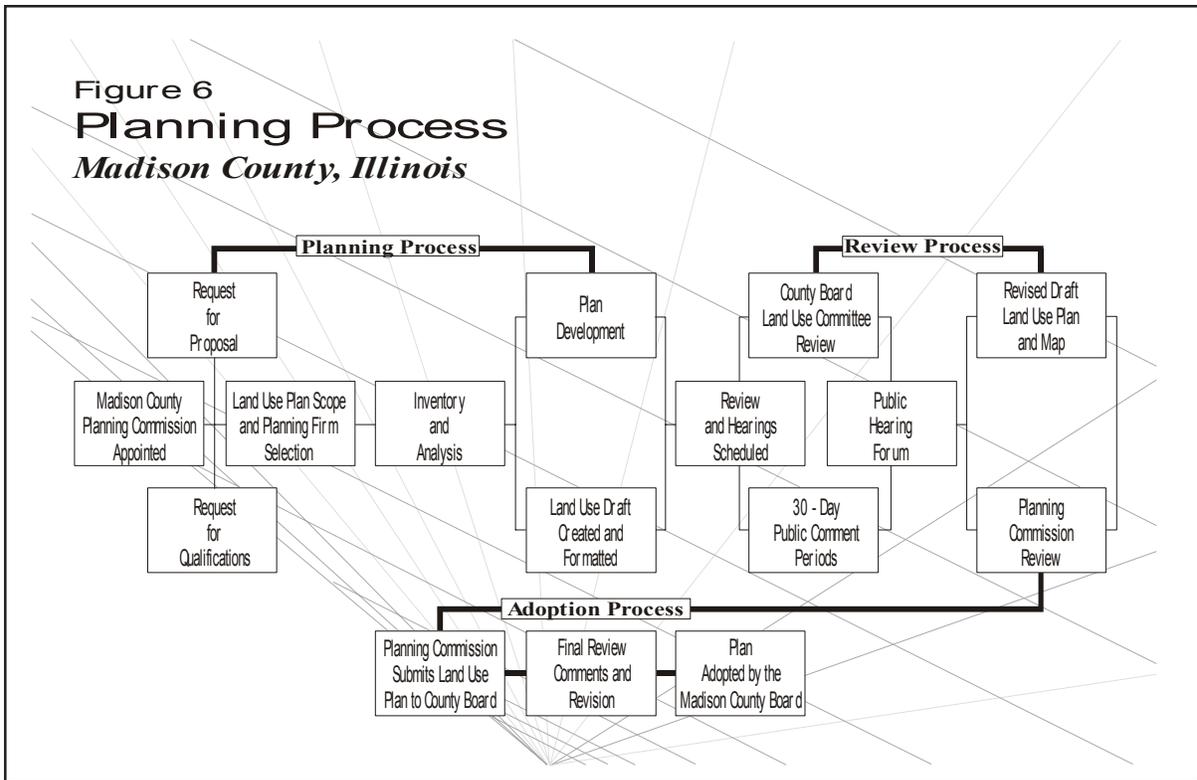
Review

This 2020 Land Use and Resource Management Plan is the product of a public review process which sought input from individual citizens, municipalities, and other organizations within Madison County. The review process included public hearings for citizen participation and input by local governmental bodies, from throughout the County. The 2020 Plan is the result of revisions and changes made by the County Planning Commission in response to the review process. This process results in a plan

Figure 5
Land Resource Management Plan Inputs
Madison County, Illinois



Figure 6
Planning Process
Madison County, Illinois



that helps assure Madison County’s quality of life can be sustained. The Plan provides a proper balance between natural resource protection and community and economic development, and gives elected officials direction to successfully guide Madison County development into the 21st century.

FUTURE PERSPECTIVE

Over the past decade, urban and suburban development has continued within the urban corridors. Rapid growth in urban corridors of Madison County has created concerns about traffic, adequacy of services, loss of open space and environmental quality. Farther east, rural citizens are concerned about the future of agriculture, environmental degradation, and rural development. As Madison County moves into the next century, it will experience increased development pressure and conversion of open areas and farm land to suburban and exurban growth that will

intensify concerns and conflicts unless planning is exercised, compromise is negotiated and resolution of land use and environmental conflict is mitigated.

The thrust of this Plan is to strengthen Madison County’s historical land use pattern. Building upon this historical framework, the Plan identifies three distinct land use areas within Madison County. They are from west to east; the American Bottoms Corridor, the Bluffs Corridor, and the Rural/Agricultural Area (please see Figure 7). The American Bottoms Corridor is the mixture of urban/industrial and other land uses along the Mississippi River.

The Bluffs Corridor is the central area of the County now experiencing development and has potential for significant suburban and exurban future growth. The Rural/Agricultural Corridor is the eastern portion of the County characterized by productive farms and stand alone communities. The American Bottoms Corridor municipalities along the Mississippi

River contain about 41 percent of the County's residents. Land uses include mature residential neighborhoods, traditional downtowns, industrial areas, and arterial commercial developments. The urban density is made possible by the sewer and water infrastructure of the river communities and the land use diversity is a result of historic development patterns in the American Bottoms. This area is also the County's center for employment and recreational opportunities such as Horseshoe Lake, the Gateway International Raceway, St. Louis Regional Airport, Granite City Steel, Shell Oil Refinery, and much more, including a 2700-acre Industrial/Commercial Park. The American Bottoms is the dominant physical feature of this Corridor and contributes to the strong sense of place and community character of the municipalities in this corridor. Water resource management is of concern in this area, especially in storm water management.

This urban corridor will continue to develop primarily under the influence of these communities. The development strategy for this area includes industrial development, downtown revitalization, neighborhood preservation and redevelopment, infill development, tourism and recreation. As the communities in this Corridor grow and prosper, coordinated planning will be needed to ensure coordinated development.

The Bluffs Corridor of Madison County is rapidly changing. This is due to development pressures, environmental issues, and the visual character of the countryside. It is "critical" that municipalities and the County cooperatively plan for managed growth in this area. This growth area provides an opportunity for balanced growth that can accommodate higher densities with open space. The continuing transition of this area can be



accomplished while protecting the environment, and still accommodate projected population growth.

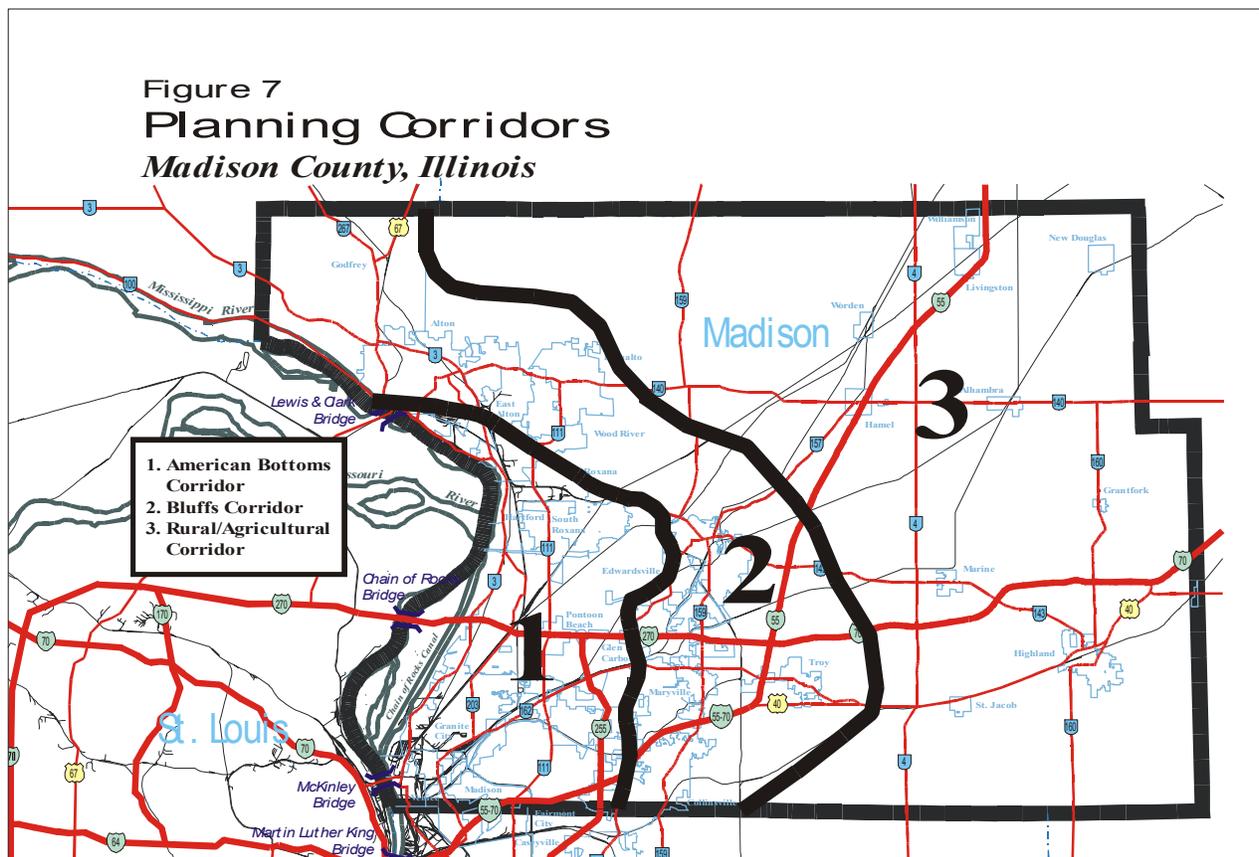
In the Bluffs Corridor emphasis is placed on water resource management, residential densities, and clustering of commercial retail and services adjacent to existing municipalities. Strategically, the Bluffs Corridor presents opportunities for future planned growth to create a transition from city to countryside. The eastern areas of Madison County, the Rural/Agricultural Corridor, will experience the fewest changes over the next 20 years. The land use strategy for this area combines rural development opportunities with protection of the extensive farmland resources from premature conversion to other permanent land uses. In addition the strategy includes promoting the development of agricultural support facilities and services and the orderly growth of the villages. The villages will continue to grow and serve as cultural, social, and residential centers in this rich farmland area. Residential development outside of the villages will generally be low density and should occur on less productive soils, wooded areas, and as infill to existing subdivisions. An emphasis will be placed on avoiding conflicts between agricultural operations and these residential opportunities.

Cooperative Planning

Madison County is rapidly approaching a crossroads due to increasing growth, expanding municipal boundaries, and renewed pressure on open space and natural resources. At this crossroads, there are two choices: balanced, managed growth or conventional suburban sprawl. The choice of balanced growth will retain the unique character of Madison County and its communities and preserve its physical beauty and natural resources. The second choice, suburban sprawl, has become the norm in metropolitan areas and is the result of competitive, uncooperative, and unplanned development. The success of this Plan and balanced, managed growth depends on the support and cooperation of the cities and villages with the County because this is where expanding municipal boundaries, expensive public

improvements, and many critical land use decisions will occur.

To facilitate cooperative planning, land management areas, or Planning Partnership Areas (PPAs) should be designated. PPA cooperative agreements should initially be developed with communities that have adopted community Land Use Plans. The PPAs indicate areas of projected growth and/or link areas of the County with common features or interests. Because of this commonality, the County and the community(ies) in a Planning Partnership area will be better able to coordinate and guide development for each Partnership Area. These partnerships should initially focus on wise management of common land and water resources and the achievement of widely shared values and common goals.



PLAN GOALS

The development of goals begins with values, which are translated into objectives, from which policies aimed at achieving the established goals are generated. The range of policies that can and should be adopted is limited by the values themselves. This factor suggests which policies can work and which cannot. In many cases, while a certain policy would work, the more powerful desires of society will not permit it to work. In essence then, these values, goals, objectives, and policies constitute a body of development factors; and they define the future development of a planning area.

Values:

Values are widely shared concepts of what is good or bad. Value-oriented planning is concerned with achieving that which is in conformity with a community's conscience.

Goals:

Goals are an expression of values; they are abstractions, providing direction towards a condition to be sought. Goals are not specifically measurable end products, but reflect the desires of a community to maintain and improve the quality of life of its citizens.

Objectives:

Objectives are the means of achieving stated goals. They are specific statements of purpose that serve as a guide for public policy and action. Objectives are measurable and achievable.



Policies:

Policies translate objectives into useful and understandable decision guidelines. Policies are to be fully considered and evaluated when allocating resources, making public improvements, directing growth, and receiving development proposals. Policies provide direction for subsequent actions.

The attainment of the goals of this Plan is a long-term process. As Madison County grows and develops, the values, goals, objectives, and policies of its citizens and elected officials will evolve. The Plan should be reviewed every five years, with citizen input, in light of changing demographics, changes in state or federal policies, major infrastructure improvements, major shifts in the regional employment base, public policy decisions, and economic and employment activities. At that time the Land Resources Management Plan should be revised as appropriate by the elected officials of Madison County.

Although they are general in nature, these eight goals can be achieved through the more specific objectives and policies that have been identified for the County in the planning issues section of the Plan. These issues are: Agriculture, Residential Development,

PLAN GOALS

Guidance for the Plan was established through the development of the following goals. The Plan pursues these goals by presenting objective policies and implementation actions designed to guide future development of the County. Objectives and policies are presented in each “Planning Issue” discussion in the Plan report.

1. **Agriculture Preservation.** Prevent the premature conversion of agricultural lands for other development related land uses. In the Rural/Agricultural Corridor and selected locations within the American Bottoms and Bluffs Corridors.
2. **Employment.** Strengthen and expand Madison County’s position as an economically diversified County.
3. **Environmental Considerations.** Plan and guide development that results in an attractive and healthful total environment, both natural and man-made.
4. **Housing.** Ensure that housing of all sizes, types, and prices are available to County residents.
5. **Managed/Sensible Growth.** Adopt an approach to development that promotes economic development while preserving open space, minimizing the need for costly new infrastructure and improving the viability of communities.
6. **Natural Resources.** Incorporate the concepts of conservation and wise use of the soil, air, water resources and the natural environment of Madison County into all development decisions.
7. **Open Space and Recreation.** Protect, maintain and enhance the visual character and recreational opportunities of and within Madison County.
8. **Transportation.** Provide safe, efficient transportation systems that serve to guide future development and that are compatible with existing land use.

PLANNING ISSUES

PURPOSE

The purpose of this Section is to identify, describe and discuss issues which form the core of the 2020 Land Use And Resource Management Plan. This identification, description and discussion are primary considerations when designating proposed land uses and recommended plan implementation measures.

AGRICULTURE

Objectives

1. To protect farmland, a valuable natural resource and an economically productive land use, from premature conversion to other land uses.
2. To minimize conflicts and incompatibilities between agriculture and other land uses.
3. To encourage and promote agriculturally related businesses as a valued element of the Madison County economy.
4. To encourage the effective use of agricultural land in achieving soil conservation goals.
5. To discourage the use of public funds for projects that will have a detrimental impact on the preservation of any designated agricultural lands.
6. To support incentives and assist property owners in maintaining agricultural lands.

Issue Focus

Like much of Illinois, Madison County has some of the most productive farmland in the world. Agriculture has been the dominant land use in the County for decades and still occupies a large percentage of its unincorporated land. As an industry, agriculture plays a vital role in the County's economy. The encroachment of development and conflicts that arise between farm and non-farm land uses is a major threat to agriculture. This plan strongly discourages premature conversion of farmland through protective land use strategies and by guiding residential development toward planned growth areas.

This Planning issue will examine:

- Agriculture in Illinois
- Roles of Agriculture in Madison County
- Capitalizing From Agriculture
- Agricultural Protection
- Conserving Agricultural Land

Agriculture In The United States And Illinois

Data sources with different reporting time periods have been used for this issue discussion. The latest information from each source has been used as appropriate. Illinois is a major producer of agricultural products in the United States. In 1997, the U.S. Census of Agriculture indicated that Madison County farmers produced more than 2,194,717 bushels of wheat; 10,473,012 bushels of corn, and 3,807,252 bushels of soybeans. In 1996 Illinois exported \$1,638,600,000 of feed grains; \$1,375,400,000 of soybeans and \$222,500,000 of wheat. Much of this production was exported to feed populations in other parts of the world.

Illinois is among the leaders of all states in the U.S. in the production of food and fiber. In 1996, Illinois was second in cash earned from all crops 16th in cash earned from livestock,

and 5th in total cash earnings (crops and livestock). That same year Illinois ranked second in production of corn and soybeans, and fourth in the number of hogs and pigs marketed. In 1993, more than 94,000 people in Illinois were employed in agriculture and related industries (1.7 percent of the State's work force).

Role Of Agriculture In Madison County

In 1998, the cash receipts of Madison County agricultural products totaled slightly over \$83,000,000 virtually the same as in 1995.

In 1998, County farmers harvested an average of 127 bushels of corn per acre which is ten percent less than the state average of 141. This amounted to 10.5 million bushels. The same year the County harvested nearly 4.8 million bushels of soybean at an average of 40 bushels per acre, which is ten percent less than the state average. Madison County, in 1998, harvested 2.3 million bushels of wheat at an average of 49 bushels per acre.

Corn, wheat, soybeans, small grains, and nursery and greenhouse crops accounted for 78 percent of the market value of agricultural products 1998. The remaining 22 percent can be accounted for by livestock, poultry, and related products.

The economic importance of corn and soybeans crops is underscored by Figure 8.

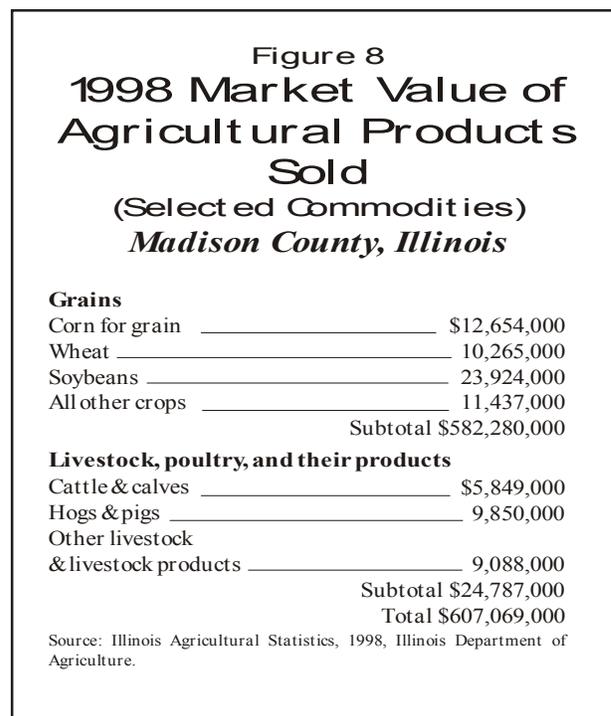
Since 1959, Madison County has witnessed a near 50 percent decrease in the number of farms. However, this decline has been offset by a 65 percent increase in the average farm size.

In 1997, 35 percent of all farms in Madison County were less than 50 acres in size, 50 percent were between 50 - 500 acres, and 15

percent were greater than 500 acres. Madison County also saw an increase in the average market value of agriculture products sold.

Agriculture is an integral part of Madison County's economy, landscape, and natural resource base. Agriculture will continue to contribute to a stable and diversified economy, especially as the variety of agricultural crops and products has increased in response to changing markets. Agribusiness services and facilities support the farm economy and need a strong agricultural base for their success. The farm economy indirectly creates jobs in equipment sales and service, seed research and sales, fertilizer and herbicide sales, finance and insurance, food processing industries, and shipping.

Agriculture in Madison County accounts for 283,608 acres of land or 60 percent of the total land cover. Cropland accounts for 87 percent of the agricultural total. Madison County is ranked 5th in acreage in small grains in the State of Illinois.



Capitalizing From Agriculture

Madison County is the home of the Tri-City Regional Port District a large inland river port with access to domestic and international markets.

The Port District was created in 1959 and has a prime directive to promote transportation, industrial and commercial activities within its territory. The facility is 77 square miles and has several port sites for harbor-related uses, its industrial parks and Foreign Trade Zone #31 activities.

Since its earliest days of settlement, this Port area has developed in large part as a result of the transportation advantages it possesses. The Port is served by the U.S. Inland Waterways System connecting Tri-City Port with industrial centers in 15 states along the Mississippi, Missouri, Ohio, Illinois and Tennessee Rivers with the Great Lakes of Canada and the Gulf of Mexico; four interstate highways and two inner-urban ring-interstate highways; Norfolk Southern railway with nearby interconnections to nine other major rail carriers resulting in the area being ranked as the third largest rail/freight center in the nation; St. Louis Lambert International Airport 25 minutes away (St. Louis County), St. Louis Regional Airport (Madison County), St. Louis Downtown Parks Airport (St. Clair County), and Mid-America Airport in St. Clair County, Illinois, an expansion of Scott Air Force Base; and 197 motor carriers that service the St. Louis region. This transportation description illustrates the importance of transportation systems to the County's economy, and to agriculture in particular.

The County has historically experienced strong sales in grain and livestock and an emerging area of consumer oriented sales from nursery's,

greenhouse operation and direct consumer sales is increasing. As Madison County continues its urbanizing trend, increasing amounts of land will be removed from grain and livestock operations. One area of future focus should be on consumer oriented sales since these activities are high valued, high intensity land uses that typically locate in proximity to urban areas.

Agricultural Protection

Major threats to agriculture in Madison County are encroaching urbanization and the conflicts and incompatibilities that arise between farm and non-farm uses. Many intruding non-farm uses in agricultural areas not only permanently remove the land from production, but also create new problems. These include bringing conflicting land uses into contact, stimulating land speculation, and increasing property assessments and the costs of public services. Further, encroaching development discourages new investments in farm improvements and causes crop losses due to the disruption of drainage systems and vandalism. The new non-farm neighbors must contend with odors, dust, noise, and other conditions naturally present in agricultural areas.

Figure 9
Madison County Farms
Madison County, Illinois

	<u>Number of Farms</u>	<u>Avg. Farm Size (acres)</u>	<u>Land in Farms (acre)</u>
1959	2522	140	354,024
1964	2312	150	346,496
1969	2171	161	349,801
1974	1883	172	324,745
1978	1754	190	333,248
1982	1735	189	327,738
1987	1500	214	321,662
1992	1299	231	299,709

Source: Census of Agriculture, Bureau of the Census, U.S. Dept. of Commerce

On July 22, 1980, Governor James R. Thompson signed Executive Order 80-4 entitled Preservation of Illinois Farmlands. It established state policy to promote the protection of Illinois farmland from unnecessary conversion and degradation. The order eventually led to the Illinois Farmland Preservation Act. The Act required state agencies to develop an agricultural land preservation policy.

This document is a strong endorsement of this policy. It encourages development within the County to occur in a manner that minimizes conflict between farming and other land uses.

