

Muscatine County Comprehensive Plan

February 2025



*Embracing history, Cultivating
progressive leadership*

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Bird's Eye View of the City of Muscatine, Muscatine Co., Iowa
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Muscatine County

Comprehensive Plan

February 2025

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Chapter 1 Introduction

Muscatine County is located on the border of eastern Iowa and western Illinois along the shores of the Mississippi River. Refer to Map 1.1 for the townships and cities located in Muscatine County. Muscatine is the largest community in Muscatine County with a population of 23,797 (2020 Census). Muscatine County is within 160 miles of Des Moines, Iowa and 205 miles to Chicago, Illinois. Interstate 80 runs north of the county border providing good cross-county access to the national transportation system. The population of Muscatine County is currently 43,235 (2020 Census). Residents describe the county as welcoming, diverse, and industrious. It also mixes agriculture with industry and considered a pearl along the Mississippi River, tied to the rich button manufacturing history from mussel shells in the river.

Muscatine County recognizes the importance of a well-defined comprehensive plan with a vision, clear goals, and policies. To further the county vision, the Board of Supervisors has updated its plan with the assistance of the Zoning Commission, Comprehensive Planning Steering Committee, focus groups, and citizen involvement. Bi-State Regional Commission assisted with plan facilitation and compiling the document. This broad-based involvement offered opportunities from a diverse and comprehensive source of county and city interests. The purpose of the plan is to outline the vision,

existing conditions, future needs, and land use identification as well as to set goals and objectives and recommend strategies for implementation.

History of Zoning and Comprehensive Planning in Muscatine County

Muscatine County is enabled by the State of Iowa under Chapter 335 County Zoning to adopt a zoning ordinance. Zoning is a police power utilized by a local government to ensure the health, safety, and welfare of its residents. The Iowa Code also requires that county zoning regulations should be made in accordance with a comprehensive plan. Although zoning applies to many land activities, Iowa Code exempts farm land, farm houses, and farm buildings from county zoning regulations as long as they are used for primarily agricultural purposes. The Iowa Code doesn't establish how counties should determine how farm land, farm houses, or farm buildings should be defined, leaving it to the counties to determine the definitions locally. Ultimately, Muscatine County has the ability to adopt zoning regulations and must have a comprehensive plan. Under state law, the county has the latitude to determine how these regulatory and guidance documents will be developed and utilized.

The first zoning ordinance for Muscatine County was adopted in 1960



and was followed by the adoption of the county subdivision ordinance in 1963. In 1998, the Muscatine County Comprehensive Plan document was adopted by the County Board. In an effort to routinely review the planning and zoning processes, the Muscatine County Board of Supervisors agreed in 2023 to undergo an update of the county's comprehensive plan under the advisement of the Comprehensive Planning Steering Committee. The planning process includes gathering of information and data, a public involvement process, and evaluation of the land use policies and future land use.

Elements of the Comprehensive Plan

This updated comprehensive plan is composed of several elements, from the county vision to implementation strategies. It is a valuable document with the following purposes: advisory, educational, guidance, coordination, and needs. The plan declares the county purpose and policies. It informs the citizens of strengths and weaknesses. The plan guides land use decisions and investments. It provides elements for joint efforts among community groups and organizations within and outside Muscatine County. The plan also outlines areas for further study or planning. It documents community needs that will help the county pursue funding opportunities, such as grants, loans, public-private partnerships, etc. The planning process is just as important as the plan document. Gathering information and

ideas, developing a framework to guide how decisions on land use and development are made, and prioritizing goals and strategies for implementation are essential for a successful plan document.

As an advisory document, the plan's goals and objectives transform the county vision into achievable tasks or benchmarks. It provides the foundation for decisions on land use, public infrastructure and services, public facilities, growth, development, and level of public investment needed to meet future community needs. As part of the plan development, Iowa's Smart Planning Principles were considered as part of the plan update process and incorporated in varying degrees based on the public and decision-making process. The principles include:

- Collaboration
- Efficiency, transparency, and consistency
- Clean, renewable, and efficient energy
- Occupational diversity
- Revitalization
- Housing diversity
- Community character
- Natural resources and agricultural protection
- Sustainable design
- Transportation diversity

Chapter 5 of the plan outlines existing socio-economic characteristics of the county by population, gender, income, housing, and educational attainment. It also outlines trends and projections for the future of Muscatine County. Chapter 6 inventories county characteristics



related to agriculture, watersheds, floodplains, geology, slope, wildlife habitats, and historic and cultural facilities.

Land use defines where people live and where they work or play. Land use patterns shape the nature of the community by reflecting urban and non-urban activity through population, employment, dwelling units, school enrollment, etc. Some locations represent areas with a greater density of urban activity, from residential, commercial, industrial, institutional or recreational land uses, or a lesser density of activity that may include parks or recreation areas, agriculture, and open space. Natural resources affect land use patterns through development limitations due to slope, erosional surfaces, prime farmland, floodplain, wetlands, archaeological sites, etc. By planning for the arrangement and intensity of land uses, Muscatine County can reduce infrastructure costs, which often result when the long-range effects of zoning, subdivisions, and site development decisions are not considered.

Public infrastructure and services provide the basic facilities and equipment needed by the county to serve its residents. The various land uses and their related activities create greater or lesser need for these facilities or services depending on the activities. While one acre of land with new houses generates more total revenue to a county than an acre of farmland, this does not provide the entire picture of the county's fiscal stability. In reality, there are times when it costs local

government more to provide services to homeowners than these residential landowners pay in property taxes. In contrast, commercial and industrial land increases the tax base and helps balance local budgets in order to provide a variety of public services. While one type of land use is not better than another, balancing a variety of land uses in the county and directing development toward existing communities provides reliable services and adds stability and quality of life for residents.

Chapter 2 is an extremely important of the plan that addresses strategies for implementation. It is a summary of specific projects, tasks, and/or actions to be undertaken in the next 20 years. The implementation strategies are considered county's path forward to address its needs and meet its goals. The course of action for implementation will require periodic review to assess needs, timing, and financial feasibility. In the implementation of projects, careful consideration will be given to full utilization of existing facilities and funding opportunities.

Chapter 3 of the plan provides mechanisms for plan implementation. Development tools, such as zoning and subdivision ordinances, are used by the county to implement its strategies for action.

Public Involvement

Comprehensive planning in Muscatine County began in 1998 with the adoption of the first county comprehensive plan.



The current update allows for the review of these prior planning efforts and incorporates either new or enhanced information and/or confirms the appropriateness of the existing data and policies.

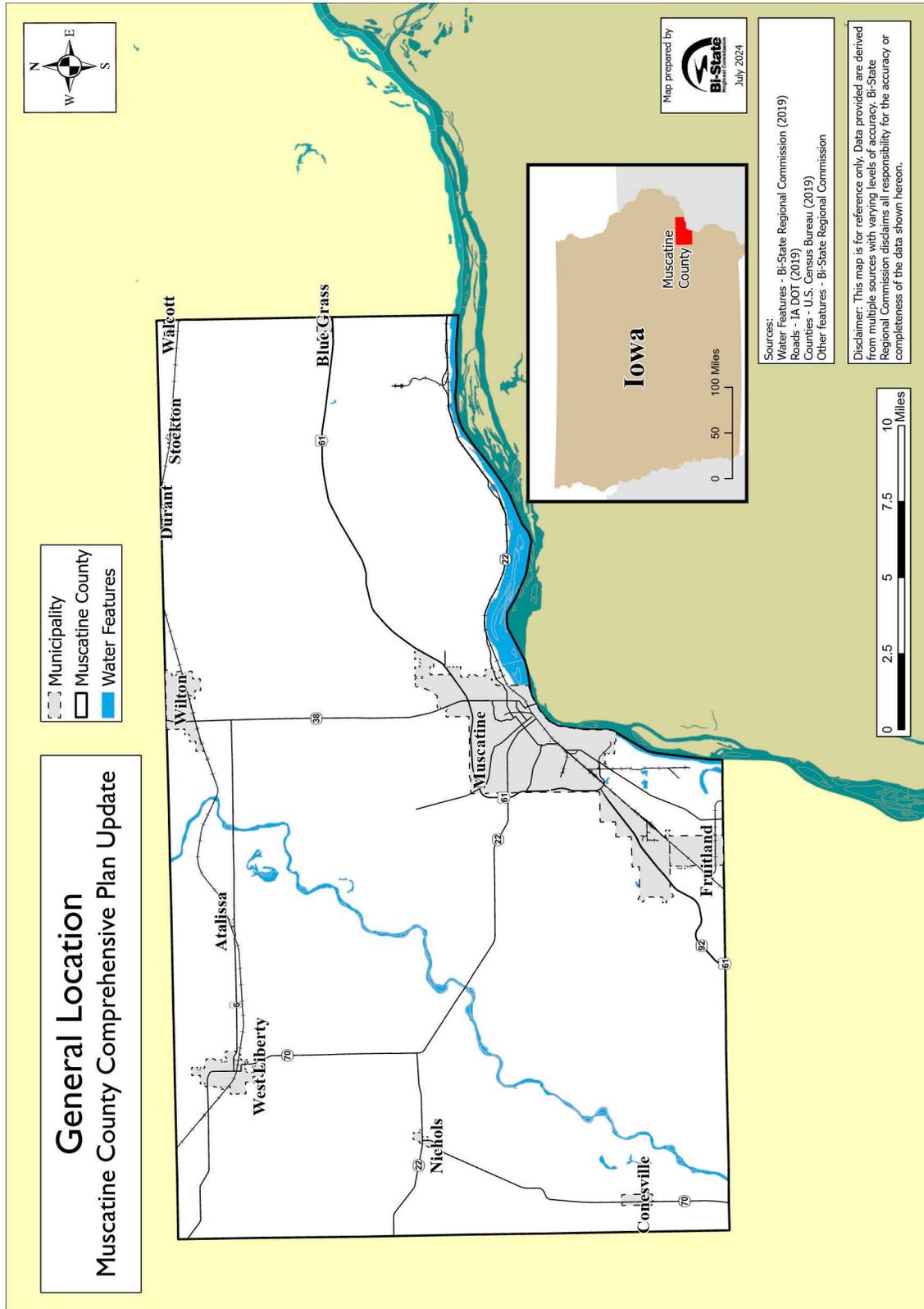
Public involvement is a critical component to building consensus in the planning process. Muscatine County provided three methods for public input into the initial planning process. Town hall type meetings (Muscatine County Visioning and Land Use Workshops) were held on March 21 and May 22, 2024 at two locations in Muscatine County, including Muscatine and West Liberty. Participants were invited to share their opinions on what they liked about Muscatine County and its strengths. They also provided their input on needs for improvement and changes in land use for Muscatine County in the future. A follow-up sheet was made available to participants for additional comments after the meetings. A summary of these meetings and the additional input sheets can be found in Appendix A. Additionally, feedback was solicited on the draft plan from various sectors—business, local government, agriculture, recreation—to further refine

plan elements. Another opportunity for input involved the use of Comprehensive Planning Steering Committee meetings.