Agricultural Protection

Agricultural protection is valuable because it:

- 1. Contributes to a stable economy, both locally and nationally, and provides jobs.*
- 2. Preserves a valued livelihood and way of life.*
- 3. Provides visible, private open space with its rural aesthetics and environmental benefits, including enhanced air and water quality.*
- 4. Controls storm water runoff and sediment damage, protects groundwater recharge areas, and conserves soil when appropriate farming practices are used.*

Conserving Agricultural Land

Madison County has a variety of reasons for implementing farmland protection programs. Agricultural land conservation techniques serve many purposes:

- *Protects the best farmland*

- *Protects the economic base that agriculture brings*
- *Reduce premature disinvestment in agriculture*
- *Discourages premature conversion of farmland*
- *Reduces conflicts between neighbors*
- *Retains natural systems and open space*

American Farmland Trust has produced an overview of the most common farmland protection techniques in use around the country. They are as follows:

- **Purchase Of Agricultural Conservation Easements** also known as purchase of development rights, is a land conservation technique that helps communities protect one of their most threatened natural resources — prime and important farmland — from conversion to non-agricultural use. In PACE programs, a government agency or nonprofit organization, such as a land trust, buys a conservation easement on qualified farmland. This agreement is recorded with the deed to limit the future use of the land to agriculture, of course with certain benefits to the owner. Depending upon the program, it may be permanent or in place for a designated period of time.
- **Transfer Of Development Rights** programs are intended to maintain designated areas in agricultural or open space use while, at the same time, compensating the owners of the protected land for the loss of their right to develop it for non-farm purposes. A typical TDR system establishes both a protection district and a development district. Landowners in the protection district are assigned development rights, but are not allowed to develop their property. Instead, they may sell their development rights to

landowners in the development district who may then use these rights to build at higher densities than allowed under current zoning guidelines.

- **Agricultural Districts** are legally recognized geographic areas formed voluntarily by one or more landowners and approved by one or more government agencies. Districting programs are based on the premise that if farmers are given sufficient incentives to create districts in which farming is the primary activity allowed, and if they are protected from many of the factors that make farming undesirable or unprofitable, they will keep their land in agricultural use.
- **Agricultural Zoning** A particular zoning technique a community selects for protecting farmland should be based on a variety of factors including land development patterns, parcel sizes and unique local concerns. Following are descriptions of five different agricultural zoning techniques:
- **Point/Numerical Approach-** permits non-farm uses on a case-by-case basis, relying on specific standards to gauge the impact of the land use on farmland.
- **Conditional Use-permits** non-farm uses on a conditional basis relying on discretionary standards. It is also a special land use permit approach. Non-farm uses may or may not be permitted by the zoning authority whose decision is usually based on several criteria.
- **Sliding Scale-**The number of buildable lots allowed under the sliding-scale approach is set by a scale that considers the total size of the parcel owned. Smaller parcels are allowed proportionally more lot

splits to total acreage than are larger parcels.

- **Quarter/Quarter-**each landowner is entitled to one lot per 40 acres of farmland. Once the farmer has converted the lot or lots he or she is entitled to, it becomes a matter of record, and no further non-farmland development on the parcel is permitted.
- **Exclusive Agricultural Zoning-**prohibits all non-farm dwellings in the agricultural zone and severely restricts other non-farm uses. Some special exception uses related to agriculture may be permitted, but non-farm dwelling units are not permitted.

Other techniques used to conserve farmland include:

- **Subdivision Ordinances** which govern the design of permitted new development and the functioning of development, such as traffic circulation. It sets standards for the division of larger parcels of land into smaller ones, specifying the location of streets, utilities and other improvements.
- **Clustering is a design** technique that combines zoning and subdivision regulation to permit clustering of housing units and, unlike traditional zoning, allows for mixture of uses.
- **Planned Unit Development** allows increased residential density clustered on a small part of the agricultural parcel while retaining the balance of the land for long-term agricultural production.
- **Agricultural Buffers** are well-defined areas located between non-agricultural development and agricultural land. The purpose is to shield agricultural operations

from the effects of development and to protect residential areas from the effects of agricultural operations.

- **Intergovernmental Agreements** are voluntary and are negotiated between cities and the County to protect farmland and establish buffers between cities.
- **Right-to-Farm Ordinances** act to preserve existing farms and protect farming operations from complaints of

suburban newcomers. These ordinances makes it more difficult for homeowners to claim their property rights are being infringed on by a nearby farm operation if the operation was in existence when the homeowners bought their property.

- **Incentive Programs** which provide financial incentives for long-term protection of farmland.

AGRICULTURE **Policies**

1. Protect land best suited for farming from premature conversion by other land uses, and maintain agriculture as an integral part of the County's economy, landscape, and natural resource base.
2. Support incentives to retain farmland, and further limit the circumstances under which farmland operations may be deemed a nuisance.
3. Encourage and support the use of county produced farm products through activities such as farmers' markets and urban produce markets.
4. Support agribusiness services and facilities, such as equipment sales and service, research facilities, nurseries and greenhouses, genetic research, grain dryers, grain elevators and fertilizer services.
5. Encourage, where appropriate, agricultural land use categories in municipal land use plans, and establish transitional areas between development and agricultural land.
6. Support Executive Order 80-4, Preservation of Illinois Farmland and the Illinois Farmland Preservation Act.

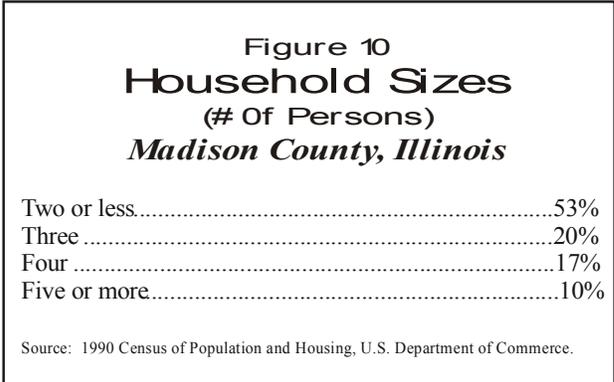
**RESIDENTIAL DEVELOPMENT
Objectives**

1. To encourage a variety of housing types to meet the needs of different age groups, family sizes and incomes.
2. To live in cities and neighborhoods that are safe, free from environmental and public health hazards, and buffered from incompatible land uses.
3. To ensure orderly County and municipal development with residential land uses and densities consistent with local and County plans.
4. To provide rural residential housing opportunities for those desiring a rural living environment.
5. To encourage and require the appropriate use of Open Space Design principles and techniques in County and municipal planning in a manner that complements the rural nature of the County and as an alternative to conventional suburban sprawl.
6. To maintain existing housing stocks in a safe, attractive manner.

Issue Focus

Residential land use is the second largest land use in Madison County after agriculture. Of the total land area, urban uses occupy only 18.4 percent while rural uses occupy the remaining 81.6 percent. The number and size of houses being built in Madison County is increasing, but the household size is decreasing. Much of the land is being used to build larger houses for fewer people. Single family detached housing is the dominant housing type in the County.

Madison County’s goal is to provide a variety of housing types to accommodate different groups of people, family sizes, and incomes. At the same time, it is important to provide a sense of community, rather than to contribute to conventional suburban sprawl. The County encourages the use of Open Space Design to accentuate the rural fabric of the County.



This planning issue examines:

- Household size
- Housing stock
- Diversity of housing
- Residential Character

Household Size

Madison County has seen a gain in the total number of small households due to a trend to smaller families, couples without children, one

parent households, empty nesters, and persons living alone. See Figure 10, Household Sizes.

Taking a look at the total occupied residential units in the County, over half (approximately 53 percent) consist of households with two or less people. Of the remaining residential units, 20 percent have 3 persons, 17 percent have 4, and the remaining 10 percent have 5 or more.

Several social patterns in the region also contribute to smaller households. These include an increase in the number of married couples, with no children living at home, and the number of single persons - never married or divorced.

Housing Stock

Most of the housing in Madison County was built in three eras: 73% of houses were built before 1959; 13 percent between 1960-1979; and the remaining 14 percent from 1980 to 1990. Madison County saw a 7 percent increase in the number of houses built between 1980-1990 which is lower than the 11 percent increase that occurred between 1970 and 1980.

Most new homes being constructed in Madison County are single family homes. In 1990, 76 percent of the housing stock was single family detached or attached, which was slightly lower than the 77.7 percent in 1980. There has been a 1.5 percent increase in the percentage of the population living in mobile homes.

In 1990, 41 percent of the owner-occupied housing units valued at less than \$50,000, 36 percent fell in the range of \$50,000 - \$99,999, and the remaining 23% valued at above \$100,000.

Over the past few years, some rural areas in Madison County are becoming more



urbanized. As a result, the number of housing units classified as being in rural areas is decreasing, while that in urbanized areas is increasing.

Madison County has a low ratio of single family to multiple family housing units. The majority of the multiple family units (townhomes, condominiums, duplexes, apartments, and accessory units) are found within the municipalities. From 1980 to 1990 the number of multiple family housing units in Madison County has increased by 9 percent.

Madison County is split into two primary divisions, the Bottoms and the Uplands, as a

Figure 11
Units Per
Residential Structure
Madison County, Illinois

	1980	1990	Percent Change
Single Family	72,792	76,820	5%
Multi-Family	17,487	19,061	9%
Other(including mobile homes and trailers	3,348	5,217	56%
Total	93,627	101,098	

Source: 1980, 1990 Summary Population and Housing Characteristics. Bureau of the Census. U.S. Department of Commerce

direct result of the changing course of the Mississippi River. Now, more than 60 percent of the population resides in municipalities and rural areas in the Uplands; with about 40 percent in the Bottoms. The location of housing development in both the Bottoms and the Uplands is appropriate because of employment opportunities, transportation facilities, shopping and service facilities, and sewer and water services. A part of the County's long term goals is to provide a variety of housing opportunities for different age groups, family sizes, and incomes and to reduce the rate of consumption of its land resources.

Housing diversity can be obtained by constructing attached or multi-family housing such as townhouses, condominiums, duplexes, apartments, and accessory units in the Urban Corridors where density is usually greater than four dwelling units per acre and also on the urban fringe.

Residential Character

As Madison County grows, the County will continue to be challenged to provide housing in a manner that creates a sense of community, rather than a sense of conventional suburban sprawl developments, that preserves land and emphasizes open space, particularly in the urban fringe and in rural areas. New development should fit into the town fabric and help reinforce a local sense of place. Residential character - the appearance and feeling of a residential area- helps to create a sense of community as people take pride in their home and neighborhood. Good residential character is neighborhood-oriented and is integrated with the natural environment.

Open Space Development Design is a residential character and community design alternative that maximizes open space, natural landscaping, and natural resources. The open space that often exists around the edges, and occasionally occurs also as scattered pieces of undeveloped land throughout the community is often taken for granted. Few things change the character of small towns and rural communities more than the conversion of these natural areas to development. Although people take them for granted, they are strongly affected when a building or parking lot sprouts up on this land. These spaces are appreciated for their aesthetics, recreation, or sporting benefits, and often holds deep meaning for long-term residents.

Open space planning aims to preserve the natural resources of the area while providing many other benefits. This type of design limits certain types of development in these areas as well as provides a strong sense of community and aesthetics to a neighborhood.

Some hallmarks of Open Space Design are:

- Mixed land uses including diversified residential, and farming or recreational uses.
- Variety of open space areas and functions.
- Protection and enhancement of natural features and landscapes including creeks, wooded areas, hedgerows, landforms, visual links, and emphasis on the use of native plants in landscaping.
- Preservation of land for farming, forestry, watershed management, wildlife habitat, informal recreation or some combination of the above.

RESIDENTIAL DEVELOPMENT
Policies

1. Encourage an open housing market throughout the entire County which provides housing regardless of age, race, religion, ethnic background, or income levels.
2. Discourage residential development in areas where it would be detrimental to County farmland preservation goals.
3. Promote and encourage rural residential development that is consistent with the ability of the community to provide services.
4. Apply best management practices to the development of land with physical limitations for septic systems and high erosion potential.
5. Require that residential developments preserve and enhance natural features such as vegetation, wildlife, waterways, wetlands, topography and scenic vistas.
6. Require that new development adjacent to farms provide a suitable buffer through the use of berms and/or natural landscaping.
7. Consider development regulation revisions that reflect new techniques and innovations to facilitate housing development, rehabilitation, and construction.
8. Require development to be pedestrian, bicycle, and transit friendly, when possible.

COMMERCIAL/OFFICE Objectives

1. To facilitate the retention and expansion of employment opportunities resulting from existing commercial and office uses.
2. To provide an adequate supply of goods and services throughout Madison County.
3. To promote new employment opportunities by stimulating the growth by attracting new commercial and office developments.
4. To encourage the growth of agricultural-related business in farmland areas.
5. To encourage all developments to be compatible with surrounding land uses.
6. To encourage the redevelopment and improvement of older centers and buildings.

Issue Focus

Commercial and office services land uses provide the major percentage of jobs in Madison County and are one of the primary sources of local governmental revenue from sales and property taxes. The variety of commercial land uses includes traditional downtown, heavy commercial, urban arteries, neighborhood, highway and rural/agricultural. Services are also within this land use category. The various commercial and office development types are most often either attractive contributors to the area's well-being or sprawling cluttered development.

This planning issue examines: The Commercial Environment of Madison County

Madison County has benefited from a slowly expanding economy over the past five years. Total employment increased nine percent during this time frame. Employment in the Commercial and Services sectors grew 16 percent providing 70,625 jobs or 60 percent of the total employment opportunities within the County in 1994.



A variety of office services have accounted for 69 percent of the growth in commercial jobs from 1989 to 1994. Services available range from professional, traditionally urban services such as doctors and attorneys to rural agriculturally-oriented services, like veterinarians. There is a trend toward increasing home-office occupations that, while not yet impacting land use, cannot be ignored.

The number of businesses and the value of each business has been growing steadily. From 1992 to 1995 the number of retail sales

taxpayers has increased from 15,018 to 16,870 and retail sales have increased 18 percent to reach \$1.65 billion. The sales per taxpayer went from \$93,001 in 1992 to \$97,840 in 1995. As expected, the Automotive and General Merchandise categories are the largest sales contributors with \$623 million and \$297 million respectively. The greatest increases come from the Automotive (up 31 percent) and the Manufacturing (up 30 percent) categories. Only the Food and Apparel categories show some distress with a combined decrease of 12 percent, however these two categories make up only 7 percent of all retail sales tax collected.

Commercial Development Areas

The majority of the commercial area in Madison County stretches from Collinsville to Godfrey roughly following the bends of the Mississippi River. Troy is experiencing some commercial growth due to its location on the fringe of the main urbanized area and its proximity to Interstates 55 and 70. Highland is becoming a nucleus of commercial activity in the southeastern portion of the County. Most commercial development is occurring along transportation corridors in, or very near, municipalities. Degrees of usage can be grouped into six classes: heavy commercial, urban downtowns, urban arteries, neighborhood commercial, highway commercial and rural/agriculture commercial.

Heavy Commercial

This land use category includes regional malls, office and technology parks, and areas of intensive commercial activity within the municipalities of the urbanized areas mentioned above. Large clustering of office uses and office parks would also fit this category. These areas are of vital importance to the cities in which they are located. They



supply a constant stream of revenue and draw in the regional population. It should be noted that there seems to be a trend among consumers to spend less time driving to shopping destinations. Therefore, these uses are not attracting from as large a market area as they once were and they are seeking new ways to attract those consumers. The rise of shopping at home by catalog from many of the major retailers, from the internet and the increase in home occupations may account for part of this trend. Two wage earner families and the rise of single parent household may also decrease the personal time available to this group of consumers for shopping.

Urban Downtowns

This category consists of the core of most of the municipalities in the urbanized areas and is characterized by historical architecture, involved merchant organizations, festivals, and the presence of city governmental buildings. Like most downtowns throughout the country, the existence of large retailers has dwindled. Offices and small shops have taken the place of large groceries and department stores. Some of the Madison County downtowns are faced with deteriorating buildings, traffic congestion, parking problems, and crime. These detriments may

be real or perceived, but must be addressed to encourage retention and growth.

Services include banks, attorneys, and financial advisors while goods have become primarily specialty items and restaurants. Each downtown is unique and should be cultivated and encouraged to exploit this uniqueness to optimize its effect on the Madison County economy.

Urban Arteries

This land use category of urban arteries may or may not be within a municipality. This use differs from Highway Commercial in that while it is not necessarily in a city or town, it will always be found nearby. This category includes strip developments and is primarily dependent on the traffic count of the artery. Uses catering to automobile traffic are prevalent, such as fast food restaurants. Office uses are less common, but are included. Madison County's network of interstate and state highways encourages these uses throughout the unincorporated land near the urbanized area. This type of development beyond city limits and services can lead to leap-frog development and sprawl. Madison County should work to mitigate these undesirable circumstances and work to encourage alternative sites closer to city centers. It is one thing to discuss these problems but in the absence of County-municipal cooperation, nothing will change.

Neighborhood Commercial

This land use category, primarily in cities but not always, encompasses the remainder of small commercial shops or offices not in a major commercial area, downtown, or along an artery. This category includes planned residential developments incorporating a clustering of commercial to serve the



developments residents and may include some of the more rural community non-agricultural uses. These developments serve a variety of needs as determined by the surrounding neighborhood. These may be existing uses resulting from legal non-conforming uses or zoning variances. Where possible, the County should review and encourage uses providing adequate services and compatibility with the neighborhood.

Highway Commercial

This land use category differs from urban arteries in that this commercial strip exists in an unincorporated area and may be somewhat distant from a city or town. This use is dependent on the transportation corridor, not necessarily on an urban area of any sort. This use includes truck stops, gas stations, restaurants, and motels and is commonly found at interchanges. There are virtually no surrounding land uses save agriculture. The County must ensure that these uses are spaced reasonably along limited access highways and interstates, but this use should be discouraged unless adequate services are available. The County should plan the uses at these interchanges so undesirable commercial services do not develop.

Rural/Agricultural Commercial

This land use category serves the important task of servicing distribution and processing for agricultural products and farmlands. These uses are vital as the agriculture components of the economy continue to provide a steady

source of income for much of the County. These uses should be encouraged to develop within rural municipalities and elsewhere to strengthen the bond between village and farm. Redevelopment of existing buildings should be encouraged for steady solid growth in these communities.

COMMERCIAL/OFFICE **Policies**

1. Cooperate with local units of government and chambers of commerce to support and provide programs of benefit to existing employers and that are attractive to potential employers.
2. Work with rural communities to expand commercial and office opportunities that meet rural needs.
3. Establish and recommend high quality design and preservation standards for new development throughout the County.
4. Work with municipalities concerning the detriments of unplanned development outside municipal boundaries and seek to prevent this practice.
5. Prevent sprawling non-agricultural uses in unincorporated areas that are not an integral part of an area development plan, and encourage appropriate transportation-serving uses at highway interchanges with interchange area plans.
6. Support and assist the preservation of downtown buildings as redevelopment opportunities.
7. Encourage planned commercial and office parks to maximize infrastructure investment to reduce storm water impacts and to produce a more efficient commercial environment.
8. Work with areawide economic development organizations and others to assist in the retention and expansion of existing businesses.

INDUSTRY Objectives

1. To facilitate the retention and expansion of employment opportunities resulting from the existing industrial base and by attracting new industrial development.
2. To encourage redevelopment of older industrial sites and buildings.
3. To encourage the coordination of industrial development activities on a countywide basis.
4. To encourage industrial development compatible with surrounding land uses.
5. To support and cooperate with area vocational schools, colleges and universities in job training and encourage opportunities for technological development and implementation in Madison County.

Issue Focus

Industrial development is an extremely competitive area and the jobs inherent in industrial development are coveted by virtually all local governments. Madison County has a strong industrial development history and a continuing industrial presence that provides 25 percent of the jobs in the County. The County has a strong transportation system that includes all the primary transportation modes as well as large varied areas for industrial development. Madison County history and favorable factors for industrial development can only be enhanced if additional intergovernmental cooperation could be combined with coordinated efforts to retain and attract additional industry.

This planning issue will examine:

- The Industrial Environment
- Existing Industrial Location
- Industrial Development

The Industrial Environment in Madison County

The industrial sector of the local economy provides approximately 25 percent of the jobs in Madison County. During the years from 1989 to 1994, employment in this sector remained static. While there was a 2 percent decrease in manufacturing, construction experienced a 4 percent gain in employment from 1989 to 1994. However, the number of manufacturing jobs in Madison County has declined 22 percent since 1970. Economic forecasts indicate that the number of manufacturing jobs will decline with service, research and development businesses replacing manufacturing jobs. As the

**Figure 12
Industrial
Establishments
1970-1994
Madison County, Illinois**

Year	# of Establishments	1st. Qtr. Employees	1st. Qtr. Payroll
1994	829	25,064	\$216,635,000
1970	545	37,540	\$225,894,000*

Source: County Business Patterns, 1970, 1994 *In 1994 Dollars

industrial sector of the national industrial economy becomes more globally competitive, the Madison County industrial environment should follow this trend. To maintain competitiveness, industry will continually look for new technologies and processes that will in turn require workers to continually update their skill level. To meet the needs of industry and residents in the next century, Madison County should encourage (1) continuing education programs that provide a well trained work force, (2) expand the existing job base within the County, and (3) achieving a land use pattern that balances housing and jobs.



During the past 24 years the number of industrial firms has increased by 284 firms or 52 percent while the number of employees for this sample mid-March pay period decreased by 12,476 persons. The employee number is lower, and may be somewhat misleading because it is a snapshot of just one payroll period. It is important to note that the first quarter payroll number, in 1994 dollars has decreased only slightly during the time frame.

Existing Industrial Locations

Industrial uses exist in most Madison County municipalities and account for most of the traditional manufacturing jobs where sewer, water and electrical power are readily available. The following narrative describes the geographic breakdown of industries within each corridor in the County.

The American Bottoms Corridor

The industry of the river valley is characterized by large “smokestack” manufacturers, steel mills and refineries which account for most of the traditional manufacturing jobs. This area benefits from close proximity to the Mississippi River which has long been an asset to manufacturers by allowing them to ship

goods easily and cost effectively in and out of their facilities. Rail and highway transportation access also adds to the efficiency in the movement of goods. Important features of this area include:

- Lock & Dam #27 and #26
- Foreign Trade Zone #31
- Tri-City Regional Port District
- Chain of Rocks Canal
- Melvin Price Support Center, U.S. Army Base

A new industrial corridor is emerging along the proposed I-255 extension north of I-270. The 2700-acre Gateway Commerce Center is quickly becoming a reality for manufacturing, distribution and warehousing activities.

The Bluffs Corridor

The urban river bluff area serves many support functions for the heavy industry of the river valley. From an infrastructure perspective, the area enjoys the convergence of several interstate highways, an airport, and several major rail lines. Also located here are several educational facilities and governmental offices. Smaller industries exist mainly in pockets disbursed throughout residential areas

or in community industrial parks. Industrial areas exist in the City of Troy, a corridor along I-255 adjacent to Edwardsville and at scattered sites in the Bluffs Corridor.