The Comprehensive Planning Steering Committee represented diverse interests in Muscatine County, including representatives from agriculture, real estate, small business, homeowners, and environmental interests. The Comprehensive Planning Steering Committee was called on to help formulate and/or review a variety of issues and viewpoints in the development of the plan goals and policies. Each of these public involvement opportunities aided in the development of this plan. The Comprehensive Planning Steering Committee presented a final draft of the comprehensive plan at a public hearing of the Zoning Commission on January 3, 2025 to solicit additional comments and make recommendations to the County Board of Supervisors. County officials used the public comments to shape the final plan. The plan was approved by the Board on February 3, 2025 and formally adopted by Resolution #02-10-25-01 on February 10, 2025.



Map 1.1: General Location Map





Vision, Goals, and Policies

Within Muscatine County, there is strong support for farmland preservation and emphasis for land development to be located within cities. A vision statement has been formulated to capture the opinions Muscatine County residents expressed through the public input process and in working with the Comprehensive Planning Steering Committee.

County Vision

A vision is a clear statement of what a county wants to become.

“Muscatine County embraces its farming and industrial history, natural and cultural resources, and economic livelihood by cultivating progressive leadership and applying well-defined land use policies. Residents value recreational opportunities along the Mississippi and Cedar Rivers, diversity of people and business options, and a quality lifestyle.”

County Goals

Goals articulate this vision by providing the foundation for Muscatine County as it changes over time. The Muscatine County land use goals are:

- **Land Use and Development.** Ensure efficient and managed growth of residential, commercial, industrial, and institutional land uses in Muscatine County for the general welfare of its citizens.

- **Agricultural Preservation.** Protect and conserve contiguous, productive agricultural land in economically-viable units and related resources to the agricultural economy.
- **Environmental Health and Resilience.** Ensure the environmental health and resilience of Muscatine County by a providing safe and healthy living environment for its citizens, both present and future, to withstand and recover from natural and made-made hazards.
- **Facilities, Services and Cooperation.** Encourage cooperation and communication between Muscatine County and other units of local government within its boundaries for efficient and well-managed public facilities and services.

Land Use and Development Policies – Quality Built Environment

The policies identified below establish guidance for future decisions in Muscatine County on management of growth and development, environmental health, services and county facilities, and coordination with other units of government. As the economy and situation in Muscatine County changes, these policies will be reviewed periodically and updated to meet the evolving vision and needs of its citizens.

The county will take these general land use policies and apply more specific criteria as part of the land development



review process. Refer to Chapter 4 on these suggested revisions or clarifications.

General Growth and Development

1. Locate areas designated for growth by encouraging it within municipal boundaries and channeling development in the unincorporated areas to selected areas.
2. Consider the following situations as desired when reviewing developments:
 - Locate on marginal or poor agricultural land
 - Provide adequate access to paved roads
 - Locate near available services, present or planned, including water supply, sanitary sewer, schools and parks, and fire protection
 - Account for sensitivity of the environment, e.g. severe slope, poor soils, floodplain, woodlands, etc.
 - Provide sufficiently buffered area from agriculture and less intensive land uses
 - Support energy and water conservation practices
 - Maintain concentrated tracts of timber, woods, or forest area
3. Recognize rural living as having some degree of agricultural and environmental nuisances, which may be considered incompatible with proposed developments.
4. Ensure sound construction practices and adequate maintenance for quality development and provide for the health, safety, and welfare of citizens within Muscatine County.
5. Encourage preservation and enhancement of Muscatine County's historic and cultural features, including structures, monuments, archaeological sites, festivals, and others of this type, as contributions to growth and development.
6. Encourage developments that promote energy conservation practices or utilize alternatives to carbon-based fuel sources.
7. Encourage developments that incorporate sustainable design principals, which may include:
 - Optimize site potential
 - Protect and conserve water
 - Minimize non-renewable energy consumption and waste
 - Use environmentally preferable products
 - Enhance operational and maintenance practices
 - Create healthy and productive environments



Residential Development

1. Provide for a variety of housing types to serve residential needs of present and future residents.
2. Encourage residential development, particularly multiple family housing – apartments, condominiums, townhouses, and other more intensive housing options – to locate within municipalities or within the 2-mile extraterritorial boundary surrounding a city where public facilities and services are readily available or can be provided or extended.
3. Locate in platted subdivisions that may be located in unincorporated areas within 2 miles of municipal limits where public facilities and services can be provided or extended, or in rural residential corridors designated by the county's future land use map where public facilities and services can be provided or extended if necessary in the future.
4. Require concentrated residential development that could cause water supply or septic problems to create a community water supply and/or sanitary sewer system, and consider the existing source or watershed as part of the design.
5. Review slope and natural resources as part of subdivision and development requests. Minimize situations leading to

slope failure and minimize removal of trees/vegetation.

Commercial Development

1. Encourage commercial development to locate within municipalities where infrastructure needs can be accommodated readily or can be provided or extended.
2. Focus on providing only for neighborhood and/or agricultural business needs.
3. Encourage commercial development serving regional needs to locate along major transportation corridors or at intersections in growth areas identified by the county.
4. Give priority to clustering of commercial uses, rather than strip development, locating commercial uses on along major transportation corridors or at intersections in growth areas identified by the county's future land use map.

Industrial Development

1. Encourage industrial development to locate within municipalities where infrastructure needs can be accommodated readily or can be provided or extended.
2. Steer industrial development to locate where transportation (highway, railroad, water, and air) access is readily available or can be provided or extended if it



is to be located in the unincorporated areas of the county.

3. Favor industrial development that stimulates value-added activities that feed dollars into the local economy and improve the quality of life of Muscatine County residents.
4. Give emphasis to industrial development located in planned, fully-served industrial parks.