The Rural/Agricultural Corridor

The rural portion of Madison County, with few exceptions, does not include any large industrial installations. Highland enjoys a large electrical manufacturing plant, among other manufacturers, but most of the remaining communities do not have this benefit.

Industrial Development

Most industrial land uses have occurred within cities and villages because this is where the necessary infrastructure is located. Greater benefits can be obtained if the County and municipalities work together to mitigate the potentially adverse impacts of industrial development such as pollution, congestion and other problems.

It is important that County communities strive for a good mix of housing and job creation with appropriate buffers in between, so that sprawl is minimized and community character is maintained. Several of the older communities urban industrial areas need to focus on redevelopment of existing sites so that pockets of brownfields (vacant industrial areas which are possibly contaminated) are not empty parcels that do not contribute significantly to the community. Areas that are ripe for redevelopment exist in the communities of Alton, Granite City and other communities that have experienced an out migration of manufacturing. In addition, the reuse of vacant industrial areas will allow existing agricultural land to continue to be productive in an agricultural capacity and allow for maximum utilization of current infrastructure thereby reducing the need and

Figure 13
Current
Non-attainment
Areas
Madison County, Illinois

County/ Township	Particulate Matter	Ozone
Madison Co.	-----	Moderate Non-attainment
Granite City Twp.	Moderate Non-attainment	-----
Nameoki Twp.	Moderate Non-attainment	-----

Source: U.S.E.P.A.

the associated costs for infrastructure extension. While being cognizant of the above, the area which will most probably experience development is the area along I-255. The advantages of this area are the proximity to downtown St. Louis, good transportation access and the greenfield (free of contaminants) classification associated with this property.

The County, because of its proximity to St. Louis, must be aware of the impacts of development on the entire St. Louis region. An example of this is the threat of federally imposed sanctions on development due to St. Louis air quality. Under the Environmental Protection Agency rules (enacted in July, 1997, but not currently in effect) Madison County would be branded a “non-attainment area” for ozone with the limit of 0.08 part for every million over an eight-hour period. New standards would be enacted for particulate matter also. Current standards classify Madison County as a “Moderate” non-attainment of ozone standards.

Figure 13 is a breakdown of current non-attainment areas.

Madison County should continue to encourage development in the areas where transportation and municipal services are available. This

development includes growth of existing industries and attraction of sound reasonable developments to maximize the benefits of existing infrastructure.

INDUSTRY **Policies**

1. Cooperate with the Illinois Department of Commerce and Community Affairs, the St. Louis Regional Commerce and Growth Association and others regarding the marketing and development of the industrial areas of the County.
2. Support intergovernmental agreements with municipalities who help to resolve conflicts related to economic development.
3. Support technology transfer programs that are generated at SIU-E, and utilize the resources of the University to attract industry.
4. Help villages and cities redevelop industrial areas (brownfields) which are now or have been economically important to the County.
5. Encourage and assist local communities in the promotion, retention and expansion of their local industrial base.
6. Minimize environmental factors which may constrain industrial development such as, wetlands, and stream degradation by requiring best management practices.
7. Continue to review methods and practices that will aid the coordination of countywide economic development activities.
8. Encourage the development of industrial/commercial parks where industrial development advantages exist, such as the I-255 corridor in the American Bottoms.

OPEN SPACE/RECREATION

Objectives

1. To preserve Madison County open space as the cornerstone of natural resource protection and community well-being.
2. To protect environmentally sensitive areas from deterioration or destruction by private or public actions.
3. To develop a greenway network connecting water resources, forest preserves, cultural and historic sites, and communities.
4. To foster public awareness, education, and support of environmental and open space management.
5. To enhance the County's visual identity and community character by preserving natural areas, landscapes, and scenic vistas, including the historic, cultural, and archaeological resources they incorporate.
6. To provide a variety of countywide outdoor settings and recreational activities in proportion to the needs of an expanding population.

Issue Focus

The primary functions of open space are environmental protection and community well-being. These functions are fulfilled by four categories of open space: (1) large open expanses, (2) linear greenways, (3) recreational areas and (4) natural resource protection areas. Open space can be acquired and preserved through both public and private efforts, including forest preserve and park district acquisitions, the development approval process, and dedication of conservation easements.

This planning issue examines:

- Open space armature
- Existing open space
- Functions of open space
- Future open space



Open Space Armature

Open land is being consumed at an increasing rate. Madison County is experiencing rising growth pressures that will ultimately cause some areas of the County to reach full capacity.

At this crossroads, the County has two choices: to manage growth or to allow development pressure to result in suburban sprawl.

Open space is a necessary component of development. It provides “breathing space,” environmental protection, recreational opportunities, visual beauty, educational opportunities, and countless other benefits. As the County continues to grow, the preservation and expansion of open space can balance increased population and development.

Existing Open Space

The lands that make up Madison County’s open space areas are diverse. They consist of undeveloped public and private lands, ranging from large forest tracts to small parks and playgrounds. Specifically, the County open space inventory includes municipal and township park districts, school and neighborhood playground, greenways, golf courses, bicycle/pedestrian trails, and cemeteries, recreational area, state parks, undeveloped urban infill areas, waterways, wetlands and agricultural areas. Examples include Horseshoe Lake State Recreation Area, the SIUE Campus, wetlands along streams and throughout the American Bottoms, the flood buyout areas of Chouteau Island, Belk Park, the arboretum in Bethalto, the Nature Center in Edwardsville and the trails identified on the Greenways map in this document.

Functions Of Open Space

There are two chief functions of open space: environmental protection and community well-being. Well-planned open space areas can serve both of these functions and provide a crucial link between the natural and human environments.

Open space provides environmental protection through (1) natural areas preservation (2) wildlife and native plant habitat protection; (3) surface water quality protection; (4) non-structural flood control; and (5) protection of ground water systems.

Open space provides community well-being through: (1) community identity and separation; (2) aesthetic quality, preservation; (3) recreational opportunities; (4) transportation opportunities; (5) educational and spiritual enrichment; (6) cultural and scientific resource protection; and (7) property value enhancement.

Environmental Protection

Open space is essential to the preservation of natural areas. The determination of the quality of a natural area is made by the biological diversity and stability of its plant community. Biodiversity is the variety of living things: variety in gene pools, species, and ecological communities. Areas such as the McDonough Lake area should be considered for its natural area potential. As we develop, we lose biodiversity.

Diverse flora and fauna are important to the structure and function of the ecosystems. Diverse ecosystems are healthy ecosystems, able to recover more quickly from stresses such as flood or drought. Increasingly development has fragmented and compressed natural areas resulting in a loss of plant and animal diversity. Expanses and corridors of open space preserve plant and wildlife habitat, as well as provide the continuity necessary for the migration and propagation of plant and animal species. Minimum open space corridors could be established along County streams by requiring stream side buffers.

Protection and management of a County's open space system directly benefit its water resources. Land and water resources are an interacting system. All lands in each watershed drain toward its receiving waters — and may contribute pollutants to it. In turn, these watersheds drain into the Mississippi River, a major source of potable water. Any pollutants in surface waters will also make their way into ground water aquifers, another major source of potable water in the County.

When managed wisely, greenways along waterways are effective filter strips that trap sediment and pollutants that damage water quality. The vegetation in greenways also helps remove pollutants from the air, reduce noise, and moderate summer heat and winds. Greenways provide space for streams and wetlands to function naturally and accommodate storm water flows. By protecting flood plains from development, greenways provide natural flood storage and protect people and property from flood damage. Madison County can avoid many problems by wisely managing development in areas with flooding problems, unstable soils, steep slopes, and other areas prone to erosion or water contamination. Such planning measures will prevent economic, health, and safety problems, as well as provide open space.

Storm water management, soil erosion and sedimentation controls and stream bank maintenance standards currently exist and can be used by the County.

Community Well-Being

Open space can lend form to a community by surrounding it and defining its exterior boundaries. Linear open spaces such as streams and greenways can subdivide a community into identifiable neighborhoods. It can create a central, unifying focus for

community activities centered on a community park or playground and also buffer neighborhoods from incompatible land uses. Open space can help provide a transition between the Urban Corridor and Growth Areas of the County and between Growth Areas and the Agricultural Areas.

The recreation and relaxation opportunities made possible by open space areas provide significant benefit to the physical and mental health of all members of the community. Recreation opportunities provided by open space may be passive, such as picnicking, hiking, and bicycling; or active, such as swimming, tennis, baseball, and other sports.

Greenway trails provide alternative transportation routes for walkers and bicyclists. Well-used pedestrian/bicycle trails reduce traffic congestion and improve air quality and public health. Such paths and trails also invite the community into open spaces by providing passage into and through the natural world.

Open space provides education and spiritual enrichment, and protects cultural and scientific resources. Natural, undeveloped areas afford scientists the opportunity to study how ecosystems function, especially those adjacent to urbanized areas. Open space provides places to teach children the natural sciences and appreciation for the environment. Historic and archeological resources are often located at open space sites, where they may be protected for enjoyment and study.

Open space enhances property values and community image, increases opportunities for recreation, supports commercial uses, attracts visitors, and encourages tourism.

Open Space Needs

It is in Madison County's best interest to acquire and protect sufficient open space to meet County needs into the next century. Open space is needed in three general categories: (1) large tracts of natural areas; (2) greenways and linear areas, and (3) recreational facilities and natural resource protection.

Large tracts or macro-sites of open space are needed to effectively provide Madison County with significant ecosystems. Large tracts provide the habitat required by birds, mammals, fish, and the water interdependent network of life. Such tracts will maintain the County's biodiversity and water quality, provide flood and storm water control, and serve as the foundation for balanced development. Large tracts of open space also provide scenic views which promote a sense of planned community identity, and recreational pleasure for driving and sightseeing. One such site is the Horseshoe Lake State Recreation area.

Greenways and linear areas are needed to keep natural areas connected so they can function properly. Their linear character allows plants and animals to move between larger tracts of land providing continuity of habitat and genetic disbursement. Vegetated greenways along bodies of water maintain water quality by trapping sediment and pollutants, and store flood flows and storm water runoff. Greenways with trails provide bicycle and pedestrian access between homes, shopping, schools, and parks. Greenways reduce landscape costs through the use of natural landscaping.

A variety of recreational settings will be needed by the growing population in the County. These settings can be active, passive, educational or recreational. Active recreation generally involves intensive uses and requires substantial facilities including playing fields,



swimming pools, campgrounds and tot lots. Passive recreation provides widely spaced picnic areas and trails for hiking/biking/cross country skiing. Recreational and educational facilities include nature interpretation centers, cultural and historic sites, and teaching areas. The Southwestern Illinois Greenway Plan Map, (Plate 4) identifies areas for potential future open space. Areas indicated as proposed open space are not intended to limit the actual locations or amount of open space that could be achieved by the year 2020. This proposed open space may be easily expanded as additional natural, recreational, water resources management sites or connecting greenways become available.

Extensions of the other regional greenway trails should continue. One technique for greenway preservation is through the conversion of railroads to trails. Not only is this conversion a constructive reuse, but railroads often prefer to sell land to a single purchaser

Open space will continue to be gained through the development review process. This is particularly true in Open Space Design and Planned Unit Developments (PUDs) in which open space becomes an integral part of the project design.

A countywide open space system cannot be preserved solely by government. Private individuals and non-profit organizations may place conservation easements on a piece of land so that its natural features are permanently preserved. Through this legal technique the property owner retains ownership while waiving some of his/her development rights. Conservation easements can protect natural areas that function as greenways and habitat corridors, and other sensitive areas such as wetlands, flood plains, ridge lines, slopes, and viewsheds.

Private property owners play a strong role in protecting open space. Natural landscaping, besides demanding much less maintenance than a manicured lawn, prevents soil erosion, allows ground water recharge, recycles nutrients, encourages native plant species, and provides shade and windbreak for homeowners.

Volunteers play a significant role in the public and private efforts to preserve and improve natural areas in Madison County. These volunteers come from all walks of life and contribute time and experience to park district and other programs and activities, participate in prairie burns, gather and plant prairie and wildflower seeds, and promote the value of Madison County's valuable natural areas. Their efforts should be encouraged and supported by public and private organizations.

A Madison County open space system would be a critical element in the balance between the natural and built environments. Its purpose is to provide environmental protection and community well-being. Open spaces are taken for granted until progress begins to do away with them.

OPEN SPACE/RECREATION **Policies**

1. Implement an open space and greenway system for its environmental, aesthetic, social, and economic benefit.
2. Protect biodiversity by preserving, re-generating, and restoring natural areas.
3. Incorporate environmental design criteria in development controls and County ordinances to protect natural, scenic, historic, archeological, and environmental areas and to minimize adverse impacts.
4. Require neighborhood parks and pedestrian walkways within large new subdivisions and as connections to adjacent subdivisions.
5. Encourage the acquisition and development of greenways for recreation/transportation trails and habitat corridors to implement the Regional Greenways Plan.
6. Encourage the increased use of non-acquisition techniques such as conservation easements, and dedications as useful methods for implementing local, County, and regional open space plans.
7. Coordinate open space planning and preservation with protection and maintenance of County water resources.

WATER AND SEWER RESOURCES

Objectives

1. To achieve public awareness that a major component of the natural environment is an interacting system of land and water resources.
2. To protect and enhance the quantity and quality of potable ground water and potable surface water supplies for current and future generations.
3. To protect and improve the surface water quality and beneficial uses of ponds, lakes, rivers, streams, and wetlands.
4. To reduce point source discharges of pollutants into lakes, rivers, and streams.
5. To reduce non-point source discharges of pollutants into ponds, lakes, rivers and streams.
6. Through watershed planning, foster a better understanding of our finite and irreplaceable water resources, and how they are affected by changes in the natural environment and land use and development activities.

Issue Focus

The challenge facing Madison County is to accommodate future growth and maintain high water quality and sufficient water quantity throughout the County. Watershed planning is the most effective means of addressing countywide water quality issues because it is a holistic approach that encompasses (1) minimizing impervious surfaces, (2) utilizing best management practices, and (3) cooperative governmental planning for the management of streams, lakes, wetlands, flood plains, storm water, and wastewater throughout an entire watershed.

This Planning Issue examines:

- 208 Water Quality Management Plan
- Water Resources
- Water Supply
- Water Resources Management
- Wastewater Management
- Watersheds



208 Water Quality Management Plan

In 1972 Congress approved the Clean Water Act which set very high water quality goals for the nation. The Clean Water Act requires that plans for restoring and maintaining water quality be prepared at the areawide level. In compliance with that mandate the 208

Areawide Water Quality Management Plan was endorsed by Madison County and adopted in 1979 by the Southwestern Illinois Planning Commission. The 208 Plan recommends to local governments strategies to control both point and non-point sources of pollution.

1. Restoration and maintenance of the chemical, physical, and biological integrity of the region's waters.
2. Elimination of all pollutant discharges into the region's waterways.
3. Water quality that provides for the protection and propagation of fish, shellfish, and wildlife and provides for human recreation, wherever attainable.

Point Sources:

- Conventional wastewater treatment plants
- Combined sewer overflows
- Industrial plants
- Illegal septic pumpage dumping
- Yard waste dumping
- Mining operations
- Landfills
- Feed lot and livestock runoff

Non-Point Sources:

- Construction site soil erosion
- Agricultural soil erosion
- Agricultural chemical runoff
- Lawn chemical runoff
- Impervious surface runoff, including oils, grease, gasoline spills, tire wear, de-icing salts, etc., from roadways, driveways and parking lots
- Acid rain from air pollution

Water Resources

The hydrological cycle is the movement of water from the oceans to the atmosphere and land, then back to the oceans. It is complex and interrelated system essential to life on earth. The hydrologic cycle has the remarkable ability to maintain clean, stable water quality and can remove or convert limited quantities of pollutants.

The two major components of Madison County's water resources are surface waters and ground waters aquifers.

Surface waters are the direct result of rainfall or the result of ground water being exposed at the earth's surface. Surface waters take the form of streams, rivers, wetlands, lakes, and ponds. Madison County's surface water resources lie within the drainage basins of the Mississippi River and the Kaskaskia River. Ground water aquifers are zones below the earth's surface that contain water in the voids present in soil and rock. Most ground water aquifers are recharged from surface waters that percolate down from the earth's surface or from streams, rivers, wetlands, lakes, and ponds. Ground water aquifers are interconnected openings large enough to store and supply water readily to wells and springs.

Surface and ground water aquifers have undergone significant changes since early settlement times. Intensive farming and industrial activities were responsible for altering many of the County's creeks and wetlands. Settlers cut down wood lots, plowed under most of the native prairie, drained the majority of wetlands, and dredged creek channels. Runoff from farm fields eroded topsoil into the streams and rivers. The raw and partially treated effluent from industries and cities was discharged into any available water course.

In recent years, the quality of Madison County's surface water resources has improved. Municipalities have made progress in the treatment of wastewater and elimination of combined sewer overflows. However, urban and suburban development continues to strain the ability of surface waters to remain clean and stable. Wastewater treatment plants, while having made major advances in the quality of treated wastewater, still discharge pollutants into streams and rivers. Ground water aquifers are affected by the activities occurring on or around the recharge areas that replenish the water. The ground water aquifers are affected by the surrounding land uses, over-pumping and pollution. These issues are addressed by protection of the recharge areas and land use management.

Water Supply

The most important use of our water resources is providing potable water for human consumption. The three chief sources of potable water in Madison County are reservoirs, ground water, and Mississippi River water. Ground water is tapped by private and public wells from aquifer zones.

Most private wells in unincorporated Madison County draw from shallow aquifer zones which are generally dependable sources of potable water except for eastern areas of the County. Occasionally, individual wells have experienced interruptions in their supply of water. Changes in the water supply in these cases can usually be attributed to one or more of the following factors: 1) natural causes such as drops in local water tables due to changes in seasonal rainfall, 2) water use and well maintenance factors such as over-pumping for excessive lawn sprinkling and lack of equipment maintenance, and 3) installation factors such as variances in individual well drilling practices. Installation factors include:



- a) determination of appropriate aquifer, b) determination of adequate yield for a residential well, c) preparation of the well prior to operation, and d) determination of the depth of the well pump relative to the water level of the tapped aquifer.

Most Madison County municipalities have depended primarily on water from the Mississippi River or wells in the American Bottoms. The Illinois-American Water Company supplies water to numerous municipalities in metro-east and Madison County, and various unincorporated areas in the County are served by water districts. In the eastern portion of the County municipal wells have been the primary source of water with Highland utilizing a reservoir.

It is necessary that Madison County continue to protect its potable water resources to ensure sufficient supply and quality to a growing population.

Water Resources Management

Many of Madison County's water resources reach beyond County boundaries. Hence federal, state and regional coordination is needed for effective water resource management in Madison County and across

Illinois. At the local level, Madison County and its municipalities need to continue to strengthen implementation measures to protect and manage the quality of its water resources, especially the shallow aquifers in the American Bottoms and Silver Creek Bottoms.

Water Resource Protection Guidelines

Ground Water:

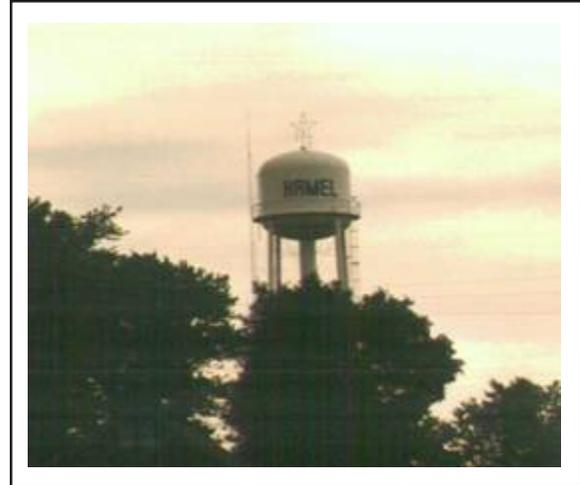
- Proper handling and disposal of chemicals and fertilizers
- Proper installation and maintenance of private sewage disposal facilities
- Lining of landfills and proper treatment of leachate
- Sealing of abandoned wells
- Use of water conservation plumbing fixtures and repair of plumbing leaks
- Use of native plants

Surface Water:

- Soil erosion and sediment control on construction sites
- Conservation tillage and proper application of chemicals and fertilizers for agriculture production
- Best management practices for new site development
- River, stream, and wetland buffer strips

Both:

- Reduce air pollution from fossil fuels that create acid rain
- Reuse and recycle wastewater
- Wetland protection and recreation
- Appropriate planning and management of wastewater discharges from new development.



River and Stream Management

The Mississippi River and its tributaries is a major feature of Madison County. These water resources are one of the County's greatest natural assets and must be protected. Silver Creek, Little Silver Creek, and Horseshoe Lake are other primary water features.

The federal government supports several programs directed at stream protection through the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency. The Illinois Department of Natural Resources regulates stream modification.

A key best management practice (BMP) in river and stream management is to protect the river and stream corridor. The corridor then acts as a buffer strip to protect stream banks from erosion, filter out pollutants, store and transport flood waters, provide wildlife and aquatic habitat, and screen sensitive areas from potential adverse effects of development.

The Biological Stream Characterization (BSC) program is a five-tiered classification system ranging from excellent to very poor and was developed by the Illinois Environmental Protection Agency and the Illinois Department

of Natural Resources. The BSC rating was instituted to determine the environmental condition of streams and to monitor changes in the streams over time. As Madison County develops, it is essential that the BSC rating for each individual stream be maintained and improved wherever possible.

Wetland Management

Wetlands are a sensitive environmental resource, integral to the hydrologic cycle. Wetlands are ecosystems periodically inundated by water. There are several types of wetlands, differentiated by duration of water inundation, soils, topography, and plant species. Wetland types found in Madison County are wet prairie, marsh, fen, bog, swamp, and riverine wetlands.

Wetlands provide multiple uses and benefits to the human and natural communities in Madison Coun. Some of these are: (1) provide temporary floodwater and runoff storage; (2) protect water quality by absorbing floodwater contaminants; (3) provide important wildlife habitat through food, water, cover, nesting, and breeding grounds; (4) shape urban form by serving as logical boundaries to development and by buffering incompatible land use; (5) provide educational and passive recreational opportunities; and (6) enhance the natural beauty of the area.

Ecological Functions Of Wetlands

- Protect the quality of surface waters by slowing the erosive forces of moving water.
- Reduce flood peaks by providing a natural means of flood control, pollution filtering, and storm water damage protection, thereby protecting against the loss of life and property.



- Improve water quality by intercepting and reducing water-borne sediments, excess nutrients, heavy metals, and other pollutants.
- Provide food and shelter, breeding, spawning, nesting and wintering habitats for fish and wildlife, including migratory birds and commercially and recreationally important species.
- Provide habitat protection for many threatened and endangered species of plants and animals.

Currently, at the federal level, large wetlands are protected from major development activities by the U.S. Army Corps of Engineers. Resource limitations constrain the Corps from protecting small wetlands, like some found in Madison County. At the state level, the Illinois Department of Natural Resources reviews projects impacting streams, lakes, and wetlands.