Renewable Energy Development

1. Encourage renewable energy development to locate outside the extraterritorial boundary identified by municipalities up to one mile from corporate limits.
2. Steer renewable energy development to locate where transportation and utility network access is readily available or can be provided or extended if it is to be located in the unincorporated areas of the county.
3. Favor renewable energy development that stimulates value-added activities that feed dollars into the local economy and improve the quality of life of Muscatine County residents.
4. Give emphasis to renewable energy development located in planned, fully-served industrial parks and/or limit permanent impacts to prime farmland or large tracts of contiguous farmland.

Environmental Health and Resilience Policies

These policies work to protect and conserve the natural, human, and economic resources that are the basis for the county's physical setting.

Land Development

1. Consider the identification and interpretation of soil resources from the current soil survey when reviewing land use proposals. (Refer to "Soil Survey of Muscatine County, Iowa" prepared by the U.S. Department of Agriculture, Natural Resources Conservation Service.)
2. Limit new development on soil types with severe constraints or over vulnerable geologic areas to protect water supplies and to ensure proper wastewater treatment. The development must also comply with sedimentation and soil erosion control regulations.
3. Discourage development in areas of prime or unique farmland through the use of Muscatine County's Land Evaluation and Site Assessment Evaluation System where such factors as agricultural economic feasibility including suitability for crops and soil/site limitations, land use, environmental effects, governmental burden, compatibility with comprehensive plans, and proximity to services are considered.



4. Ensure stability of the landscape and protect areas characterized by steep slopes from development to prevent erosion. This is particularly important in wooded areas where tree removal may contribute to additional erosion.
 5. Discourage development in areas characterized by forest tracts or strands to ensure quality of conservation areas.
 6. Encourage all new developments be designed to create a minimum disturbance to natural drainage patterns, natural landscape, wildlife and habitat, vegetation, and the ability of the land to absorb rainfall and prevent erosion.
 7. Effort should be given to maintaining the quality of the land environment and the natural beauty of Muscatine County, including vistas.
3. Consider development effects on watersheds where drainage may impact existing and/or proposed development.
 4. Ensure that all new developments address stormwater retention capacity displaced by that development. Whenever possible, retention areas should be set aside for recreational use. Areas characterized by poor drainage should be protected from development to prevent septic system failure, pollution, and degraded groundwater quality.
 5. Emphasize maintaining the quality of the water resources of Muscatine County for water supply, fire protection, recreation, and wildlife.

Effects on Water Resources

1. Limit development in a Special Flood Hazard Area (100-year floodplain). However, it is recognized some development needs require shoreline or waterfront access. In these cases, development shall comply with all federal, state, and local requirements.
2. Protect and conserve both surface water supplies and groundwater supplies for present and future use. The creation of new surface water sources, such as lakes and ponds, is encouraged for drinking water supply, stormwater management, fire protection, and/or recreation.
6. Coordinate with the Lower Cedar River Watershed Management Authority when addressing proposals within that watershed.

County Services and Facilities Policies, and Intergovernmental Cooperation

Although the primary emphasis of this comprehensive plan is to guide how land will be utilized in Muscatine County, there are components of a



comprehensive plan that address other aspects of county facilities and services in addition to land use. The following policies provide a framework for decision-making by Muscatine County officials for these other aspects of county governance. They encourage a suitable living environment and cooperation and communication with other jurisdictions that may provide infrastructure or services to new developments in unincorporated Muscatine County.

Emergency Services

1. Utilize the *Muscatine County Multi-Jurisdictional Hazard Mitigation Plan* and ongoing risk assessments for vulnerable public facilities related to natural and man-made hazards, and plan for reducing these potential unintentional and intentional risks.
2. Emphasize the importance and evaluate regularly the efficiency, reliability, and responsiveness of emergency services including law enforcement, fire protection, ambulance service, and 911 service.
3. Collaborate with emergency service providers to establish standards regarding water supply and availability with which future developments must comply for fire protection.
4. Promote compliance of rural addressing standards for all rural residences to ensure that emergency service providers are

able to locate homes in an efficient manner.

Social Services

1. Evaluate programs to serve community needs of county residents for their health, safety, and general welfare, and routinely evaluate needs to improve the quality of life in Muscatine County.

Waste Disposal Services

1. Adhere to the Iowa Department of Natural Resources solid waste management hierarchy, with preference for waste reduction at the source, and recycling rather than land disposal.
2. Work with public and private entities to encourage efforts toward meeting the State of Iowa goal for fifty percent reduction in waste through a multi-system approach that may include the need for a sanitary landfill for final disposal of waste.
3. Encourage the availability of recycling options throughout the county by public or private means.

Transportation Infrastructure

1. Use short- and long-range transportation planning activities and implementation of the five-year county road program to set priorities to maintain and preserve the existing multi-modal transportation system, including motor vehicle, transit,



rail, air, barge, bicycle, and pedestrian modes.

2. Encourage improvements to the capacity of the transportation system to accommodate existing and future traffic needs.

Parks, Open Space, Conservation Areas, and Recreation

1. Utilize the Conservation Board's strategic plan to guide maintenance and development initiatives for county parks and conservation areas.
2. Improve, enhance, and promote existing and new recreation opportunities, both active and passive, for county residents and visitors. Look at trends for parks and recreation and encourage physical activity.
3. Utilize the county's location on the Mississippi River and the Great River Road as an international tourism attraction in Muscatine County.
4. Work cooperatively with other jurisdictions on issues related to a countywide trail plan.
5. Recognize natural assets of lakes, rivers, wetlands, and forests as opportunities for outdoor recreation both public and private.

Other Facilities/Services

1. Ensure proper maintenance of existing county facilities.

2. Assure that the existing facilities and services are not burdened by new development.
3. Retrofit county facilities with energy conservation technology to realize energy cost savings and reduce air emissions.