Wetland management entails protection, enhancement and sometimes wetland mitigation banking. It is necessary that County wetlands be protected and enhanced because of their role in water resource management.

Wetland Mitigation Banking

Wetland mitigation can involve wetland banking, a method of compensating for wetland losses due to development. Wetland mitigation banking is the construction of a large wetland in a central location from which project owners or others may purchase credits to compensate for unavoidable impacts on small wetland areas. The idea of wetland banking emerged in the early 1980s when it was becoming clear that on-site mitigation of wetlands by developers lacking wetland expertise were often unsuccessful. Construction of a wetland bank involves the expertise of ecologists to help ensure the success of the new larger wetland. Both the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency (USEPA) are generally supportive of mitigation banking.

Flood Plain Management

A flood plain is an area of low-lying, flat ground on either side of a river, stream, pond, or lake subject to periodic inundation by flooding. Flood plains perform important drainage and hydrologic functions. After heavy rains, snow melt, or ice jams, rivers and streams may overflow their banks causing considerable damage. Any loss of flood plains will cause increased flooding and damage, especially upstream.

In addition to drainage, flood plains also (1) control pollution by settling out sediment from slow moving waters in flood storage areas; (2) provide wildlife habitat; (3) provide passive recreation areas for hiking, bicycling, and cross country skiing and active recreation areas such as playing fields; (4) shape urban form; and (5) enhance scenic beauty.

Federal and state agencies provide only minimum regulations for new developments in flood plains. The Federal Emergency Management Agency (FEMA) requires only that new structures in flood plains be elevated to the level of the 100-year flood; this regulation is enforced in coordination with the Illinois Department of Natural Resources, Office of Water Resources (formerly, the Illinois Department of Transportation, Division of Water Resources). The Office of Water Resources has encouraged local governments to adopt more stringent standards for development in flood plains.

Wastewater Management

Proper wastewater treatment is vital to public health and water quality. There are three basic types of wastewater treatment systems generally available in Madison County: (1) conventional sewage treatment plants, (2) private sewage disposal systems such as septic systems and aerobic treatment systems, and (3) lagoon treatment systems.

Conventional sewage treatment plants and lagoon systems use a central location to collect, treat, and discharge treated wastewater to a stream or river. Pollutant discharge limits are regulated by National Pollution Discharge Elimination System (NPDES). When wastewater volumes exceed treatment plant capacities, excess flows may be discharged directly into a waterway and become an additional source of pollution.

Private sewage disposal systems are frequently found in unincorporated Madison County. These systems occur in areas that have been developed under the traditional development concept of rural subdivisions (lots of one acre or greater) and smaller lot subdivisions near municipalities. Private systems may be either septic systems or aerobic treatment plants

(ATPs). Where soil conditions are not favorable an aerobic treatment plant may be used. These plants provide circulation and aeration in addition to bacteria to decompose organic matter. The treated effluent then flows into a disposal field which may be smaller in area than a septic disposal field.

Extended Aeration Wastewater Recycling And Reuse Facility

An extended aeration wastewater recycling facility with land application treats wastewater as a recyclable resource rather than a disposable commodity. Extended aeration lagoons treat and store effluent. Treated wastewater is sprayed over a large area, such as a farm field, golf course, pasture, or other open space. Vegetation absorbs nitrogen and phosphorus as the water percolates through the soil. Instead of being treated and discharged to surface water where they are non-beneficial, these essential nutrients are recycled for plant growth, especially applicable to irrigation of agricultural fields, golf courses, landscaped areas, etc. While many conventional wastewater treatment plants struggle to meet federal standards, land application eliminates point source discharge to surface waters, and produces effluent that meets regulatory standards. Land application systems, through the elimination of point source discharges, can help maintain and improve the quality of Madison County's major water resources, as well as provide opportunities to meet the objectives of the countywide open space system.

To facilitate effective wastewater planning and to protect water quality facility planning areas (FPAs) have been established in Illinois with the authorization of the Federal Clean Water Act. For each FPA, a management agency (a municipality, County, township or sanitary district) is required to develop a facility plan that documents existing and projected land

use, population, and wastewater service needs. Facility Planning Areas play a role in influencing the direction and extent of future development in the County. Access to sewer service can influence where land developments can occur. Presently, the Illinois Environmental Protection Agency (IEPA) evaluates requests for amended FPA boundaries or expanded treatment plants based on cost-effectiveness and water quality impacts. Applications in this region to amend an FPA are first made to the Southwestern Illinois Planning Commission (SIMAPC) which has established detailed criteria for FPA expansions. SIMAPC then makes a recommendation to the IEPA.

Watersheds

A watershed is the geographic area from which surface water runoff drains off the land and into a receiving body of water. It is important to recognize that all human activities on the land within a watershed ultimately will have an effect on the water resources of that watershed. This highlights the need to manage our land and water resources in a comprehensive, coordinated manner through watershed planning. Watershed planning is the integration of land use, infrastructure, and water resources throughout an entire watershed.

Watershed boundaries rarely correspond to local government boundaries. As a result, coordination and cooperation among local and regional governments, state government, and the private sector are essential for effective watershed management. If one community pollutes or mismanages its storm water, flooding and water quality problems can occur in spite of the cooperative and responsible efforts of other governments. Cooperative watershed planning can effectively solve problems and manage the land and water resources within a watershed.

Watershed planning:

- Promotes an ecosystem-based approach to environmental and land use planning at the watershed level.
- Gives government agencies, land developers, and agricultural operators specific water protection guidelines.
- Shifts water resource planning to a proactive approach that stresses protection and enhancement of the environment, rather than remediation of existing problems.
- Places emphasis on protection of the form and function of the natural environment.

Watershed planning is the most effective means of addressing countywide water quality issues. The key components of watershed planning in Madison County are minimizing impervious surfaces (roads, driveways, parking lots) in new developments; utilizing best management practices — effective techniques commonly accepted and promoted by resource management agencies; and cooperative planning between various units of local government.

Imperviousness

Imperviousness represents the imprint of development on a watershed. Impervious surfaces include rooftops, roads, driveways, sidewalks, and parking lots. The amount of impervious surface in a watershed directly affects the quantity and quality of runoff, in turn impacting water resources within the entire watershed.

Because it can be measured, imperviousness provides a unifying theme for watershed protection that can be used by planners,



engineers, landscape architects, scientists, local officials, and concerned citizens.

Imperviousness affects water resources in at least four ways. (1) Water quality. Pollutant loads in streams and rivers are directly related to imperviousness. During storms, accumulated pollutants are quickly washed off and rapidly delivered to aquatic systems. Runoff from developed areas, often contaminated with oils, grease, gasoline spills, tire wear, de-icing salts, etc., has a negative effect on all water resources within a watershed. (2) The shape of streams. Confronted by flooding that is more severe and more frequent, stream channels respond by widening their banks and deepening their beds. This triggers a cycle of bank erosion and habitat degradation. (3) Stream warming. Impervious surfaces absorb and reflect heat, increasing local air and ground temperatures. Higher air and ground temperatures result in higher water temperatures, often adversely affecting aquatic habitat. (4) Aquatic biodiversity in streams has been shown to become poor as the shape and temperature of streams change in response to increased impervious areas. When imperviousness exceeds ten to fifteen percent, streams have shown a sharply lower diversity of species.

The percentage of impervious surface in a watershed can be significantly minimized by using innovative site design methods such as open space design. Such design methods include (1) clustering buildings to decrease road and parking lot surface; (2) reducing building setbacks to lessen the length of driveways and walkways; and (3) providing density bonuses.

Best Management Practices

Best management practices (BMPs) are a second key component of watershed planning for Madison County. The goal of best management practices is to minimize the adverse impacts of development and to maximize the protection and enhancement of water resources.

An effective BMP system:

- Protects open space adjacent to waterways.
- Requires buffer strips along streams and wetlands.
- Stabilizes banks through structural or preferably vegetative means.
- Protects native plant species.
- Controls nutrient loading from new development and agricultural land uses.
- Minimizes pollutants and pesticides from new development and agricultural land uses.

The first step in the design of a BMP system that protects watersheds is the selection of an appropriate and achievable watershed target. Target is a term that refers to the level of stream quality within a watershed that will exist when all development is completed. Although there are a number of possible watershed targets, the Illinois Biological Stream Characterization (BSC) rating system provides a quantifiable measure of water quality. The target for all Madison County streams should be a Class B (good) rating or better.

Cooperative Planning

Because watershed boundaries often overlap governmental boundaries, cooperation between various units of government is the third key component to effective watershed planning and the achievement of good water quality.

WATER AND SEWER RESOURCES

Policies

1. Protect ground water, a key source of potable water in Madison County, and encourage water conservation programs.
2. Develop a comprehensive set of countywide water resource management regulations which preserve and protect watersheds, stream banks, flood plains, wetlands, and ground water recharge areas.
3. Require new developments to document and report proposed sources of potable water supply.
4. Preserve and improve the water quality of Madison County in order to maximize the potential for wildlife habitat, recreational, and other uses.
5. Manage wastewater treatment in an effective and environmentally sound manner conducive to public health, including the encouragement of wastewater recycling and reuse systems with land application to eliminate point discharge of wastewater into creeks.
6. Develop a multiple use/multiple benefit demonstration site in a selected watershed to effectively demonstrate how integrated land use and water resource management improves stream quality.
7. Protect and preserve wetlands as an essential component of the hydrological system and wildlife habitat, and restore degraded wetland areas where possible.
8. Promote and encourage the use of design techniques, best management practices, and other methods to ensure that imperviousness within developing watersheds is minimized.
9. Develop major capital sewer line projects to provide sanitary sewer service to established urbanized areas that are unsewered.

FLOOD PLAIN AND STORM WATER MANAGEMENT

Objectives

1. The creation of a multi-county watershed planning team that will build upon the Metro-East Watershed Planning Team Resource Plans and support for necessary accompanying storm water legislation.
2. Land use, zoning and site development standards that are responsive to flood protection issues such as the requirement for on-site detention/retention systems and reduced erosion and sedimentation.
3. The protection and creation of wetlands for storm water storage and bio-filtration as well as for fish and wildlife habitats.
4. Agricultural practices that reduce runoff, peak flows, erosion and sedimentation.
5. Designing transportation facilities to reduce their impact on the watershed.
6. Countywide storm water management planning that requires individual and/or cooperative regional retention/detention systems.
7. Carefully designed structural flood control projects that reduce, as much as possible, negative impacts to other public objectives.
8. Retrofitting/floodproofing of existing structures.
9. Improved consistent funding for maintenance and improvements to existing drainage facilities.
10. Engaging in the buyout of designated structures in identified flood areas.

Issue Focus

In recent years Madison County and local governments have focused increased attention on flood plain/hazard management. Severe flooding and rapid development have made citizens and public officials more aware of the interrelated and difficult challenges as well as the critical importance of flood damage protection, storm water management, resource protection, and comprehensive planning. In acknowledging our responsibilities, we must realize that floods are natural events. All that can really be managed are the human activities that affect a watershed in ways that make flooding a hazard to our lives, our property, and our natural resources.

Storm water management has such a central role in most flood management issues that it is presented in this issue discussion. The presence of the American Bottoms and its specific flooding problems make storm water management a critical issue for Madison County.

This Planning Issue Examines:

- Flooding
- Flood Plain/Hazard Management
- Storm Water and Flood Plain Management
- Development Issues

Flooding

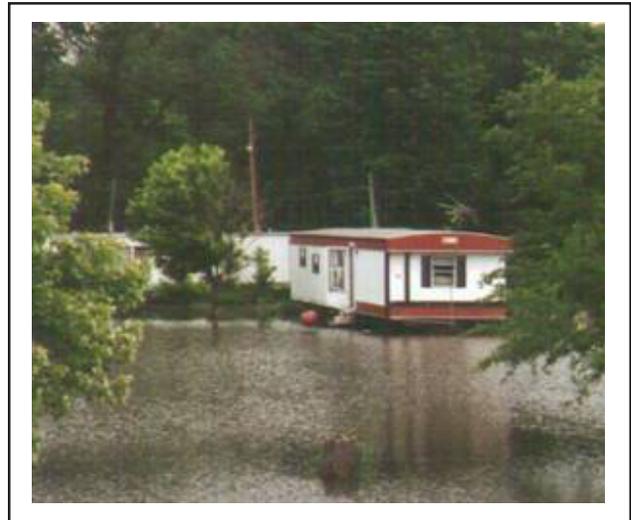
Riverine Flooding

Periodic inundation is a recurrent theme in historical accounts of the American Bottoms and the study area. The history of flooding on the Mississippi River dates back to the flood of 1724, the “Great Flood of 1973”, which reached a river stage of 43.23 feet at the St. Louis gauge, to the new “Great Flood of 1993”, which reached a river stage of 49.6 feet at the St. Louis gauge. Over-bank flooding from the Mississippi River was for the most part prevented in 1973 and 1993 due to the extensive system of levees, which were designed to contain river flood stages up to 52 feet at St. Louis. Therefore while the 1993 event must be considered the flood of record in terms of river stage; the flood occurring in 1884 with the river cresting at 41.3 feet, 11 feet above flood stage, remains the greatest flood of record due to a greater amount of water involved in the 1884 flood.

Although numerous floods were recorded prior to 1900, it was not until the advent of extensive cultivation and urbanization at the turn of the century that flooding was recognized as a severe problem in need of resolution. Creation of the Canteen Creek Drainage District in 1904 and the East Side Levee and Sanitary District in 1907 marked the beginning of organized local efforts to control water in the American Bottoms.

Today, high flood stages on the Mississippi River have not been a direct cause of flooding within Madison County. Work done by the U.S. Army Corps of Engineers in the 1960s, provide protection against a 200-year frequency flood.

The river remains, however, as an indirect cause of interior flooding when higher river



stages block gravity flow of both surface and ground water runoff. The extensive damage sustained during the 1973 and again in the 1993 flood despite the levees attest to the effects of prolonged high river stages.

Interior Flooding

The Madison County priority storm water problem is made up of two distinct parts. The bottoms area, an almost level alluvial plain with river and tributary stream meanders including oxbow lakes, sand bars, terraces, meander scars, sloughs and swamps. The bluff area is an upland area of steep erosional slopes and narrow valleys. The bluff area rises 150 to 200 feet above the bottoms and is highly dissected by a series of streams with slopes that vary from 8 to more than 20 feet.

Although the river remains one of the indirect causes of interior flooding, the severe flooding which occurs today is due principally to excess storm water runoff from the uplands areas and internal ponding. The immediate problem in the bottoms is to accommodate that runoff which must utilize the major drainage facilities in order to discharge into the Mississippi River. The storm water runoff from the uplands reaches the bottoms at high velocities with heavy loads of suspended sediment taxing the existing system. Combining this with poor

maintenance and inadequate funding, the interior levees are often over-topped and breached causing adjacent areas to be inundated.

Interior ponding occurs in low-lying areas, usually traces of former river sloughs, in which surface water collects during periods of high rainfall. Most of these areas are not developed and the water ponded during light rainfall causes little damage. During more severe rainfall, however, these low areas do not have sufficient capacity to store all the runoff flowing to them and consequently cause the surrounding areas to flood.

Interior flooding associated with extensive damages has occurred during storms of 1915, 1942, 1952, 1957, 1961, 1973, 1993, 1994, 1995 and 1996. The problem is getting worse.

Ground Water

In Madison County, several recognized limitations or hazards are associated with ground water. The most common hazards to development are a high water table, a pronounced lack of ground water, and poor quality ground water. High water tables are a recognized hazard in flood plain areas in the American Bottoms, as well as in the uplands, and Silver Creek, areas. The seriousness of a high water table is largely a reflection of duration. An occasional high water table occurring for two or three days a year is not considered serious, whereas a two- to three-week period is quite serious. A high water table can occur as a reflection of a topographic feature as in the American Bottoms.

Most of the Mississippi River flood plain in Madison County has been plagued by high ground water levels since the near-record flood on the Mississippi River in 1973. Record high ground water levels have occurred because of favorable conditions for ground water recharge

and reduced pumping by industry. As a result, sewer lines have ruptured, and basements have flooded. Areas that were previously dry and well-drained are now subject to surface flooding because of the saturated condition of the ground water reservoir.

Flood Plain/Hazard Management

The disastrous floods of 1993, 1994, 1995, and 1996 came after decades of channeling, building levees and flood control measures. Why, after all of these engineering efforts, had the floods been so destructive? How could future floods be avoided?

The conclusion was that poor flood plain/hazard management had permitted too much development in the flood plain prior to today's management regulations and controls. The dependence on structural flood controls was also blamed. The levee systems have given people a false sense of security. We look and we see that levees are built right on top of the rivers, but you have to give the river room to move. One proposed solution was basically: "don't build on flood plains. And don't try to alter the course of rivers for agriculture, urban development or even flood control measures". This is difficult to achieve because of long established land use patterns and the continuous challenge of managing private development and growth in flood plains. Moreover, effective watershed management is often politically unpopular and requires the coordination of numerous governmental jurisdictions and agencies. In the most severely flooded areas the relocation of flood plain development and the preservation of undeveloped flood plains, are expensive, but may be less expensive in the long run than construction and maintenance of levees, dams and other structures.

It is clear that "comprehensive flood plain/hazard management" is the most effective way

to address “flood control” issues. The distinction between “flood plain/hazard management” and “flood control” is an important one. The basic choices to avert flood damages are “to increase the levee system’s capacity to handle increased runoff, or to stop growth in critical flood plain areas.” Stated most simply, traditional “flood control” deals with the first two methods, while comprehensive flood plain/hazard management includes a balance of all three approaches including non-structural and structural solutions. Storm water management and erosion and sedimentation controls are two key flood plain management approaches.

The term “flood plain/hazard management” encompasses “flood plain management” which seeks to plan flood plain use from a standpoint that balances resource protection, environmental enhancement, flood damage protection and land use development. Flood plain/hazard management is rapidly emerging as an important planning and growth management tool because it focuses on the opportunities and constraints of this unique geographical area. This plan utilizes the term “flood plain/hazard management” rather than “flood plain management” because flood hazard management activities, including forestry practices and storm water management extends beyond the designated 100-year flood. Whereas flood plain management could be construed as only being applicable to activities occurring in the flood plain.

Basic Considerations

The concept of flood plain/hazard management embraces several fundamental values, principles, and techniques. Among the most important of them are:

1. Respect for Rivers and Creeks Natural Hydrological Processes



Rivers and creeks are dynamic systems and flooding, erosion, sediment deposits and channel migration can result from natural processes. Whereas flood control seeks to overcome or control these processes, flood plain/hazard management recognizes that it may be more cost-effective and environmentally sound to work within a river’s hydrological dynamics. In some cases, constructing levees or channeling beds may be appropriate, but in other cases, letting the river take its natural course which includes over-bank flow; a natural event critical to the maintenance of fish and wildlife habitat may be appropriate. Restricting adjacent development or using bio-engineering solutions, such as wetland storage areas, may be more cost effective than structural solutions.

Flood plain/hazard management emphasizes minimum impact to natural processes, since experience has shown that fighting a river’s natural tendencies is more costly and results in other problems downstream.

2. Focus on the Cause of Flood Damage

In the past, flood control has sought to prevent flood hazard by treating its symptoms. If a river flooded a town, then the answer was to elevate the floodwalls to channel the higher water levels without reversing the land use

practices upstream or in the flooded area that were exacerbating the flooding in the first place. Due to recent federal regulations, it is no longer allowed to elevate the height of the levee. Contemporary flood plain/hazard management practices recognize the need to treat the causes as well as the symptoms of chronic flooding.

3. Watershed Considerations

The watershed represents the “physical” context of flood plain/hazard management. Poor management of one part of the watershed can result in flooding problems in another. For example, poor forestry, agricultural or development practices upstream can cause additional water runoff to peak, surge or accumulate downstream. Consequently, comprehensive flood hazard/plain management encompasses: flooding in rural, suburban and urban environments; flooding associated with major river systems and small urban streams; and the range of solutions needed to address flooding associated with a variety of conditions/causes and landscapes, from on-site storm water management development standards in Madison County’s rapidly urbanizing areas to the relocation of homes located within ‘flood sensitive areas’.

Since watersheds typically cross city and county jurisdictions, state lines and possibly federally owned lands, interjurisdictional cooperation is required. The complexity of the natural systems, as well as the jurisdictional overlap that often occurs, points to the importance of comprehensive flood plain/hazard management at the level of the entire watersheds.

This principle has important political and funding questions. For example, if poor development and storm water management practices upstream cause flooding

downstream, why should downstream communities be forced to solve the problem?

4. Public Participation and Inter-Agency Coordination

Because flood plain/hazard management encompasses a broad spectrum of environmental, social/cultural, political, engineering and resource utilization issues, an explicit public decision-making process is needed to develop a recommended course of action. Public and interagency participation is essential to consider community concerns and to educate local residents on the fundamentals of responsible effective flood plain/hazard management. They should have a voice in defining the goals and parameters of flood plain/hazard management plans. Comprehensive countywide flood plain/hazard management planning must be a team effort which integrates community development regulations and environmental enhancement activities between all of the communities as well as the County. Because of the vast number of local governments and agencies located within Madison County and the fact that most of the watersheds’ cross County or city boundaries, coordination is crucial.

5. Process-Oriented Examination of Issues

A countywide flood plain/hazard management plan should provide a process for examining watershed by watershed causes of flooding by evaluating alternative non-structural and structural solutions that are based on short and long-term goals, objectives and solutions, including:

- a) Construction and maintenance costs;
- b) Environmental impacts, both site specific and cumulative;
- c) Funding capabilities;
- d) Public acceptance;
- e) Recommended solutions prioritized.

The planning process offers perspective by re-examining current flood maintenance activities as they relate to established and understood goals and objectives. A plan represents documentation, the flood plain/hazard management planning process is ongoing. An open planning process will help government officials balance the costs of specific flood plain/hazard management measures against benefits. For example, benefits to individual property owners from levee projects should be weighed against the monetary and environmental costs borne by the general public.

6. Pursuit of Other Resource Protection Goals

Levees traditionally used to control flooding destroy wildlife habitat, degrade a river's natural beauty, reduce water quality, diminish fisheries resources and cause further downstream flooding and erosion. Flood plain/hazard management, being comprehensive in approach, embraces these environmental conditions and considers them along with the prevention of flooding.

7. Coordination Among Transportation, Planning, Zoning and Building Departments and other Departments

A major challenge is improving interdepartmental coordination. For example, transportation departments' responsibilities include construction and maintenance of structural flood hazard management measures while zoning and building departments review new construction proposals to implement National Flood Insurance Program (NFIP) standards, and to regulate development in Federal Emergency Management Agency (FEMA) designated floodways. More often, these activities are split between departments. Comprehensive countywide flood plain/hazard management planning, ideally, brings all

interested parties together so that one department's efforts support the others.

Incorporation of Comprehensive Planning Solutions

Human use of rivers and flood plains encompasses a broad range of environmental, public and private objectives; flood plain/hazard management seeks to incorporate the full range of comprehensive planning tools to achieve those objectives.

A comprehensive flood plain/hazard management plan can:

1. Provide a flexible, cost-effective program of steps to reduce flood damage.
2. Address the issue of cumulative environmental impacts that arise in reviewing development permit applications.
3. Fulfill the recommendations of the comprehensive plan, and establish areas of critical area protection and intergovernmental coordination.
4. Serve as information in zoning ordinance and comprehensive plan updates.
5. Examine the possibility for more stringent requirements that are cost effective in terms of a reduction in flood insurance rates and increased flood protection.

In the fall of 1993, St. Clair County approached the County Soil and Water Conservation District, and the U.S.D.A. - Natural Resources Conservation Service for assistance in developing a plan to address storm water runoff, and other natural resource concerns in the American Bottoms portion of St. Clair County. Madison and Monroe Counties joined the effort as well as the Illinois Department of

Natural Resources-Division of Water Resources, and the U.S. Army Corps of Engineers, to make up a “Watershed Planning Team”. An agreement was signed to provide for the “Watershed Planning Team” to develop a series of resource plans for the watersheds that make up the American Bottoms portion of those counties. That effort is in serious jeopardy as the Watershed Planning Team has been dismissed.

Proposed Legislation

In the process of preparing the Resource Plans as discussed above the Metro-East Watershed Planning Team and Regional Storm Water committees determined that in order to bring these plans to fruition an amendment needs to be made to State Legislation allowing counties to “prevent, mitigate and repair the effects of urbanization on storm water drainage”. The proposed legislation would allow the County Board through referendum to “establish rates and charges, including interest and penalties for furnishing services”.

Land Use Management

The purpose of land use management is to provide guidance for growth and development and the associated physical improvements that coincide with it. Both the State of Illinois and federal agencies allow counties to adopt specific regulations concerning land use issues and as such, many of the County regulations are very similar. Within most cities/counties, development plans and regulations include a comprehensive plan, zoning ordinance, building code, subdivision ordinance, storm water management and erosion control, and a flood plain management ordinance. Those land use management regulations that effect flood plain/hazard management plans are discussed briefly below.

Madison County Comprehensive Plan

The purpose of a County comprehensive plan is to give long range direction and guidance for systematic growth and development. The plan should emphasize immediate local concerns that can range from land use, transportation, utilities, water resources, open space, environmentally sensitive areas, drainage and others. Typically, these plans are non-regulatory, lacking the enforcement mechanisms to ensure compliance. Their purpose is to provide goals, objectives, and policy statements that are met through various ordinances set by the jurisdiction. It is at the comprehensive plan level, that the counties and communities are able to set a direction for regulations.

Storm Water and Flood Plain Management

Prior to settlement, there was very little storm water runoff in the uplands of Madison County except in areas of well-defined streams and rivers. Runoff rates were quite low because of absorption by the undisturbed prairie soils and deep-rooted native vegetation. The American Bottoms, with its extensive wetlands, absorbed hillside runoff and the Mississippi River periodically inundated the Bottoms.

The volume and rates of storm water runoff have increased greatly since settlement times. This is due to the farming activities which have drained fields and channeled streams, and to urbanization which has increased impervious surfaces. On an annual basis, impervious surfaces — streets, parking lots, and roofs — generate three to five times as much runoff as pervious areas. Runoff volume and rates have also increased in suburban residential areas because of soil compaction and the change in vegetation from deep-rooted grasses and forest to shallow-rooted turf grass.

Inadequate storm water management results in a substantial increase in flooding and stream bank erosion, and can also cause severe water quality problems. Water may be polluted from street and parking lot runoff containing heavy metals, bacteria, nutrients and petroleum by-products.

Effective storm water management involves all of the following: an overall plan; a system of drains that is properly designed, constructed, operated, and maintained; storage facilities; and best management practices for water quality. The objective of storm water management is to minimize runoff, maximize water quality, and to retain storm water on-site.

Storm water runoff affects the entire watershed in which it occurs. Hence, a storm water management program for Madison County identifies drainage patterns and runoff controls within watershed boundaries. A storm water management program seeks to provide the means for cost-effective, safe, aesthetic, and reasonable storm water drainage and erosion control which would minimize water quality degradation and habitat loss. A County storm water management plan would provide the ability to implement additional best management practices and water quality benefits for both incorporated and unincorporated areas.

Because agricultural development has significantly increased runoff volumes and rates, the Natural Resources Conservation Service and the Madison County Soil and Water Conservation District have promoted many erosion control and flood plain protection practices in agricultural areas. Farmers throughout the County have been encouraged to use conservation tillage, grassed waterways, terracing, and other methods of erosion control and flood plain protection.

Best management practices (BMPs) for storm water runoff control include structural improvements and devices which transport, temporarily store, and treat urban storm water runoff to remove pollutants, reduce flooding, and protect aquatic habitats. BMPs also include non-structural approaches, such as public education efforts to prevent the dumping of household chemicals into storm drains.

Coordinated and cooperative efforts for storm water management are needed among the municipalities and the County. Partnerships with the private sector to achieve common goals are also essential. If one municipality or development within a watershed does not manage their storm water, flooding and water quality problems will occur within the watershed.

Although all runoff and streams drain ultimately to the Mississippi River, the Madison County drainage system is divided between two rivers, the Mississippi and Kaskaskia. Two canals assist in diverting drainage through the American Bottoms flood plain, the Cahokia Diversion Canal and the County Ditch. Of great concern to the American Bottoms flood plain hydrology is the amount of runoff originating from the eastern bluff regions. This runoff has continued to tax the ponding areas and drainage canals in the flood plain areas.

The most serious problems found in the drainage system involve flooding, ponding, or soil wetness. The areas in the basins that are most susceptible to these problems are the flood plains adjacent the streams. These flood plains were created by a natural process that involved the overflow and storage of floodwaters. The occupying of flood plains by humans and the subsequent alterations to the natural drainage system have produced and increased flood hazard. Although the river remains one of the indirect causes of interior flooding, the severe flooding that occurs in the

protected flood plain area today is due principally to excess runoff from upland areas and internal ponding. The immediate problem in the flood plain is to accommodate the runoff from the upland areas that must be conveyed through the major drainage facilities in order to be discharged into the Mississippi River. The storm runoff from the upland creeks enters the flood plain at high velocities with heavy loads of suspended sediment, overcharging the major drainage system. As a result, interior levees are often over-topped, and adjacent areas are inundated. Interior ponding occurs in low-lying areas, usually traces of former sloughs, in which surface water collects during periods of precipitation.

The damage inflicted by flooding and wetness in flood hazard areas has prompted much consideration of preventive measures involving the regulation of land use in flood plains. These measures include (1) zoning ordinances, (2) subdivision regulations, (3) building codes, and (4) storm water management and soil and erosion controls.

The most significant recent measure in terms of flood plain management has been the initiation of flood insurance under the National Flood Insurance Act of 1968. The Act requires that local governments that wish to participate in the subsidized insurance program adopt and enforce land use regulations and control measures that will guide the development of land in the flood-prone area in order to avoid or reduce flood damage.

Drainage

Drainage districts in the County include the Canteen Creek Drainage District and Metro-East Sanitary District (MESD), which handle storm water runoff from the watershed generally above the bluff line to the Mississippi River. The political boundaries of most

districts in Madison County includes only one-half of the drainage area for which they receive runoff. A drainage District's responsibility is to maintain a system of ditches, pump stations, and levees that protect a given area from flooding. Other drainage districts in Madison County are: Cahokia Creek Drainage and Levee; Foster Drainage and Levee; Wood River Drainage and Levee; Chouteau Island Drainage and Levee; Chouteau, Nameoki and Venice Drainage and Levee; County Ditch Drainage and Levee.

The principal drainage concern in Madison County is the management of runoff from above the bluff line through the American Bottoms. Because storm water drainage of the bluffs is not controlled, it will not be cost-effective to turn attention to improving drainage in the area below the bluffs. Detention of storm water runoff needs to be studied to determine how best to avoid localized flooding and erosion as well as the more serious flooding and siltation of the major drainageways

Development Issues

Madison County has no comprehensive storm water management plan. Therefore, a given jurisdiction has no control over the management of much of the watershed in which it lies. As the County enters the next 20-year period, proper countywide management of storm water may well be the most critical utility-related issue. A countywide storm water management plan should address the following issues:

- Equitable cost-sharing for service
- Regional runoff analysis by watershed
- Community flood insurance studies update and adherence to those studies
- Water Quality/treatment of storm water runoff

- Establishment of a single authority to oversee planning, design, construction, operation, and maintenance
- Availability of funds for drainage districts to rehabilitate the various channels.
- High water table in the American Bottoms
- Improvements to reduce flooding of the American Bottoms
- Flooding and the effects of a high water table, which are particularly serious in the American Bottoms. Considerations of redevelopment and economic growth in the American Bottoms must include solutions to the drainage and flooding problems in this area.

Plan Rationale

Madison County lies within two distinctly different topographic regions: the American Bottoms along the Mississippi River in the western portion of the County and the uplands area east of the bluff line. A plan for addressing the interior flooding that occurs in the Bottoms and for establishing a County-wide plan for storm water management to alleviate existing and prevent future drainage problems and flooding throughout the County is needed.

Recommendations

A high priority for Madison County drainage planning is proper management of storm water from developed and developing areas tributary to the American Bottoms. However, it is necessary to formulate a storm water management plan for the entire County rather than singling out individual areas or problems. The plan must analyze each watershed in its entirety to allow proper drainage of all portions of the drainage basin.

Adoption of a countywide storm water management plan will offer many benefits as development occurs during the next 20 years and beyond. The most important benefit would be the creation of an entity at the County level that would coordinate drainage and flood control. Among the specific benefits is equitable cost-sharing. For example, the current political boundaries of the various drainage districts within Madison County take in only half of the affected watersheds. A County plan could result in large detention basins with a centralized maintenance authority and would discourage small backyard and parking lot basins with unclear maintenance responsibilities. The plan should provide standard detention guidelines in the County; municipalities should be encouraged to adopt the same standards and follow the County plan if it is to be effective.

FLOOD PLAIN AND STORM WATER MANAGEMENT
Policies

1. To encourage watershed planning for flood plain and storm water management within and in watersheds adjacent to the County.
2. Develop a comprehensive set of countywide flood plain and storm water management regulations which preserve and protect watersheds, stream banks, flood plains and wetlands.
3. Development of a countywide storm water management plan that incorporates watershed planning and best management practices for all areas to regulate the amount, direction, and quality of runoff.
4. Develop a multiple use/benefit demonstration site in a selected watershed to effectively demonstrate how integrated land use and water resource management improves the management of storm water.
5. Promote and encourage the use of design techniques, best management practices, and other methods to reduce imperviousness within developing watersheds.
6. Coordinate open space planning and preservation with County storm water planning.
7. Adopt storm water drainage and detention, soil erosion and sediment control regulations for new development and redevelopment within the County.
8. Encourage municipalities to adopt the same or similar regulations for storm water, soil erosion and sediment controls.

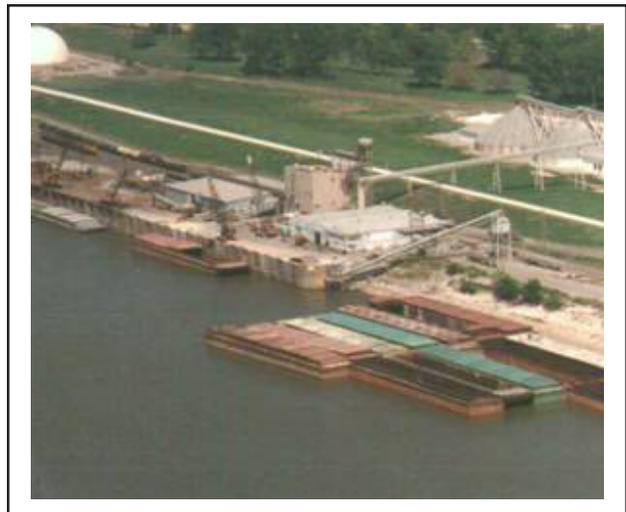
TRANSPORTATION **Objectives**

1. The improvement of the County's transportation system to support the continuing growth and development of the County's economy.
2. The addition of public transit services and facilities to provide increased mobility to transit riders and especially to the transit dependent.
3. The continued development of the Tri-City Regional Port District as a support facility for the County's industrial and agricultural economies.
4. Increased mobility of persons and goods to reach destination points with less cost and time investments.
5. To continue the development of a multi-modal transportation system with expansion of each transportation mode.
6. The coordination of the Transportation Plan with other planning efforts including land use, open space and recreation, economic development and other regional, state and federal transportation planning activities.

Issue Focus

Madison County enjoys a transportation system encompassing the spectrum of transportation modes. The County is served by interstate and state highways, railroad, river ports, airports; and bikeways. The improvement and expansion of these transportation systems as proposed in the current Long Range Transportation Plan will strengthen the County's economic status and the mobility of its residents. This planning issue discussion focuses on the considerations that formed the basis for the creation of the Long Range Transportation Plan and the reader is strongly encouraged to consult the Long Range Transportation Plan for detailed information.

Madison County's commitment to the continuing development and expansion of its transportation system is reflected in the County's development of major Madison



County Long Range Transportation Plan. The County received that plan in 1998. The County's foresight underscores the crucial role that transportation holds for all economic development and human activities.

To properly assess the current transportation system of the County's highways, roads,

airports, river ports, public transit and bicycle/pedestrian systems and to forecast transportation systems improvements the County determined the following activities would be necessary to develop a comprehensive long range transportation plan.

Inventory And Analysis Of Existing Facilities And Services

Do a comprehensive inventory and analysis of existing and planned transportation facilities, services and programs. This information would be used to provide a basis for recommending short range (0 - 5 years) and long range (6 - 20 years) improvements. To accomplish this inventory and analysis the following subject areas would be addressed.

Land use and demographic characteristics. This information would be used to refine a countywide transportation model used to analyze future transportation needs.

Streets and Highways. This is composed of the Madison County roadway network, that includes interstate highways, state and county roads, and local major arterial streets.

Transit/Paratransit Services. This is composed of transit and paratransit services in Madison County, including local and express bus, paratransit and Amtrak services.

TDM Programs and Services. This is composed of existing transportation demand management programs and services available in Madison County, including Ride Finders (areawide ridesharing program), carpool and vanpool programs administered by regional employers; transportation management associations (TMAs); demand management concepts such as congestion pricing); physical improvements such as HOV lanes and ramp control.

River Ports. This is composed of port facilities, tonnage, access and related considerations

Airports. This is composed of airports in Madison County as well as those airports in neighboring counties that have a bearing on the regional aviation environment.

Bicycle and Pedestrian Facilities. This is composed of all on-street bike lanes, dedicated bike trails, sidewalks along designated lanes, and future plans of Madison County, cities, MCT, and private developers concerning bicycle/pedestrian network development. Information will include the following: Classification; location, current roadway designation/condition; number and types of crossings; current and proposed surrounding land use; demographics; access to significant destinations; transit linkages; topography; existing corridors (utility, railroad or drainage) potentially available for bicycle use.

Transportation Financial Data. Capital, operating and revenue estimates are developed for each individual transportation mode.

Performance Measures and Standards

A performance measurement process was developed to evaluate the existing transportation process and recommend future improvements.

Future Transportation Alternatives

Future alternatives were developed for each transportation mode, testing of mode alternatives was accomplished and a subsequent evaluation was performed.

Long Range Transportation Plan (LRTP)

The output of the transportation planning activities highlighted in the preceding is a Long

Range Transportation Plan that includes recommended projects, including costs, benefits, timing and potential funding sources. The LRTP identifies all projects that contribute to a transportation system that improves mobility, supports economic development, and enhances the quality of life in Madison County. Recommendations are not necessarily constrained by present funding limitations.

The transportation system of the future is balanced to meet local transportation needs and linkages to neighboring counties in the St. Louis metropolitan region. The plan is coordinated with concurrent transportation planning activities conducted by federal, state and regional agencies in the areas of land use, economic development, housing and human services.

TRANSPORTATION **Policies**

1. To actively support the construction of a new Mississippi River bridge in Madison County.
2. To actively support the future extension of MetroLink within Madison County.
3. To encourage the development of bike trails interconnected as a bikeway system within the County.
4. To emphasize transportation improvements which support existing and encourages new economic development.
5. To coordinate transportation improvements with watershed planning efforts.
6. To coordinate County transportation improvements with affected municipalities.
7. To work for those transportation improvements and services designed to increase the mobility of Madison County residents.

EXISTING CONDITIONS & INVENTORY

PURPOSE

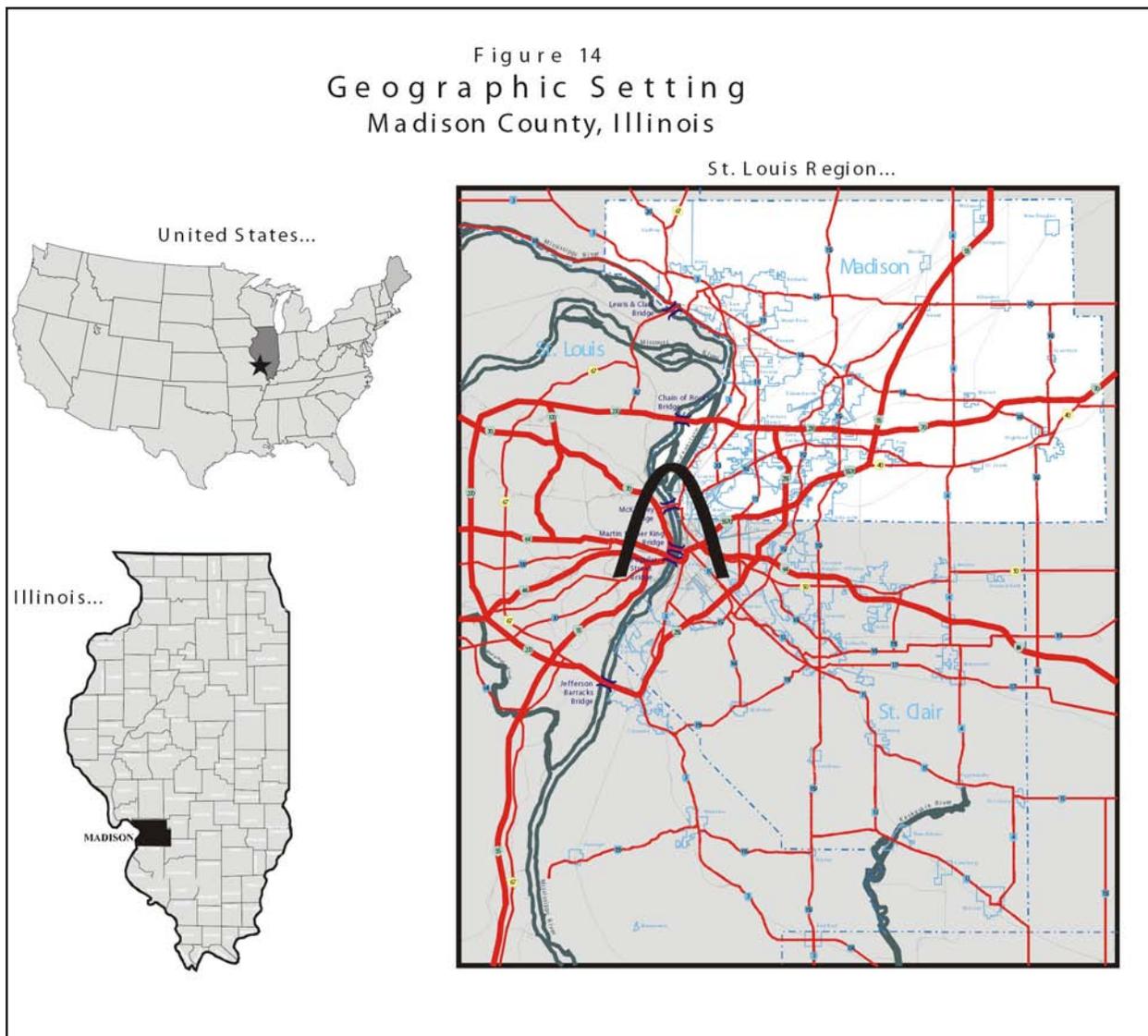
The following Section provides background information on the geographic, natural, and social elements of Madison County. These elements comprise the physical characteristics, environmental resources, and human activities that have shaped Madison County over the years. The Inventory section also provides a foundation for future planning and resource management activities.

GEOGRAPHIC SETTING

Madison County is apart of the St. Louis Metropolitan Region and is located in the southwestern portion of the State of Illinois. It is near the population center of the United State and is considered midwest in character. The Mississippi River forms the western boundary of the County and Jersey, Macoupin and Montgomery counties border on the north. Bond and Clinton counties form the eastern boundary of Madison County and St. Clair the southern boundary. Madison County is basically square in shape and is approximately

25 miles north to south and 30 miles east to west, totaling an area of 731 square miles.

Madison County has three distinct geographic areas: the American Bottoms area, the Bluffs area and mixed plateau area. American Bottoms is the low-lying flood plain of the Mississippi River along the County's western border. The largest urban areas are Alton and Granite City. The Bluffs are a series of elevations that form a wall between the flood plain and the rest of the County. Along the bluff line near the center of the County is Edwardsville, the County seat and home of



Southern Illinois University at Edwardsville. Also along the Bluffs is another suburban area, Collinsville, a developing commercial area on the County's southern border. The plateau in the northeastern areas is generally flat with a mix of forest, small hills, agricultural lands and small rural communities.

SETTLEMENT HISTORY

St. Louis Dominance

The history of growth in Madison County cannot be told without taking into account the dominance of St. Louis as transportation center of the Midwest. One of the major reasons St. Louis grew as a major metropolis was because of its location on the Mississippi River, just below the confluence of the Mississippi and Missouri Rivers roughly at the center of the north-south axis of the United States. A second important reason for permanent settlement and growth was because the river necessitated a break in rail transportation. The Mississippi and Missouri Rivers dominate the geography of the region, and had primary influence on its history. The rivers provide natural and, in the early decades of the 19th century, rapid avenues to bring materials into the region and to carry agricultural and increasingly greater quantities of manufactured and processed goods to the markets of New Orleans and, via the Ohio River, to the East Coast.

The French character of the original settlement; the safety from flooding afforded by the Missouri bluffs; and discomfort of the malarial swamps in the American Bottoms all explain why St. Louis, as opposed to some east side community, became the center of the metropolitan area. The first to exploit the natural transportation advantages of the St. Louis area were French fur traders and trappers. The area's river system gave them access to prime hunting and trapping areas to

the northwest, as well as access to marketing areas at New Orleans and, via the Ohio River, the East Coast

The First Inhabitants of Madison County

Archaeologists believe that the earliest inhabitants of the area appeared after the last glacial advance from the north (about 8,000 B.C.) and lived principally in rock shelters along the Mississippi River bluffs. However, very little is known of them since their characteristics and occupations can only be studied from sparse campsites, burial remains and associated stone artifacts.