Administrative Services

1. Operate county facilities and services in an accountable manner, encourage positive public relations with residents and other organizations, and work to support all four county goals.
2. Maintain and review administrative, management, and personnel capacity for effective support and implementation of county activities.
3. Prepare and maintain an annual budget that implements county operations in a cost-effective manner.
4. Encourage public involvement in county activities and seek ways to involve residents in policy-making and decisions on land use, county facilities, and services.
5. Pursue a variety of revenue sources and/or cooperative arrangements with other agencies/governments to offset expenditures, including but not limited to grants, user and impact fees, tax increment financing, development rights



transfers, joint purchasing, mutual aid or equipment use, etc., and examine ways to reduce costs and increase fund balances for county facilities and services.

6. Maintain communication with local, state, and federal governments in Muscatine County through conversations, meetings, associations, memberships, or other forums that promote cooperation and effective county operations.

Economic Development

Land development and infrastructure play a role in Muscatine's economy. Recognizing this interrelationship and

coordinating public and private land development activity will serve the county and foster investment.

1. Promote a diverse regional economy and quality of life opportunities.
2. Enhance public-private partnerships to address economic development in the region.
3. Ensure appropriate infrastructure to support business retention and expansion.
4. Support programs that invest in the human capital through education, mental health, and training opportunities.



Chapter 2 Implementation

In Muscatine County, there is strong support for farmland preservation and recognition of the value of the county's natural resources and setting on the Mississippi River. There is an emphasis for land development to be located within cities and their extraterritorial planning area of two miles from corporate limits. The Vision Statement, as noted earlier in this document, captures the future view Muscatine County residents reiterated through the public input process. It incorporates what the county is and/or is to become.

“Muscatine County embraces its farming and industrial history, natural and cultural resources, and economic livelihood by cultivating progressive leadership and applying well-defined land use policies. Residents value recreational opportunities along the Mississippi and Cedar Rivers, diversity of people and business options, and a quality lifestyle.”

To achieve the vision, Muscatine County leaders will need to integrate the vision into their decision-making processes. On the following pages are ongoing, short-term and long-term activities necessary for Muscatine County to accomplish these goals and to achieve the shared vision. Short-term activities are anticipated to be achieved within the next five years, while long-term activities will take six or more years to accomplish. It will be up to the

county leaders to decide the order in which to address these goals and activities, and/or revise and refine them as conditions change.

County officials should understand that the strategies set forth in this chapter are progressive in nature. They provide a framework for meeting the county goals. Other tasks and requirements may be required of the county in addition to those listed on the following pages. Any updates to this comprehensive plan should include updates to the strategies for implementation.

Many activities can be done without large investment by the county. Yet other activities may require significant time and funding investment from public and private interests. In the implementation of future projects, careful consideration should be given to the full utilization of existing facilities and funding opportunities.

Land Use and Development – Quality Built Environment

Chapter 2 outlines the land county goals and land use-development policies. The following implementation activities are recommended to either facilitate continuation of orderly and efficient growth and development and/or refine how the goals, policies, and land use policies are interpreted and implemented.



Timeframe	Implementation Activities
Ongoing	Review and reaffirm the comprehensive plan periodically. Revise as needed.
Ongoing	Review land development ordinances – subdivision, zoning, sign, floodplain, water well, wastewater, and nuisances – periodically for consistency with the comprehensive plan and changing development conditions and new practices.
Ongoing	Leverage Geographic Information Systems data and technology available to the county for improved land information analysis and visualization in the land use decision-making process.
Short Term (0-5 years)	Review and update the zoning and subdivision ordinances to address sustainable land development practices and new types of land development and agricultural issues. Determine best practices for land development ordinances, including: definition of farm and farmer; options for rental property management; and incorporation of green building and energy conservation guidance and/or requirements.
Short Term (0-5 years)	Review and update the Land Evaluation Site Assessment Manual and utilize as part of the decision-making process for farmland preservation vs. conversion.
Short Term (0-5 years)	Map undeveloped areas of Muscatine County currently zoned for residential development and identify the type of wastewater treatment systems that would be appropriate based on soil types and geologic/hydrologic vulnerability. Use as a tool for plat review process and individual parcel development.
Short Term (0-5 years)	Investigate options for an easily managed stormwater ordinance or management practices to reduce runoff from high intensity rainfall events.
Short Term (0-5 years)	Review rural living guides and develop a rural living contract to acknowledge that rural living has some degree of nuisances that may be incompatible with neighboring development. Investigate other "good neighbor policies" for applicability to the county.



Timeframe	Implementation Activities
Short Term (0-5 years)	Revise water well and wastewater requirements for the following issues: <ul style="list-style-type: none"> - To review best practices related to development density, sitting soils, geology, and topography. - To require municipal water systems be extended if a subdivision is within ½ miles of water mains. - To require submittal of soil profile and septic drainfield location before building permits for new houses are issued. - To require common wastewater treatment facilities in any subdivisions with greater than 30 lots, when median lot size is less than one acre, allow on site systems in subdivisions with more than 30 lots when 90% or more of the lots are greater than one acre in size.
Short Term (0-5 years)	Establish policy/ordinance on renewable energy development within unincorporated areas of the county that consider prime and state-defined important farmland and forested areas of conservation; and provide a buffer around existing city limits to allow for future growth in areas considered for annexation.
Long Term (6-20 years)	Review and update the comprehensive plan within five to ten-year cycles or coincide with decennial census.
Long Term (6-20 years)	Work with municipalities to maintain close similarity of building and housing codes, including enforcement procedures to streamline the development process among jurisdictions, while acknowledging individual jurisdiction needs.
Long Term (6-20 years)	Work with municipalities on uniformity of zoning ordinances within the county to streamline the development process among jurisdictions.