More information is available regarding the later, prehistoric cultures which lived in the area. Numerous campsites and artifacts have been found, particularly along water courses such as Silver Creek. Farmers in the area have frequently uncovered artifacts during spring plowing, especially near springs and water courses.

The most notable of the prehistoric cultures in the area, the Mississippian culture, prevailed from about 900 A.D. to 1500 A.D. The capital and ceremonial center for the entire central part of the United States was located at the Cahokia Mounds complex in the American Bottoms. Smaller, satellite communities with mounds and ceremonial centers were located at Lebanon, Dupon, St. Louis and Mitchell. The mounds were constructed for burial purposes, as temple platforms and for various ceremonial purposes. Indians of the Mississippian culture were the first to rely primarily on horticulture, although game and wild plants were still important parts of their diet. The size of the settlements and the degree of permanence suggest large population that probably could not be supported without broad-scale food production.

For unknown reasons, the Mississippian culture disappeared by the end of the 16th century. Archaeologists have speculated that diseases introduced from the south and southwest or intensified warfare with neighboring enemies had contributed to the demise. However, new evidence seems to suggest that a severe famine, the result of widespread drought, may have been the primary cause. During the latter part of the 17th century, the Kaskaskia, Peoria, Tamoroa, Moroa, Mitchigamea and the Kahokia Indians of the Illiniwek Confederation migrated to this area from the northeast to escape repeated attacks from the Iroquois. The Tamoroa and Kahokia Indians established their main settlements in the Cahokia area, and the Mitchigamea settled near Fort Chartres in Randolph County.

French Exploration and Original Settlement

Louis Joliet, a French explorer and trader, and his missionary companion, Father Jacques Marquette were the first white men of record to see the land which is now Madison County. In 1673, they traveled through what is now Wisconsin and down the Mississippi as far as the Arkansas River. Marquette and Joliet returned to Canada via the Illinois River, and it is significant to note that their exploration marked the beginning of the end of Indian dominance.

Father Marquette returned to the area in 1675 to establish a mission at the Indian Village of Kaskaskia that was located near the present site of Utica. The mission was later moved to the confluence of the Kaskaskia and Mississippi Rivers. Another was started the same year in Cahokia. Subsequently, French villages were established in the American Bottoms. The French conveyed grants to

nearly all the land in the American Bottoms which was in the vicinity of their settlements and the remnants of these grants are still apparent on current plat maps.

British Dominance

General Wolfe's defeat of the French at Quebec led to the signing of the Treaty of Paris on September 9, 1763, which provided that France give all of her territory east of the Mississippi to Britain. British troops occupied the territory in 1765 and some four years later Chief Pontiac was assassinated by an Illiniwek. As a result, the Iroquois tribes from the north and east descended on the Illiniwek and virtually annihilated them. In 1833, the few remaining members of the once powerful Confederacy of the Illiniwek moved west of the Mississippi River and eventually south to Oklahoma.

American Control

After the Declaration of Independence in 1776, Virginia claimed Illinois as part of its domain. Since many of the inhabitants of the area had remained neutral or hostile during the Revolutionary war, it was thought best to secure their allegiance. George Rogers Clark, a Kentucky backwoodsman, was sent to the region by the Governor and the Assembly of Virginia in the summer of 1778. After traveling down the Ohio to within 40 miles of its mouth, Clark's soldiers concealed their boats and marched across country to Kaskaskia. The inhabitants were taken by surprise and surrendered at once. Accompanied by a number of the now-friendly inhabitants of Kaskaskia, the force then moved up the river; and the settlements in what is now Monroe County, along with Fort Chartres and Cahokia, capitulated without a struggle. After an historic march through the flooded bottom

land of the Wabash River, Clark recaptured the garrison at Vincennes on February 25, 1779.

When the British attacked the Illinois towns the following year, Clark came to the aid of Cahokia and helped beat them off. As the Revolutionary War drew to a close, military operations ceased, except for periodic Indian raids instigated by the British. At the time of Clark's expedition into Illinois country in 1778, the inhabitants were all French except for a few American hunters and traders. In 1790, the population of the area that now comprises St. Clair County amounted to about 700. Most of these were French and lived in or near the Village of Cahokia.

Pioneer Settlement

Among the first American settlers in Madison County were men who had accompanied George Rogers Clark on a military expedition into Illinois in 1778. These men were given land grants of 300 acres for their service, and upon completion of their enlistments in 1781, they started migrating via the Ohio and Mississippi Rivers to Illinois to claim their land. One of the early pioneers was Reverend David Badgley, a Baptist preacher who came to Illinois in 1796. Reverend Badgley, who traveled extensively throughout the County, was never a resident of Madison County, but resided in Belleville in St. Clair County. The first American to settle within the limits of what is now Madison County was Ephraim Conner in the year 1800. He built his crude cabin in the northwest corner of the present Collinsville Township, but became dissatisfied with this isolated location and moved on. In 1801, he disposed of this property to Samuel Judy who became a permanent and valued citizen of Madison County. The Judy family is conspicuous in the early settlement of Illinois.

When Governor Edwards established the County in 1812, it was an immense area. Its southern border included the present line, but it extended from the Mississippi to the Wabash River. All the land north of that line to the Canadian border including Wisconsin and part of Minnesota east of the Mississippi and north of Michigan was Madison County. Subdividing began soon thereafter with the growth of the Illinois territory, and by 1831 the County had dwindled to its present proportions plus what is now Bond County. Bond County was detached in 1843, and there has been no change since that year.

One of the earliest arrivals in Madison County was Thomas Kirkpatrick who built his home along the banks of Cahokia Creek in the northern part of what was to become Edwardsville. It was this house that was appointed the seat of justice of the County in Governor Edward's proclamation in 1812. In 1812, Edwardsville became Madison County's County seat and is the third oldest city in the State of Illinois.

After the War of 1812 had ended, settlement of the County increased rapidly. A treaty of peace with the Indian Tribes of the northwest was concluded in October of 1815. Immigrants from other states, who had been deterred from coming to Illinois by reason of the Indian hostilities, now poured into the County and soon took possession of the unsettled parts. In 1812, Edwardsville, being the County seat, was the leading town within the County and contained about 50 dwellings, the U.S. Land Office, a bank and some public buildings. Alton, now the principal city within the County, had a very small population in 1812. It developed rapidly, however, and by 1920 had bypassed Edwardsville as the leading town in the County. Other settlements in Madison County at the time of its incorporation were upper Alton and Melton.

At the time of the organization of the County, only one public road was in existence. Its northeastern terminus seems to have been Thomas Kirkpatrick's mill on Cahokia Creek (Edwardsville) and, passing southwest via Samuel Judy's place and Indian fort on Cahokia Creek, it connected the old French settlement of Cahokia with later American settlements in Madison County.

The population of Madison County in 1818 was principally composed of American settlers from the southern states, a few New Yorkers, some New Englanders, and quite a number of Pennsylvania Germans and Irish Americans. The Canadian French had never been as important a factor in the population of Madison County as in neighboring St. Clair County to the south. Blacks were quite numerous, principally slaves and indentured servants, and a few registered as free persons of color. Prior to the Civil War, many slaves dreamed of freedom. Luckily, there were options for these slaves. Some of them were freed, and some were able to raise enough money to buy their freedom. However, these cases were few compared to the large number who remained slaves. The only other option for the majority of slaves was to escape, and the Underground Railroad was the only way. The Underground Railroad was a scattered system of homes, barns, churches, and other structures where people were willing to risk their own lives to hide the runaway slaves. This system spanned the country, from slave states in the South to the free states in the North and eventually into Canada. Many of the passengers on this so-called railroad traveled through southern Illinois where they stopped at many safe locations called "stations," along the way. In this region much of this activity centered around the Alton area and Illinoistown, now present-day East St. Louis.

Runaway slaves dreamed of stopping at Illinoistown, despite the danger of recapture in nearby Missouri, a slave state. While waiting at the various stations to move further north the slaves exchanged stories of their journeys. From Illinoistown, slaves were led up the Mississippi River to Alton, where tunnels under the city led them safely to homes of "conductors", or people who housed runaway slaves. Most likely, the fugitives traveled at night by carriage or on foot. It was said that a slave could set foot on the river's edge at Alton and then later emerge above-ground in Brighton. One station in Alton was a building two blocks from the river, which made it an easy access for slaves and many other stations throughout the City and County help the slaves in their endeavors to escape.

In November of 1837 a financial crash swept over the whole country. General bankruptcy followed and the contemplated railroad schemes within the County were given up in favor of their location in St. Clair County. By 1850, the majority of the public lands, with the exception of a few 40-acre tracts, had become the property of individuals, and had been converted into thousands of acres of productive farmland. New towns and villages had sprung up, while others already established were thriving. Other towns established prior to 1850 were Madison, Marine, Wood River, Collinsville, Highland, Venice, Monticello (Godfrey) and Troy.

In 1860 there were eight manufacturing establishments in Madison County producing agricultural implements, plows and threshers. These eight manufacturing establishments employed 61 men, had an aggregate capital of \$53,000 and turned out manufactured articles worth \$63,000. In 1880, the County ranked first in production of wheat in Illinois and fourth in the United States. In orchard

products, striking an average of all varieties of fruit, Madison County was second.

The growth of Madison County between 1840 and 1900 was fairly rapid. The County's population was reported at 14,433 in 1840; by 1900 it had increased to 64,694. During this period, the County experienced a transformation from an agriculturally oriented economy to an industrially oriented economy. Also during the 1850s, railroads were built between most of the major cities of the County.

Mining Era

In the 1860s coal mining began to have an effect on the economy of many towns in the County. The railroads not only allowed the tapping of many coal seams within Madison County, but stimulated major industrial development as well. By the turn of the century, the American Bottoms in Madison as well as St. Clair County were rapidly developing as heavy industrial centers.

The Twentieth Century

With the Twentieth Century came the introduction of many new inventions and conveniences to the residents of Madison County. Included among these were electricity, telephones, water and sewer installations, electrical streetcars and automobiles. The nation enjoyed unlimited prosperity at this time, and business was booming both locally and nationally. Census figures for 1900 revealed that Madison County with a population of 64,694 had one of the largest County populations in the state. The Tri-Cities area and Alton had developed into major population and employment centers in the County.

A Period of Adjustment

The era of prosperity within Madison County came to an end with the great market crash of 1929. The nation was swept into a severe financial depression that lasted virtually to the start of World War II. The effects of this economic and social upheaval were felt in Madison County in a number of ways. Coal mining declined drastically in the 1930s and many mines in the County were closed. Many businesses and industries experienced financial difficulties and unemployment was prevalent. Population growth slowed considerably from 1930 to 1940, and the economy shifted from predominantly mining and agriculture to a more regionally oriented economy.

The Post-War Years: Boom and Growth

From World War II to the present, Madison County has experienced a period of rapid growth and expansion. After the war, major highway improvements were made and people began commuting greater distances to work. The pre-war trend toward urbanization was reversed as increasing numbers of people moved to the suburbs. Suburbanization, in turn, brought about the creation of local shopping centers.

The Korean War, the "Vietnam Conflict" and the expansion of domestic and foreign markets have been major factors stimulating economic growth and development within the County. The County's population has increased significantly since 1950.

Madison County has witnessed tremendous growth in population and diversity over the past 50 years. Once again agriculture has become a huge part of the County's economy. Rapid urbanization and development has made the County a nice place to live. It offers residents employment opportunities, transportation facilities, shopping and service facilities as well as a close proximity to St. Louis, a major city.

Currently Madison County is in the midst of an era of almost unlimited potential for growth. The County's location within the metropolitan area, its healthy industrial base, its extensive transportation system and undeveloped or vacant land has provided Madison County with all the necessary attributes for a prosperous future.

Figure 15
Population Change
1950 - 1990
Madison County, Illinois

Year	Population	% Change Over Decade	% of Population Non-white	% of Population in Urban Area
1950	182,307	22.1	5.3	72.6
1960	224,689	23.2	5.4	71.8
1970	250,911	11.7	5.7	71.7
1980	247,691	-1.3	6.72	81.8
1990	249,238	.6	7.6	83.8

Source: County and City Data Book. U.S. Department of Commerce, Bureau of the Census.

PHYSIOGRAPHY

Madison County has an extremely wide variety of topographic features. The major features are the upland till plains and bluffs and the alluvial Mississippi River Valley, known as the American Bottoms.

The highly urbanized American Bottoms make up about 14 percent of the County. It occurs as three major areas. The first area consists of alternating narrow ridges and swales. It is

adjacent to the river and is quite extensive in the southwestern part of the County. The second area consists of terraces and foot slopes adjacent to bluffs. It includes the colluvial foot slopes between the bluffs and the floor of the valley. The terraces, known as the Poag and Wood River Terraces, are relatively large, are elevated, and have moderately steep escarpments. The third area consists of very broad flats and depressions. It is between the terraces and the ridges and swales. It extends from Wood River to the northeastern part of Horseshoe Lake. It is characterized by broad swales, sloughs, and backwater marshes. The soils in this area are high in clay content, are poorly drained, and are often ponded.

The uplands are loess-covered glacial till plains. The thickest loess deposits, 40 to 80 feet thick, are on the bluffs. The loess thins to 5 feet in the northeast corner of the County. Limestone outcrops are quite common in the bluff area northwest of Alton. This highly weathered limestone is responsible for small areas of Karst topography, which is characterized by sinkholes.

The bluff area is highly dissected. It has long, narrow ridges and steep side slopes. East of the bluffs, the ridges are rather broad and the side slopes are less sloping. This gently sloping landscape has a thick layer of loess. To the east and northeast is a broad, level plain that has a few low-lying knolls and ridges and is dissected by many small creeks.

The bluffs are as high as 650 feet above sea level. On the American Bottoms, the swales are as low as 400 feet and the ridges are about 425 feet above sea level. The elevation of the broad, level ridges is about 620 feet above sea level in the northeastern part of the County and gradually decreases to about 540 feet in the southeast corner.

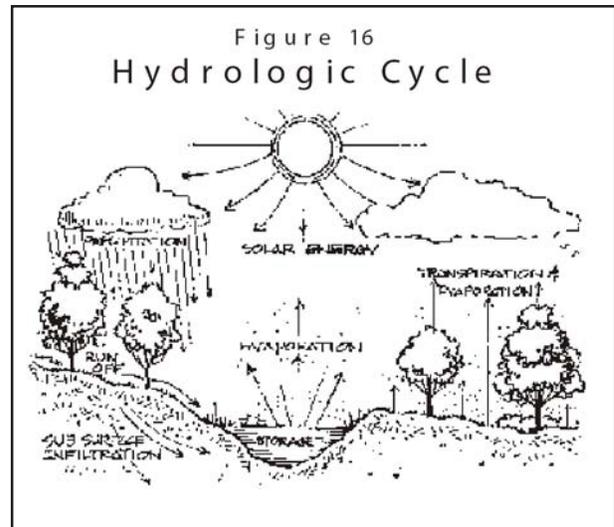
Water in the main drainageways in the County flows to the south and west. Wood River Creek and Cahokia Creek drain the western half of the County and empty directly into the Mississippi River. Silver Creek and a small part of Sugar Creek drain the eastern half of the County and flow south to the Kaskaskia River, which drains into the Mississippi River.

CLIMATE

Madison County lies within Illinois' west southwest climatological region and has continental climate with marked seasonal shifts in temperature. Summers are warm and humid, spring and autumn are mild, and winters are cold with snowfall accumulations. Average annual temperatures are 55° F. Temperatures in January range from an average low of 19° F to a high of 36° F and in July from an average low of 69° F to an average high of 89° F. Annual precipitation averages 36 inches with a mean relative humidity of 82 percent at 6:00 a.m. and 64 percent at 6:00 p.m. Mean annual snowfall is 16 inches. The freeze-free season averages 182 days, with the last freeze occurring in late March and the first freeze occurring in mid-November. During the year, the sun shines an average of 60 percent of possible hours. Prevailing winds average 11 miles per hour.

HYDROLOGY

Hydrology is the science that deals with the waters of the earth. The hydrology of Madison County includes the rainfall, runoff, storage, and movement of water through its landscape and ground (Figure 16). Of special concern to land use planning are drainage basins, flood plains, and wetlands.



Drainage Basins

Madison County is divided into two primary drainage basins, the Mississippi and Kaskaskia. It should be noted that the Kaskaskia enters the Mississippi in Randolph County. A drainage basin is the total land surface area occupied by a network of rivers, streams, and their adjacent slopes. The bluff areas of eastern Madison County including portions of the cities of Collinsville, Maryville, Glen Carbon and Edwardsville empty in to the American Bottoms drainage system that ultimately reaches the Mississippi River.

Watersheds

The river drainage basins in Madison County are divided into sub-basins or watersheds. Each watershed in Madison County is typically named for its receiving body of water. Madison County watersheds are shown on Plate 8.

Flood Plains

A flood plain is an area of low-lying, flat ground on either side of a river, stream, pond, or lake subject to periodic inundation by flooding. Flood plains are the natural storage areas for water overflow after heavy rains or snow melt. Hence, loss of storage in the flood plains increases the likelihood of flooding and increased damage both upstream and downstream.

Plate 8 shows the general location the 100-year flood plains in unincorporated Madison County as defined by the Federal Emergency Management Agency. The area of the 100-year flood plains has a one percent chance of being flooded in any given year.

Wetlands

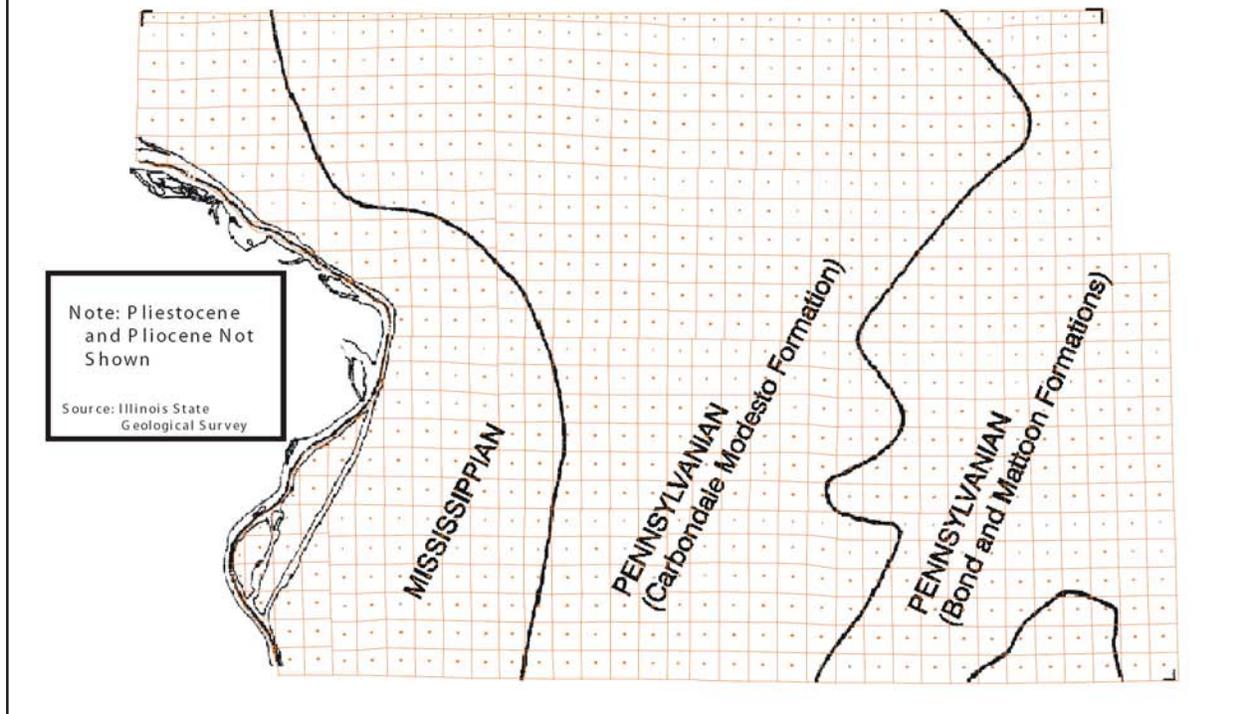
Wetlands are a sensitive environmental resource, integral to the hydrologic cycle. Wetlands are ecosystems periodically inundated by water. The Illinois Land Cover Database, (1991-1995), identified 22,398 acres of remaining wetlands and open water in Madison County (Figure 29). Approximately 16,817 acres of bottomland forests habitat were included. Subtracting this bottomland forests amount nets about 5,581 acres of wetlands remaining in Madison County. Wetland types found in Madison County are shallow marsh, wet meadow, deep marsh, swamp and shallow water.

Figure 17
Bedrock Topography
Madison County, Illinois



Figure 18

Generalized Bedrock Geology Madison County, Illinois



Geology/Hydrology

Bedrock - The bedrock underlying Southwestern Illinois consists of Cambrian, Ordovician, Silurian, Devonian, Mississippian, and Pennsylvanian sedimentary rocks (i.e., sandstone, shale, dolomite, and limestone) resting on crystalline basement rocks composed mainly of granite. Tilting and folding of the bedrock surface resulted in the present bedrock surface topography shown in Figure 17 and the distribution of the uppermost bedrock units as shown in Figure 18.

The Silurian and Devonian bedrock lies under younger bedrock formations throughout the study area. Consisting of limestone and dolomite, the rocks may yield ground water from joints and channels but the water is too deep and highly mineralized to be considered as potential sources of ground water supply.

Mississippian rocks, composed of limestone, sandstone and shale, are prevalent throughout most of the western portion of Madison County. Mississippian limestones and sandstones are suitable sources of ground water supply for small to medium uses where they are present immediately below the unconsolidated material or where they are covered by thin Pennsylvanian formations. This bedrock aquifer is of little significance in the American Bottoms where the shallow sand and gravel aquifer offers an abundance of ground water. Mississippian rocks in the extreme western uplands are fine-grained and cherty limestones in which sinkholes occur forming Karst topography. Karst is a term used to describe a condition in which soluble limestone or dolomite has been partially dissolved as a result of chemical actions

induced by water passing through carbonate rock. When sizable quantities of rock have been dissolved, the land surface often subsides as a result of the lack of supporting bedrock. The surface depressions created are known as sinkholes and usually lead directly to caverns containing underground streams. Because of the damage of pollution in wells that penetrate shallow cavernous limestone, wells in this formation must be constructed with special attention to sanitary practices.

The Pennsylvanian rocks, found directly below the glacial drift in the central and eastern portions of the study area, have relatively low permeability and consist mainly of shales, sandstone, thin limestone and coal. The water-yielding character of these formations is variable but generally very low. The only formations that yield any appreciable amounts of water in these rocks are the sandstones. Because the sandstones differ laterally in permeability, they are not water-yielding at all sites. The chances of obtaining a well in the Pennsylvanian aquifers yielding more than 20 gpm are poor (see Figure 19). In addition, as the depth of the aquifer increases, the water's mineral content also increases. As a result, the use of ground water from these formations is extremely limited. Locally, however, shallow sandstone and creviced limestone may yield small supplies of ground water in areas where drift supplies are inadequate.