Environmental Health

These strategies address protecting and conserving the natural, human, and economic resources of Muscatine County. A healthy environment sets the foundation for a quality life.

Timeframe	Implementation Activities
Ongoing	Continue to participate and partner with organizations established to improve the environmental health of Muscatine County, such as the Iowa Department of Natural Resources, Bi-State Region Clean Air Partnership and Air Quality Task Force, Muscatine County Solid Waste Management Agency, Muscatine County Conservation Board, etc.



Timeframe	Implementation Activities
Ongoing	Examine Muscatine County’s development regulations, e.g. zoning, subdivision, floodplain management, other county codes or building code regulations in relation to minimizing effects on the natural environment.
Ongoing	Participate in Lower Cedar River Watershed Management Authority to support water quality, flood mitigation, and conservation goals for the Cedar River watershed.
Short Term (0-5 years)	Identify and create guidance to allow new development to be designed to create a minimum disturbance to natural drainage patterns, natural landscape, habitat vegetation, and the ability to absorb rainfall and prevent erosion. Review need for development of erosion control and stormwater management ordinance and enforcement procedures.
Short Term (0-5 years)	Consider green building principles and energy conservation measures/equipment by the county when initiating new construction or making equipment purchases.
Short Term (0-5 years)	Review and refine risk assessments for vulnerable public facilities related to the natural and man-made hazards. Review the hazard mitigation plan as part of zoning and development considerations. Consider the need for county level evacuation plan.
Short Term (0-5 years)	Create a forest preservation ordinance to help provide guidance on what constitutes forested land in the county. Reference the Iowa Forest Reserve Law.

County Services and Facilities – Citizen Health and Leadership

Key elements of these strategies encourage healthy living and leadership related to county governance. They also encourage collaboration with other jurisdictions that may provide infrastructure, equipment, or services to new developments in unincorporated Muscatine County.

Emergency Services

Timeframe	Implementation Activities
Ongoing	Maintain the hazard mitigation plan and facilitate county-related mitigation strategies.
Ongoing	Consolidate and improve communication capabilities for emergency services providers.



Timeframe	Implementation Activities
Short Term (0-5 years)	Assess current levels of service, needed services and equipment, and sharing opportunities beyond mutual aid for fire and emergency response providers within the county. Determine administrative and capital needs.

Waste Disposal Services

Timeframe	Implementation Activities
Ongoing	Support and facilitate state waste reduction goals.
Short Term (0-5 years)	Continue tire collection and prevention of illegal dumping.
Short Term (0-5 years)	Investigate recycling options for unincorporated areas. Determine possible collaborations with County Facilities.
Long Term (6-20 years)	Work with the Bi-State Regional Comprehensive Solid Waste Management Planning Region on coordinated solid waste management issues – recycling, reuse, illegal dumping, and waste management alternatives.

Transportation Infrastructure

Timeframe	Implementation Activities
Ongoing	Review priorities for roads to be upgraded and the type of road surface needed. Update annually the five-year county road program.
Ongoing	Participate in the Region 9 transportation planning process and support maintaining the existing transportation system and capacity improvements where needed.
Ongoing	Encourage frontage roads and limit direct access along primary roadways.
Ongoing	Direct new development to locate on paved roads or create access to paved roads.
Short Term (0-5 years)	Establish criteria and quantitative standards to determine adequacy of roads to handle additional traffic generated by new development.
Long Term (6-20 years)	Monitor status of roadway funding sources. Seek ways to provide a quality roadway system in Muscatine County.



Parks, Open Space, Conservation Areas and Recreation

Timeframe	Implementation Activities
Ongoing	Continue to partner with and support organizations promoting health through recreation, open space, and conservation practices, as well as those welcoming visitors to Muscatine County, such as the Area Recreation Directors, Convention and Visitors Bureau Mississippi River Parkway Commission in conjunction with the Great River Road, among others.
Ongoing	Implement activities within the Conservation Board Strategic Plan and re-evaluate the plan on a periodic basis.
Ongoing	Examine open space needs, park usage, and opportunities within Muscatine County to enhance facilities. Identify and evaluate passive greenways located along the creeks and rivers in Muscatine County. They are valued for conservation, slope protection and floodplain management.
Short Term (0-5 years)	Participate in issues related to a countywide trail plan.
Long Term (6-20 years)	Partner with municipalities in creating a trail network. Develop linkages for the American Discovery Trail and Mississippi Trail as part of the national trail network. Look for opportunities to create or enhance scenic overlooks of the Mississippi River within Muscatine County.

Other Facilities/Services

Timeframe	Implementation Activities
Ongoing	Monitor technologies related to telecommunications, such as fiber optics and the Iowa Communication Network to improve communications between and within units of government, and attract development and retain businesses.
Short Term (0-5 years)	Retrofit county facilities with energy conservation technologies and/or equipment to realize cost, energy, and air quality benefits.



Administrative Services

Timeframe	Implementation Activities
Ongoing	Prepare and maintain an annual county budget that includes review of staffing needs to address existing and new developments and their administration, enforcement of regulations, and implementation to successfully support the economic livelihood of Muscatine County.
Ongoing	Ensure county buildings are able to provide equitable access to voting locations.
Short Term (0-5 years)	Work with other jurisdictions and agencies in Muscatine County to support and promote a positive image of the county assets, such as the schools' systems; and other anchors, such as a variety of civic groups to attract long-term residents.

Economic Development

Timeframe	Implementation Activities
Ongoing	Participate in economic development organizations within the county, such as Chambers of Commerce and other development organizations.



Chapter 3 Tools for Plan Implementation

The *Muscatine County Comprehensive Plan* contains plans and proposals of what is believed to be necessary to make the county function better and to be a better place to live. On the basis of the plan, thousands of dollars' worth of local, state, and federal funds will likely be spent for transportation and various other county facilities, both public and private. Those facilities have been intended to serve the planned pattern of residential, commercial, and industrial development. The efficiency with which future development is served will depend on the coordinated implementation of all elements of the plan.

Use of the Comprehensive Plan

The analysis and proposals contained in this plan guide present and future decisions. They are to be used by county and city officials, other groups, and private individuals interested in the future development within Muscatine County. The Implementation Strategies section of the plan indicates what actions or activities must be done to implement the plan or to ensure that the plan is followed on a day-to-day basis as decisions concerning land development are made.

If planning is to be effective with the goal of improving the county, the comprehensive plan must be prepared in concert with a zoning ordinance, subdivision regulations, official map, building and housing codes, utility specifications, and a capital

improvements program or other project programming tools. The county's plans and ordinances governing development are interrelated. If the ordinances are varied to allow development to occur differently than proposed, then streets, county facilities, and utilities may not be adequate to meet county needs.

Carrying out the plan is the responsibility of the County Board of Supervisors. An official map can be used to reflect all proposed streets, parks, schools, and other public facilities indicated in the comprehensive plan. The zoning ordinance and subdivision regulations are designed to guide development of land according to the plan. A capital improvements program outlines major county expenditures according to priorities and locations specified by the plan. A building code and utility specifications promote high quality development and guard against deterioration of the residential developments. These development tools are adopted by ordinance and as such become law, whereas the "Comprehensive Plan" and the "Capital Improvements Program" documents are adopted as advisory documents and support decisions related to the ordinances that might be legally challenged. The comprehensive plan should be used as the manual for relating all items pertaining to the development of the county. Awareness that a plan exists is the first step in gaining the broad support, without which any plan is rendered ineffective.



The plan should be reevaluated periodically to maintain a realistic relationship between the plan and current trends of development. Revisions may be required as unforeseen development opportunities occur or more thorough analysis of development issues becomes available.

Coordinated Use of Development Controls

A zoning ordinance, subdivision regulations, storm water and erosion control regulations, official map, building code, and utility specifications are commonly referred to as development controls. The adoption and amendment of these controls is the responsibility of the County Board of Supervisors, which acts after reviewing recommendations from the County Planning Commission. Administration of the regulations is entrusted to an administrative officer.

The importance of administration of development controls cannot be over-emphasized. Even the best regulations are meaningless without strong enforcement. The county and future county residents have much to lose from improper lot layout or substandard construction of structures, streets, or utilities. The best way to avoid such problems is for the County Board of Supervisors to retain a knowledgeable person to coordinate the enforcement of all development controls, and to assign that person sufficient resources to carry out these responsibilities.

Zoning Ordinance

The purpose of a zoning ordinance is to eliminate conflicts between land uses and to prevent over-building on a particular building site. Lot size, building height, building setbacks, parking requirements, and a list of permitted uses are specified in the ordinance for each of a series of internally compatible zoning classifications called districts.

The zoning ordinance, unlike many other ordinances, requires constant attention to its administration. The individual primarily concerned with the day-to-day administration of the zoning ordinance is the zoning administrator.

It is important that the Planning Commission and County Board of Supervisors evaluate requested zoning changes in light of the comprehensive plan. The county's plans for traffic circulation and other services and for regulation of water supply and wastewater disposal have all been based on the comprehensive plan. Any deviation from that plan might lead to septic systems, water supplies, or streets being inappropriately sized or misplaced. Zoning changes not in conformance with the plan will require revisions of the entire plan or an amendment and may result in increased cost to the county due to these land use changes. If the Planning Commission feels a requested change is in the best interest of the community and consistent with the plan, it recommends that the County Board of Supervisors adopt the proposed change.



The County Board of Supervisors, after review of Planning Commission findings and recommendations, then makes decisions on requested zoning revisions. Special zoning regulations are applied to development in a flood plain to reduce flood hazards. Flood plain zoning is a special type of ordinance, or can be a set of provisions that can stand alone or be incorporated into the Zoning Ordinance. The provisions include the designation of floodways for overland flow of floodwaters and for other limited uses that do not conflict with that primary purpose. The regulations also provide that development outside the floodway, but still within the flood plain, must be constructed above a designated elevation.

Since Muscatine County has many watersheds, a flood plain zoning ordinance and its provisions are important to enforce in order to protect property and ensure public safety.

Land Evaluation Site Assessment (LESA)

In conjunction with land conversions from agriculture to other land uses, Muscatine County uses a Land Evaluation Site Assessment (LESA) scoring tool to evaluate the suitability of rezoning agriculture to other uses. The LESA system examines the rezoning of property in conjunction with soils as well as the proximity of the land to public facilities, such as roads, wastewater and water systems, and other municipal services. This discourages spot zoning in productive agricultural areas and encourages

development near or adjacent to existing infrastructure and services. The site assessment portion of the LESA is conducted by Bi-State Regional Commission, and the land evaluation portion is conducted by the Natural Resources Conservation Service (NRCS). Each are provided to the county zoning officer to total these two components and tally a final score. The total score of the LESA determines whether land is recommended to be converted to non-agricultural use.

Subdivision Regulations

A subdivision ordinance typically applies to new growth and specifically applies to land that is being platted or divided into lots. The primary objectives of a subdivision ordinance are threefold. First, the subdivision ordinance clearly outlines the basic standards to be employed in the preparation of the subdivision plat. Second, the design standards for planning the subdivision are provided, so that the general intent and purposes set forth in the *Muscatine County Comprehensive Plan* can be carried out. Third, standards for required public improvements, such as street surface, curb, gutter, sidewalk, sewer, and water are referenced and discussed.