Unconsolidated Deposits - The glacial drifts. Ranging in thickness from 5 to 200 feet, which blankets the bedrock in Southwestern Illinois, was deposited during the Pleistocene Epoch. This later period in geologic history, which is often referred to as the Ice Age, began about one million years ago and was marked by the advance of continental glaciation. Although four major glacial advances covered portions of Illinois, glacial materials in the study area

represent deposits left by only the last two advances—the Illinoian and the Wisconsinan. The Illinoian Till Plain comprises much of the area east of the Mississippi River bluffs. Wisconsinan Till is not present within the study area due to the fact that the Wisconsinan ice sheet did not advance into the study area. However, the effects of Wisconsinan glaciation within the study area are extremely widespread in the form of wind and water transported glacial materials. Melting glaciers deposited sand, gravel, silt and clay. After the flooding glacial meltwaters had receded, the glacial material had been deposited in the stream valleys became exposed. When these materials had dried, the wind picked up many of the fine-grained sand, silt and clay (mostly silt) sediments and deposited them on the uplands in uniform layers known as loess. Since winds were generally from the northwest, the loess deposits are thicker on the uplands adjacent to the Mississippi River flood plain. The thickness of the glacial drift is highly variable.

A majority of the available ground water found in Madison County is taken from valley fill materials. Most of the ground water from valley fill material is withdrawn from the flood plain of the Mississippi River. The probabilities for obtaining high yield wells for industrial and municipal uses are favorable in these areas. High capacity wells reach excellent water yielding sand and gravel deposits at depths of 50 to 75 feet.

The Mississippi River flood plain is the dominant source of ground water recovered from valley fill materials. The valley fill is composed of recent alluvium and glacial valley train material and is underlain by Mississippian and Pennsylvanian bedrock, consisting of limestone and dolomite with subordinate amounts of sandstone and shale.

It has an average thickness of 120 feet and ranges in thickness from less than one foot near the bluffs to over 170 feet near the City of Wood River. The valley fill is generally at its greatest thickness at a mid-point between the bluffs and the river. The coarsest deposits most favorable for water development are commonly encountered near bedrock and often average 30 to 40 feet in thickness. Recharge within the area is from precipitation, induced infiltration of surface water from the Mississippi River and small streams traversing the area, and subsurface flow from the bluffs bordering the area. High ground water levels are a major problem associated with the unconsolidated aquifer located in the Mississippi River flood plain.

Potential Yields of Aquifers

Within the study area, the greatest potential yields are found in the sand and gravel aquifers located in the alluvial valley of the Mississippi (American Bottoms). Potential yields of the sand and gravel aquifers in the glacial till plain is sparse. Figure 20 illustrates the potential yields for these sand and gravel aquifers. A very narrow strip of Mississippi River flood plain near the river is particularly suitable for the development of high-capacity wells. With conditions favorable for ground water recharge from the river, this narrow strip has an estimated potential yield of 3,000,000 - 5,000,000 gallons per day per square mile (gpd/sq.mi.). With the exception of a narrow band at the foot of the bluffs, excellent ground

Figure 19
Est. Potential Yield of Wells in Bedrock Aquifers
Madison County, Illinois

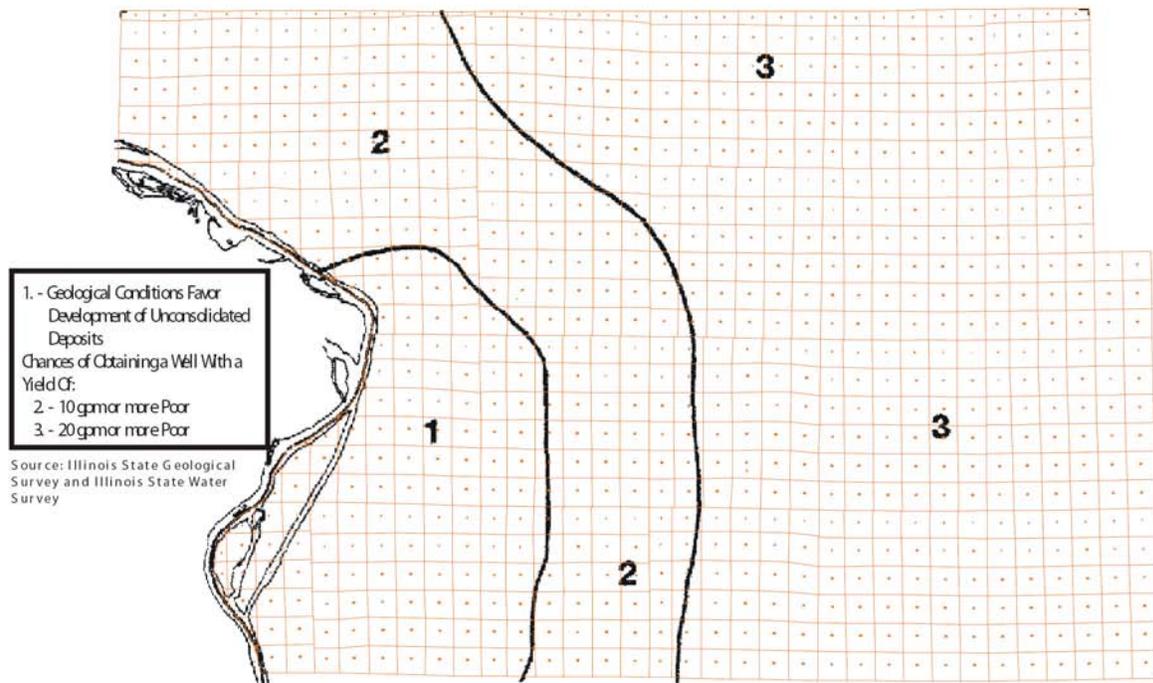
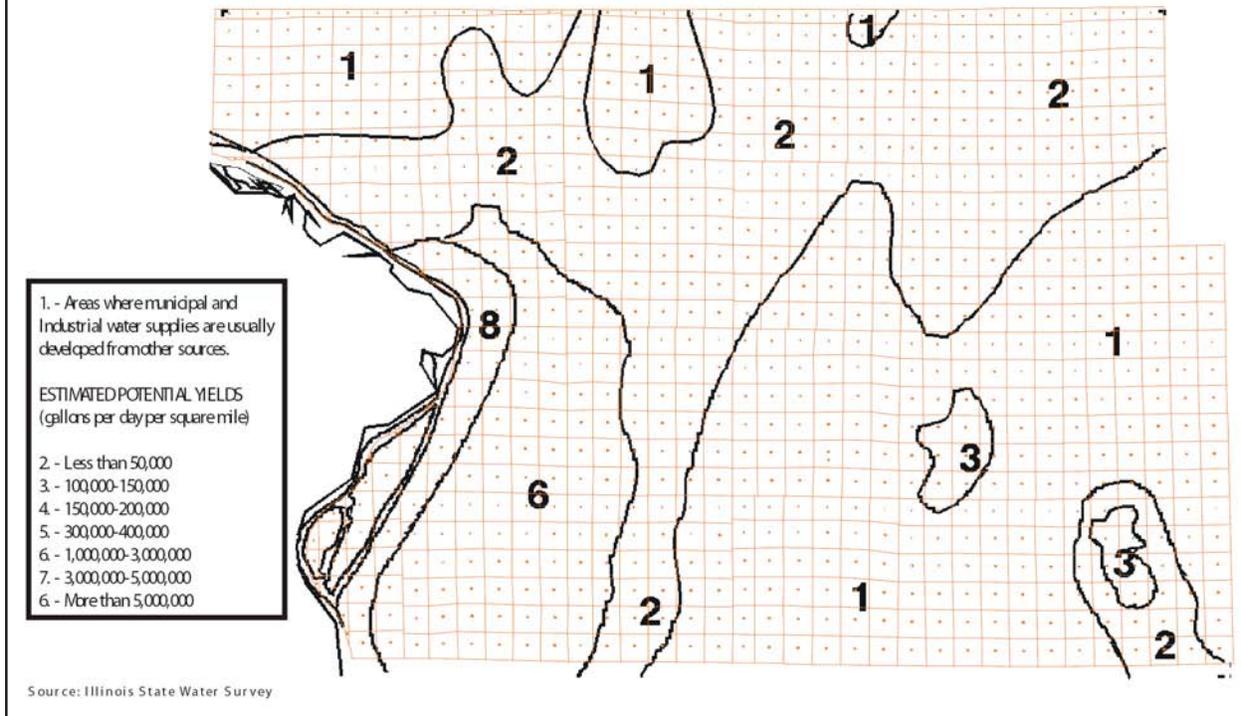


Figure 20
 Est. Potential Yield of Principal Sand & Gravel Aquifers
 Madison County, Illinois



water yielding sand and gravel aquifers are also present throughout the remainder of the Mississippi River flood plain. Potential yields from this aquifer range from 300,000 gpd/sq.mi. to 400,000 gpd/sq.mi. That part of the flood plain near the base of the bluffs is less favorable for the development of high-capacity wells than the remainder of the flood plain. The sand and gravel deposits near the bluff are thinner than those closer to the river and are somewhat discontinuous. Wells in this area will yield less than 50,000 gpd/sq.mi.

Small areas with potential yields of 100,000 - 150,000 gpd/sq.mi. are associated with valley fill deposits in eastern Madison County. The best yields are obtained from wells associated with Silver Creek. Only one community - Alhambra in Madison County - receives its water supply from wells tapping sand and gravel aquifers along the Silver Creek Bottoms.

On the vast majority of the upland area, the glacial drift is thin and does not contain sand and gravel deposits which have the capability for yielding significant amounts of water. Aquifers with potential yields of less than 50,000 gpd/sq.mi. are available in the thin glacial deposits of northern Madison County. Most of the uplands have been identified by the Illinois State Water Survey as areas where municipal and industrial water supplies are usually obtained from other sources, e.g., the Mississippi River flood plain and Silver Creek.

The most important aquifers are deposits of sand and gravel, particularly the aquifers in the American Bottoms. The bedrock, although in part capable of producing large quantities of ground water is of negligible importance in the American Bottoms because of the excellent sand and gravel aquifer. The Mississippian rocks (limestone, sandstone, and shale) which underlie the American Bottoms extend into the

upland to the extreme northwestern area of Madison County. These bedrock aquifers have an estimated potential yield of 50,000 - 100,000 gpd/sq.mi. Karst topography present in these areas dictates that special precautions be taken when constructing wells to avoid polluting the aquifer. The remainder of the upland area is capable of producing less than 50,000 gpd/sq.mi. In many areas of the upland, however, the bedrock is the only ground water source. Where the drift is thin and underlain by Pennsylvanian rocks limited amounts of ground water for domestic and farm use can be obtained; from shallow sandstones and creviced limestones. As the depth of the aquifer increases, the mineral content also increases, thereby limiting its use.

SOILS

Madison County soils were formed over millions of years of the County's geologic history. The great American Bottoms flood plain soils are a reflection of the Mississippi River and loessal bluff soils bear witness to the power of wind. This loess soil, varying from 40 to 80 feet deep in the Bluff area, thins to about 5 feet deep in the northeast portion of the County.

The General Soil Map, (Plate 10) provides a view of the suitability of large areas for general land uses but specific project planning requirements necessitate reference to the Soil Survey of Madison County for site specific information.

Madison County history has produced soils very favorable to agricultural production with approximately 217,240 acres or an estimated 45 percent of the County's soils classed as prime agricultural soils.

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to food, feed, forage, fiber, and oilseed crops. It may be cultivated land, pasture, woodland, or other land, but it is not urban land, built-up land, or water areas. It either is used for food or fiber crops or is available for those crops. The soil qualities, growing season, and moisture supply are those needed for a well managed soil to produce a sustained higher yield of crops in an economic manner. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

Prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The level of acidity and alkalinity is acceptable. Prime farmland has few or no rocks and is permeable to water and air. It is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

Associations 2, 3, 7, 8, and 9, which are described under the heading "General Soil Map Units" have the highest percentage of prime farmland, but this land is throughout the County.

Soil is a natural resource that forms a basic ingredient in our environment, economy and future. Informed developmental decision-making should specifically consider methods for the continued agricultural use of prime soils, development controls necessary to accommodate soils characteristics and land use proposals that also incorporate soils considerations. Detailed soils information is readily available in the Soil Survey of Madison County.

MINERAL RESOURCES

Mineral resources - sand, gravel, oil, gas, limestone and dolomite - have historically played an important role in the development and economic growth of Madison County. The County's mineral resources should be carefully managed to ensure availability for future generations. After removal of the mineral resources, sites must be properly reclaimed to beneficial land uses.

Economic Impact of Mineral Resources

The sand, gravel, limestone/dolomite, and oil and gas deposits of Madison County are its most valuable mineral resources. Over a dozen firms utilize the mineral resources within the County providing employment for a small number (less than 1% of the County employment) of workers. Employment in this industry has remained fairly static from 1989-1994. The County helped Illinois rank fifth in the nation in sand, gravel, and limestone production in 1989, when the state produced an estimated value of \$109 million of sand and gravel and \$257 million of limestone. Madison County ranks 36th out of 102 counties in Illinois based upon the total value of minerals extracted and processed. The minerals extracted in order of value are: crude oil, stone, and sand/gravel. The minerals processed in order of value are: sulfur, slag, and pig iron. Mineral products in order of value are: clay, coke, and glass. Values on the individual components are not available so that confidentiality of individual producers can be preserved.

The major oil wells are near the Marine and Livingston areas. A majority of the area surrounding Collinsville, Edwardsville and northeast of Alton has underground coal mines which have been closed and/or abandoned.

Mineral Resource Management

Madison County's recommended approach to mineral resource management is to plan and preserve, regulate and reclaim. The long term benefit of this approach is to protect mineral resources for future generations, provide economic development, and ensure reclamation to a desirable subsequent use.

Land use planning and geological information is vital to the protection of mineral resources for future generations. The Illinois State Geological Survey provides valuable information on mineral deposits. Major potential deposits should be protected until extraction becomes feasible. Areas protected for future extraction must be far enough away from residential development or sufficiently buffered. Current pits and quarries should also have a sufficient buffer to allow for possible future expansion.

VEGETATION

The vegetation of Madison County belongs to the oak-hickory ecosystem, a forest system that once covered large areas in Illinois. This vegetation pattern was influenced by the climate soils, and geologic features of the region. Before settlement of Madison County by the first Europeans in the 1780s forest cover was predominant. The County was home to a diverse mix of plant species ranging from hardwood trees to wetlands and prairie plants.

Most of the original vegetation has been destroyed by settlement and agriculture. Early settlers usually bypassed the prairies believing the land must be infertile because no trees grew there. Nor could their wooden plows cultivate the dense prairie sod. These factors, along with the need for timber for buildings and heating fuel, led to early settlement in the wooded areas and the loss of many pre-settlement forests.

Similarly, drainage projects in the Bottoms were implemented by settlements adjacent to the Mississippi River as wetlands were converted to development and agriculture.

One estimate of all forested land placed Madison County's current woodlands at 80,492 acres approximately 17 percent of the land. Hardwood trees of the uplands are predominantly oak, and hickory, with various understory trees. Trees of the Bottoms forest areas are predominantly cottonwood, sycamore, silver maple, willow, box elder and ash.

Areas of prairie grasses and forbs, with grasses often growing four to six feet tall, once broke the landscape in portions of eastern Madison County. The introduction of the moldboard plow in 1837 as well as drainage improvements helped transform prairies and the American Bottoms to fertile fields of grains. In 1994, the Illinois Natural Heritage List of Threatened and Endangered Species for Madison County included seven plant species. One threatened species, Hairy Bead Grass, is known to exist only on private land in Madison and Lee Counties, Illinois. Another species, the Spring Ladies Tresses, are found along railroad rights-of-way within Madison County. This species is threatened by right-of-way management.

Madison County has approximately 22,398 acres of wetlands (marshes, bogs, and swamps), according to the land cover database. One of the identifying factors of a wetland is the presence of plants adapted to wet soils, surface water and/or flooding. Some of the plants most commonly associated with wetlands are sedges, and cattails. Wetland trees include willow, gum, sycamore and cottonwood.

WILDLIFE

The forests, bottom lands and prairies that covered Madison County prior to extensive settlement provided numerous wildlife habitats. Food, protection, shelter, and nesting materials were available in abundance for a variety of wild species. As settlement progressed, forests were reduced to woodlots and prairies cultivated for farming. During early settlement times, when the vegetative pattern was changing and foreign species introduced, the number of habitats actually increased. This was partially due to the "edge effect" — the area where two habitats abut or intersperse. As agriculture became the predominant land use, fewer habitats were available as prairie, woodland, and wetland areas declined.

The most common animals in Madison County today are those that have adapted to these remaining edges and disturbed natural communities. This phenomenon has been repeated throughout Illinois. These include raccoon, red fox, white-tailed deer, coyote, eastern cottontail rabbit, striped skunk, and gray and fox squirrel. Adaptable bird species include cardinal, robin, black birds, and sparrows.

There are nineteen threatened or endangered animal species in Madison County. All families of the animal kingdom are represented — birds, mammals, reptiles, fish and several types of mussel.

The best known from the animal family are the Indiana Bat and the Peregrine Falcon. The Peregrine Falcon is among those listed as endangered nationwide. The falcon is slowly being reintroduced into suitable habitat in many areas.

The Snowy Egret is a post breeding wanderer throughout Illinois and a rare summer resident of Madison and St. Clair Counties. The Snowy Egret has always been restricted to the American Bottoms of the Mississippi River. Protection of forage and nesting areas from disturbance and human encroachment is critical to the survival of the Snowy Egret as a breeding species.

The nesting, breeding and foraging areas of the entire animal family must be considered before more development erases these threatened and endangered species from Madison County.

The inclusion of environmental consideration, including plants and wildlife, must become an element of local policy and decision-making if Madison County's quality of life is to be maintained. Consideration of open space, forest preservation and wetlands need to be policy considerations for subsequent planning efforts and implementation.

DEMOGRAPHIC PROFILE

Demographics is the science of analyzing population size, composition, and spatial distribution. As Madison County population

expands and the demand for development of estimation of future population growth and the characteristics of that growth. Such demographic analysis is essential to comprehensive planning whose overall goal is to improve the environment wherein people work and live. Population and population trends determine the need and level of required public services, especially public safety, utilities, schools, and parks. This section presents Madison County's demographic profile focusing on its population and distribution within the County.

The 1990 Census count for Madison County, both incorporated and unincorporated, was 249,238 people. The 1998 census estimate of Madison County population is 259,351 people.

Madison County Share Of Southwestern Illinois Population 1990

Madison County is part of the seven county southwestern Illinois Region. In 1990, approximately 5.5 percent of the State of Illinois population was concentrated in this region. Among the seven county region, Madison County ranked second containing 39.4 percent of the southwestern Illinois population in 1990.

Figure 21
Population Change 1930 - 1998
Madison County, Illinois

Year	Population	% Change	Absolute Change
1930	143,830		
1940	149,349	4%	5,519
1950	182,307	18%	32,958
1960	224,689	19%	42,382
1970	250,934	10%	26,245
1980	247,691	-1%	(3,243)
1990	249,238	1%	1,547
1998	259,351	4%	10,113

Source U.S. Dept. of Commerce, Bureau of the Census, Census of Population and Housing, 1930-1990, and 1998 estimate.

Within Madison County, the population concentration of incorporated places averaged 69.5 percent in 1970, 70 percent in 1980 and 75.5 percent in 1990 and unincorporated averaged 30.5 percent in 1970, 30 percent in 1980 and 24.5 percent in 1990.

Madison County's population is experiencing a general aging of its population similar to national trends. Age groups under five have changed little from 1980 to 1990, age group 5 to 24 years have declined by 16.2 percent and age group 24 to 75 years have increased overall by 9.9 percent between 1980 and 1990.

Figure 22
County Share of
Southwestern Illinois Population
Madison County, Illinois

	1980	Percent of S. Willincis	1990	Percent of S. Willincis
Madison	247,671	39.12%	249,238	39.37%
St. Clair	265,469	41.93%	262,852	41.53%
Monroe	20,117	3.18%	22,422	3.54%
Bond	16,224	2.56%	14,991	2.37%
Clinton	32,617	5.15%	33,944	5.36%
Washington	15,472	2.44%	14,965	2.36%
Randolph	35,566	5.62%	34,583	5.46%
S. Willincis	633,136		632,995	

Source: U.S. Dept. of Commerce, Bureau of the Census, Census of Population and Housing 1980, and 1990

Figure 23
Age-Sex Distribution 1980 - 1990
Madison County, Illinois

	1980			1990			% Change 1980-1990
	Total	Female	Male	Total	Female	Male	
Total	247,691	128,924	118,767	249,238	129,673	119,565	0.01
Under 5 yrs	17,296	8,527	8,769	17,914	8,802	9,112	0.04
5-9 yrs.	18,500	9,054	9,446	18,287	8,904	9,383	(0.01)
10-14 yrs.	20,252	9,954	10,298	17,337	8,565	8,772	(0.14)
15-19 yrs.	22,818	11,404	11,414	17,302	8,603	8,699	(0.24)
20-24 yrs.	22,019	11,336	10,683	17,093	8,790	8,303	(0.22)
25-29 yrs.	19,598	10,039	9,559	20,000	10,140	9,860	0.02
30-34 yrs.	17,240	8,836	8,404	21,218	10,629	10,589	0.23
35-44 yrs.	27,737	14,266	13,471	36,025	18,301	17,724	0.30
45-54 yrs.	27,390	14,217	13,173	25,867	13,196	12,671	(0.06)
55-59 yrs	13,855	7,264	6,591	11,667	6,162	5,505	(0.16)
60-64 yrs	11,961	6,463	5,498	11,937	6,401	5,536	0.00
65-69 yrs	9,612	5,381	4,231	11,106	6,232	4,874	0.15
70-74 yrs	8,153	4,772	3,381	8,655	5,085	3,570	0.06
75-79 yrs	5,521	3,447	2,074	6,885	4,277	2,608	0.24
80-84 yrs	3,557	2,336	1,221	4,514	3,018	1,496	2.69
85+ yrs	2,401	1,756	648	3,431	2,568	863	0.42

Source: U.S. Dept. of Commerce, Bureau of the Census, Census of Population and Housing, 1980 and 1990

Figure 24
Township Population
Madison County, Illinois

TOWNSHIP	Population				Change 1970 - 1980		Change 1980 - 1990		Change 1990 - 1998		Change 1970 - 1998	
	1970	1980	1990	1998	Number	Per cent						
Alton	39700	34171	32905	31457	-5529	-13.93%	-1266	-3.70%	-1146	-4.60%	-8243	-20.76%
Chouteau	8521	8627	7792	8058	106	1.24%	-835	-9.68%	266	3.30%	-463	-5.43%
Collinsville	26373	27158	29842	31575	785	2.98%	2684	9.88%	1733	5.49%	5202	19.72%
Edwardsville	18166	23229	26665	31565	5063	27.87%	3436	14.79%	4900	15.52%	13399	73.76%
Fort Russell	5487	5912	6534	6945	425	7.75%	622	10.52%	411	5.92%	1458	26.57%
Foster	2760	3502	3719	3946	742	26.88%	217	6.20%	227	5.75%	186	42.97%
Godfrey	16168	15860	15785	17340	-308	-1.90%	-75	-0.47%	1556	8.97%	1172	7.25%
Granite City	40685	36815	32862	31078	-3870	-9.51%	-3953	-10.74%	-1784	-5.74%	-9607	-23.61%
Hamel	1170	1744	1885	1804	274	18.64%	-59	-3.38%	119	6.60%	334	22.72%
Helvetia	5902	6898	7238	7858	996	16.88%	340	4.93%	620	7.89%	1956	33.14%
Jarvis	3957	6322	9360	1065	2365	59.77%	3038	48.05%	1705	15.41%	7108	179.63%
Leff	486	524	488	522	38	7.82%	-36	-6.87%	34	6.51%	36	7.41%
Marine	1175	1871	1852	1933	396	26.85%	-19	-1.02%	81	4.19%	458	31.05%
Moro	1704	2135	2768	2973	431	25.29%	633	29.65%	205	6.90%	1269	74.47%
Nomeki	13872	13606	12492	13610	-266	-1.92%	-1114	-8.19%	118	8.21%	-262	-1.89%
New Douglas	627	632	644	644	5	0.80%	12	1.90%	0	0.00%	17	2.71%
Olve	1855	1950	1820	1811	95	5.12%	-130	-6.67%	-9	-0.50%	-44	-2.37%
Omphent	1939	1964	1995	2074	25	1.29%	31	1.58%	79	3.81%	135	6.96%
Pin Oak	1366	1593	2007	2166	227	16.62%	411	25.99%	159	7.34%	800	58.57%
St. Jacob	1394	1735	1756	1845	341	24.46%	21	1.21%	89	4.82%	451	32.35%
Sage	2448	2979	3421	3699	531	21.69%	442	14.84%	278	7.52%	1251	51.10%
Venice	12925	9122	8657	8450	-3803	-29.42%	-465	-5.10%	-207	-2.45%	-4475	-34.62%
Wood River	40479	38000	35505	35439	-2479	-6.12%	-2494	-6.56%	-67	-0.19%	-5040	-12.45%
Total	250911	247671	249238	259350	-3240	-1.29%	1567	0.63%	1012	3.90%	8439	3.36%
Total Inc.	174333	173607	183303	199926	-726	-0.42%	9696	5.59%	16623	8.31%	25593	14.68%
Total Uninc.	76578	74064	65935	59424	-2544	-3.28%	-8129	-10.98%	-6511	-10.96%	-17544	-22.40%
Total County	250911	247671	249238	259350	-3240	-1.29%	1567	0.63%	1012	3.90%	8439	3.36%

Source: U.S. Dept. of Commerce, Bureau of the Census, Census of Population and Housing, 1970, 1980, 1990, and 1998 Estimates

Township Growth

The township with the largest population continues to be in Wood River Township. In 1990 Wood River Township had 14.2 percent of the County's total population.

Historically, the population in Madison County has been concentrated in the river townships, but growth trends 1970-1994 show generally declining or very modest growth in river townships with bluff and rural townships growing at a faster rate. Over the past three decades, the highest percentage rate of population growth has occurred in the townships of Jarvis, 155.37 percent, Moro, 95.42 percent and Edwardsville 67.28 percent.

Municipal Population

The greatest municipal population in Madison County continues to be in the City of Alton. In 1990, Alton had 32,905 people; followed by Granite City, 32,862 and the portion of Collinsville, in Madison County 20,100. The 2020 projected population breakdown by municipality is expected to follow a similar pattern.

Figure 25
Municipal Population
Madison County, Illinois

	Population				Change 1970 - 1980		Change 1980 - 1990		Change 1990 - 1998		Change 1970 - 1998	
	1970	1980	1990	1998	Number	Per cent						
CITY/ VILLAGE												
Ahanbra	594	643	709	703	49	8.25%	66	10.26%	-6	-0.85%	109	18.35
Alton	3970	3471	3290	3145	-559	-13.93%	-1266	-3.70%	-1448	-4.60%	-824	-20.76
Bethalto	7074	8630	9507	9957	1566	22.00%	877	10.16%	450	4.52%	2883	40.75
Colsville	18224	19613	22445	23917	1389	7.62%	2833	14.44%	751	3.24%	4973	27.29
East Alton	7309	723	7063	6700	-186	-2.54%	-60	-0.84%	-363	-5.42%	-609	-8.33
Edwardsville	1070	12480	14579	16961	110	12.74%	2099	16.82%	2382	14.04%	5891	53.22
Fairmont City*			39	35	0		39		-4	-11.43%	35	
Gen Carbon	1897	5197	7731	10012	3300	173.96%	2534	48.76%	2281	22.78%	815	427.78
Godfrey			5436	17340	0		5436		1904	68.65%	17340	
Grant City	40685	36815	32862	31078	-3870	-9.51%	-3953	-10.74%	-1784	-5.74%	-9607	-23.6
Grantfork	182	268	273	287	106	65.43%	5	18.7%	11	4.88%	125	77.16
Hamel	454	537	530	563	83	18.28%	-7	-1.30%	33	5.86%	109	24.01
Hartford	2243	1887	1676	1583	-356	-15.87%	-21	-1.18%	-93	-5.87%	-660	-29.42
Highland	5981	7122	7525	8218	111	19.08%	403	5.66%	693	8.43%	2237	37.40
Livingston	916	949	928	890	33	3.60%	-21	-2.21%	-38	-4.27%	-26	-2.84
Madison	7042	5915	4629	4297	-1127	-16.00%	-1286	-2.174%	-332	-7.73%	-2745	-38.98
Marion	882	957	972	988	75	8.50%	15	1.57%	15	1.62%	106	12.02
Maryville	1067	1937	2576	3252	870	81.54%	639	32.99%	676	20.79%	2185	204.78
New Douglas	378	389	387	369	11	2.91%	-2	-0.51%	-18	-4.88%	-9	-2.38
Pontoon Beach	2448	3336	4013	4485	888	36.27%	677	20.29%	472	10.52%	2037	83.21
Roxana	1882	1587	1562	1487	-295	-15.67%	-25	-1.58%	-75	-5.04%	-395	-20.99
St. Jacob	659	792	752	767	133	20.18%	-40	-5.05%	15	1.96%	108	16.39
South Roxana	2241	2286	1961	1913	45	2.01%	-325	-14.22%	-48	-2.51%	-328	-14.64
Troy	2144	3772	6046	7670	1528	75.93%	2274	60.29%	1524	21.17%	5526	257.74
Vance	4680	3480	3571	3596	-1200	-25.64%	91	2.61%	25	0.70%	-1084	-23.16
Wilson	324	319	278	262	-5	-1.54%	-41	-12.85%	-16	-6.11%	-62	-19.11
Wood River	13186	12449	11190	11000	-737	-5.59%	-959	-7.70%	-490	-4.45%	-2186	-16.58
Worden	1091	953	896	894	-138	-12.65%	-57	-5.98%	-2	-0.22%	-197	-18.06
TOTAL	174333	173607	183342	199961	-726	-0.42%	9735	5.61%	1669	8.31%	25623	14.70

Source: U.S. Dept. of Commerce, Bureau of the Census, Census of Population and Housing, 1970, 1980, 1990, and 1998 Estimates

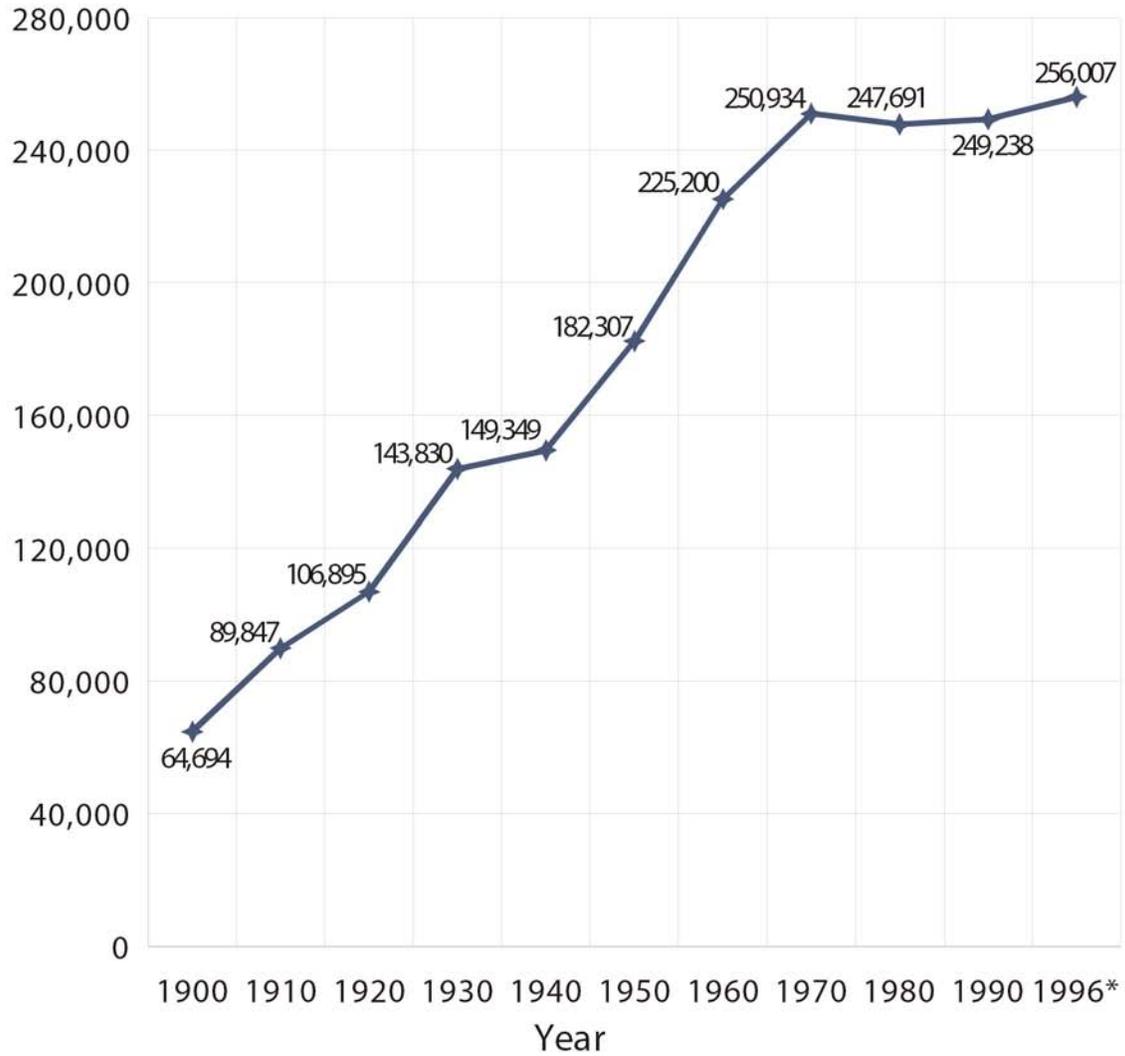
PROJECTED POPULATION

Madison County's development and population growth remained relatively static from 1970 to 1990. Development continued within portions of the County but not at a scale to include the in-migration of population which would result in population growth. In the 1990s the continuing expansion of the national economy combined with development expansion from the Missouri portion of the St. Louis Metropolitan Area, and available attractively priced land in Madison County has resulted in considerable and continuing population growth. The question now is what is the anticipated Madison County population growth to the year 2020.

The methods employed to project population growth for this Plan were the cohort survival method and a series of curve fitting/extrapolation methods. Multiple projections were made to establish a reasonable projection range. The cohort survival method using age groups (cohorts) was then employed as a preferred projection method. Additionally, the projections of several other entities were considered. Information available at the time of projection indicated a year 2020 population from the Illinois Bureau of the Budget of 285,192 and a Long Range Transportation Plan projection of 306,370.

SIMAPC's extrapolation methods produced a range of 276,819; 280,104; 285,557 and 340,311. The range accepted was 276,104 to 340,311. The results of the cohort survival projections were 299,509. We eliminated the low and high projections as not being reasonable numbers. We noted with more than curiosity the grouping of numbers at approximately 285,000 in both the SIMAPC projection and the IBOB projection. It is our belief that a projection of 285,000 represents a very average growth rate, in view of development within Madison County in the 1990s. We believe a more aggressive growth rate is justified in consideration of development pressure from the Missouri portion of the metropolitan area, the availability of land suitable for all land use developments in large tracts at reasonable prices and in a County where the transportation infrastructure is a solid asset. The cohort survival projection methodology has provided a more aggressive population growth rate and is proposed as the most reasonable projection at 299,509 persons in Madison County in the year 2020.

Figure 26
Population Trend 1900 to 1996*
Madison County, Illinois



Legend



Source: U.S. Census of Population, 1900-1990, Census Estimates 1990-1996*;
Southwestern Illinois Planning Commission

Figure 27
 Curve Fitting Extrapolation Projections
 Madison County, Illinois

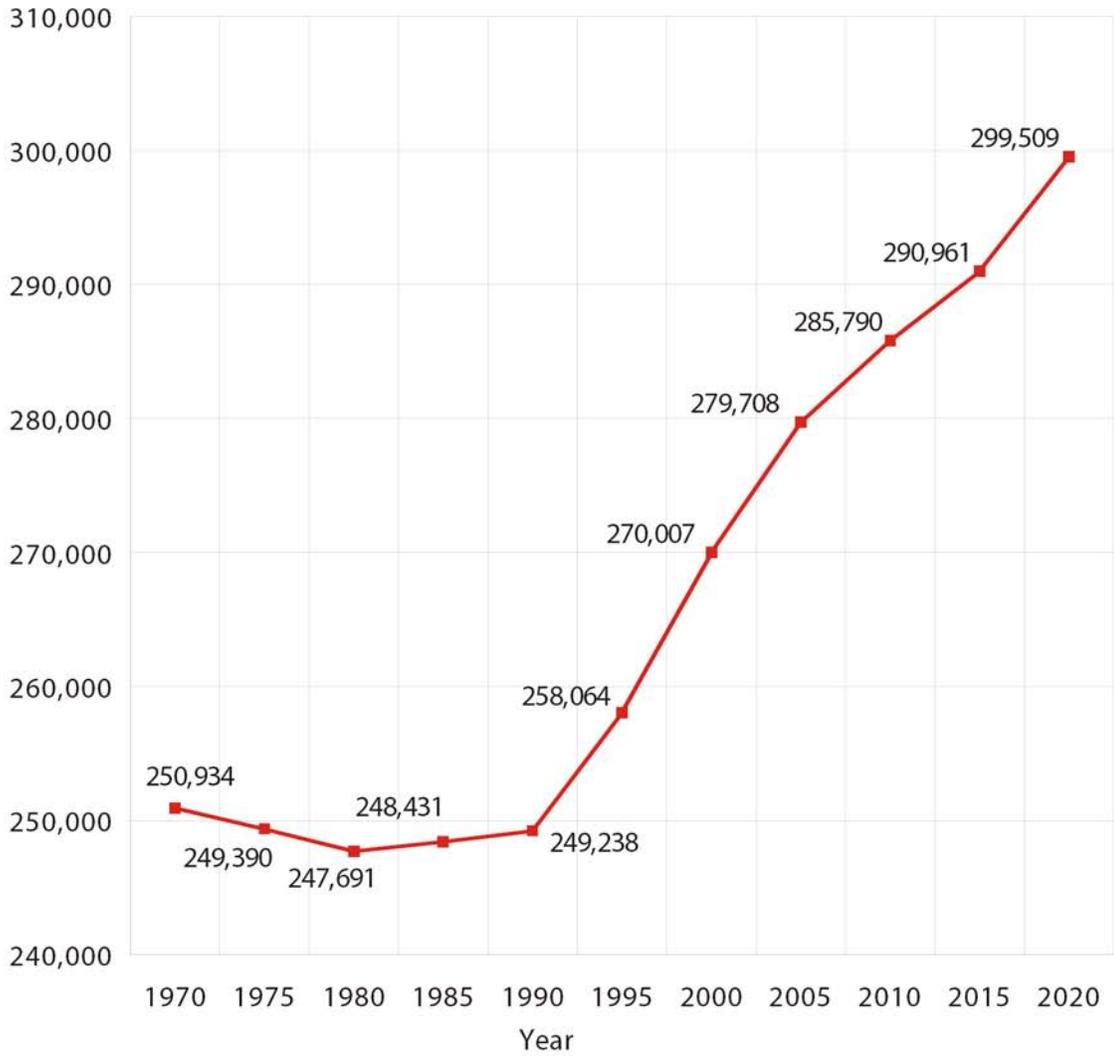


Legend



Source : Community Analysis and Planning software, Version 1.0, developed by the University of Akron
 Richard E. Klosterman; U.S. Bureau of the Census Estimates 1990-1996*;
 and Southwestern Illinois Planning Commission.

Figure 28
Cohort Projection Model
1970 thru 2020
Madison County, Illinois



Legend

■ Cohort Projection

Source : Community Analysis and Planning software, Version 1.0, developed by the University of Akron
Richard E. Klosterman; and Southwestern Illinois Planning Commission.

EXISTING LAND USE

The land area of Madison County totals 731 square miles, or approximately 474,043 acres. The method chosen for classifying and describing Madison County lands for this plan effort is the Illinois Land Cover Database, see Plate 2.

Madison County ranks 5th in the state in total urban/built-up acres (44,284) and ranks 5th in acreage devoted to small grains (49,294). The County has 22,398 acres of wetlands, (12th in the state) and 14,656 acres of open water. Forest/woodland accounts for 63,675 acres, which ranks the County 13th in the state. Of this forest total 16,817 are bottomland forest. As can be noted in this statistical description Madison County is very diverse being urban, and yet, very rural and undeveloped in many areas.

The Illinois Land Cover Database

The land cover database delineates natural features and artificial structures present upon the earth's surface at a level of detail appropriate for regional analyses. The Illinois land cover baseline is based on data obtained from satellite imagery acquired during the period of 1991-1995 and supplemented by existing, statewide spatial databases.

The database will also support a wide range of applications that require regional knowledge of surface cover characteristics. The resolution of the satellite data in the land cover database is approximately 28.5 meters X 28.5 meters (93.5 feet X 93.5 feet). Thus, the smallest discrete object detected is approximately 0.2 acres in size. While this is quite appropriate for regional applications it is not adequate to meet site specific requirements.

The database focuses on land cover or what is present on the land's surface—whether it be water, vegetation, structures or nothing at all.

Data from the Illinois Land Cover Database will not be exactly the same as data from other databases. For example, the amount of cropland in Madison County according to Illinois Agricultural Statistics will not match that in the Illinois Land Cover Database. The methods used in each data source differ and cannot be expected to produce identical results. Seven major land cover categories are delineated: 1) cropland, 2) grassland, 3) forested and wooded land, 4) wetland, 5) urban and built-up land, 6) open water, and 7) barren and exposed land. These categories are further subdivided into 21 sub-categories to provide greater detail on the Madison County landscape (the categories, sub-categories and their descriptions are shown in the table that follows).

Madison County Land Cover Categories

Cropland

Land areas covered by agricultural commodities

- Row Crops Predominantly corn and soybeans, including other row-tilled crops.
- Small Grains Oats, wheat, barley, etc.
- Orchards/Nurseries Fruit orchards and nurseries.

Grassland

- Land areas predominantly covered with grass
- Urban Grassland Residential lawns, golf courses, open spaces

and other managed grassland in urban and built-up areas.

- Rural Grassland Alfalfa, hay, pasture, greenways and other grassland cover situated outside of urban areas.

Forested and Wooded Land

- Land areas covered with trees
- Deciduous Woods Closed-canopy wooded areas characterized by tree species that possess seasonal foliage.
- Open Woods Open-canopy wooded areas.
- Coniferous Woods Wooded areas dominated by pine and other coniferous trees.

Wetland

- Shallow Marsh/Wet Meadow Areas characterized by standing water or saturated soils for brief to moderate periods during growing season.
- Deep Marsh Areas characterized by standing water or saturated soils on a semi-permanent or permanent basis during growing season.
- Bottomland Forest Forested wetland, temporarily or seasonally flooded.
- Swamp Forested wetland with permanent or semi-permanent water.
- Shallow Water Wetland Permanently flooded areas less than 20 acres in extent and less than 2 meters deep (ponds, borrow pits, open areas of marsh or swamp).

Urban and Built-up Land

- Land areas built-up with manmade structures
- High Density All or nearly all of the land surface covered with manmade structures includes urban centers, malls, town squares and airports.
- Medium Density An intermediate amount of the land surface covered with manmade structures, primarily residential and commercial development
- Low Density Only a portion of the land area covered with manmade structures that are intermixed with other land cover including urban grassland, wooded lands, includes residential subdivisions.
- Transportation Major highways, inter-changes, and rights-of-way; active rail lines, and rail lines no longer in service as of 1990.

Open Water

- Land under water
- Lakes and Rivers Open water and major stream courses.
- Streams Minor stream courses that contain water year around.

Barren and Exposed Land

- Land without vegetation or structures (e.g., quarries, bare soil surfaces and beaches).

Figure 29
Land Cover Acreage and State Ranking
Madison County, Illinois

	Acres	Rank	Percent of County	Rank
CROPLAND	238,597	38	50.3%	71
Row Crops	189,476	45	40.0%	78
Small Grains	49,115	5	10.4%	14
Orchards / Nurseries	5	42	< 0.1%	42
GRASSLAND	90,378	26	19.1%	46
Urban	24,679	7	5.2%	8
Rural	65,698	43	13.9%	67
FOREST / WOODLAND	63,675	20	13.4%	39
Deciduous	58,702	18	12.4%	34
Open Woods	4,974	28	1.1%	45
Coniferous	0	-	0.0%	-
WETLAND	22,398	12	4.7%	29
Shallow Marsh / Wet Meadow	2,064	17	0.4%	26
Deep Marsh	297	25	< 0.1%	34
Bottomland Forest	16,817	12	3.6%	31
Swamp	10	24	< 0.1%	27
Shallow Water	3,210	14	0.7%	23
URBAN / BUILT-UP LAND	44,284	5	9.3%	8
High Density	9,452	5	2.0%	8
Medium Density	24,082	5	5.1%	5
Low Density	1,348	35	0.3%	45
Transportation	9,403	2	2.0%	4
OPEN WATER	14,656	13	3.1%	20
Lakes and Rivers	11,078	12	2.3%	19
Streams	3,578	26	0.8%	67
BARREN / EXPOSED LAND	54	51	< 0.1%	57
TOTAL	474,043	19	100.0%	

Note: percent of county may not add up to 100% due to rounding.
Source: Land Cover of Illinois 1996, Illinois Department of Natural Resources