Under the procedures outlined in the subdivision regulations, a developer first submits a sketch plan, then a preliminary plat, and finally a final plat to the Planning Commission and the County Board of Supervisors showing the intentions for the land development.



When reviewing the sketch plan and preliminary plat, the Planning Commission should check the county's official map to determine whether any projects have been proposed in the area intended to be subdivided. If such a project has been proposed, the Planning Commission should inquire whether the responsible agency, such as the County Board of Supervisors, city, or school board is interested in the site or has comments on the development. If the agency is interested in the site, and if the subdivider and the agency can reach a mutually acceptable agreement, the Planning Commission will have been successful in its advisory and coordinating capacity.

Official Map

Planned public improvements may be indicated by ordinance on an official map. The primary objective of the official map is to improve the coordination of planned projects and subdivision growth and to accomplish this on a sound basis. Frequently, a very carefully located site for a proposed storm drainage trunk line or major road site is lost because development proceeds too rapidly for responsible agencies to begin acquisition efforts.

The official map gives the county adequate time for the appropriate governmental agency to acquire the particular site and thereby implement the plan, or to inform the subdivider that the agency is no longer interested in acquiring the site. The fact that such projects are indicated on an official map can restrain the subdivider from developing the proposed project site for

a period of one year (from the time of application for subdivision approval), during which the agency responsible for such a project has the opportunity to commence negotiations or proceedings to acquire the site.

In review of a subdivision, one of the first responsibilities of the Planning Commission is to determine whether any projects indicated on the official map fall in the area of the proposed subdivision. In some cases where an additional right-of-way may be needed for a major street improvement in the future, or where a planned project may be located within a proposed subdivision, the Planning Commission can require the additional right-of-way to be designed in such a manner so as to leave the site available for acquisition by the appropriate agency.

Building Code

A building code establishes good development standards and ensures minimum standards for residential, commercial, and industrial development. A building code is needed to properly regulate building materials and structural conditions. Building codes deal with the structural arrangements of materials, and the codes apply to all new construction in the county.

Utility Specifications

Detailed policies and specifications relating to the design and construction of streets, sanitary sewers, water lines, storm sewers, and sidewalks are needed to supplement subdivision



regulations. These standards should be in the form of specifications uniformly applied throughout the county. The only way residents of Muscatine County can be assured of uniform, high-quality roadway and utility construction is to adopt and enforce standards that are applicable to all development.

Guide to Country Living

The Guide to Country Living is an informational outline to educate new and potential residents on potential considerations related to living in a rural area. It addresses access, utility services, property considerations, natural hazards, agriculture, wildlife, and natural resources. The guide is intended to help convey the advantages and disadvantage of rural living, so informed property decisions are made.

Programming of Capital Improvements

While development controls are effective in guiding private development, they do not provide for construction of public facilities indicated in the plan. An important means of guiding future development of public facilities is a capital improvements program. A capital improvements program is a suggested schedule for construction of public improvements and the financing of proposed projects. Capital improvements programming carries the comprehensive plan projects toward the construction of public facilities proposed by the plan. The program is a tool for translating long-term objectives

and plans into implementation, whether they are roads, public safety buildings, parks, libraries, schools, or other public facilities.

A capital improvement program, when used by county officials, assures that attention is being given to the community's needs and that logical steps will be taken to satisfy these needs. Some of the advantages of capital improvements programming include: stabilization of the tax rate over a period of years, provision of adequate time for planning and engineering of improvements, assurance that projects will be carried out in accordance with predetermined needs and the community's ability to pay, and coordination among all agencies having responsibility for public facility construction.

For the capital improvements program to be effective, it must be updated annually. This should occur prior to the consideration of the county's annual budget, so that information contained in the program can be utilized in making decisions on items proposed for inclusion in the budget. Annual updating will assure greater accuracy and will also allow a continuous schedule of public improvements. As projects listed in the capital improvements program approach a construction date, the County Board of Supervisors should initiate detailed planning and feasibility studies. In order to promote the construction of public facilities in a manner that best serves the needs of the people of Muscatine County, it is strongly recommended that the County Board of Supervisors, with



the assistance of the Planning Commission, establish procedures for continuing the Capital Improvements Program in future years.

Cooperation and Assistance of Other Governmental Agencies

A number of agencies must cooperate in order to implement the *Muscatine County Comprehensive Plan*. The county, school districts, fire districts, drainage districts, municipalities, adjacent counties, and state and federal officials should be aware of the

interdependency of each jurisdiction of government and the benefits that cooperation holds for all area residents.

The county should pursue plan implementation assistance is available from various governmental agencies. Federal financial assistance is available for roads, park development, and public safety among other programs. Monies available under such programs will vary over time, and the responsible agency should be contacted for specific project eligibility.



Chapter 4 Land Use

Land use, in very basic terms, defines where people live and where they work. It describes how and why the land is being used for a particular purpose. Examples include agricultural land used for farming or farmsteads, residential land used for homes, industrial land used for manufacturing of products, or land used for operation of intensive resource recovery. Existing land uses are those in place at the time the information was recorded or surveyed. Future land use addresses land to be conserved for farming operations or to be developed as defined through the planning process within the planning period. Muscatine County's planning horizon is 20 years. This chapter outlines both existing and future land use for Muscatine County.

The land use chapter of a comprehensive plan provides the framework and statement of land use policy. The future land use mapped in this chapter provides guidance to local officials on the quality and character of land preservation and development that

will likely take place in the next 20 years.

Existing Uses

Existing land uses of Muscatine County are illustrated on Map 4.1. The existing land use was developed from the Muscatine County parcel data and represents approximate land uses in the county. Percentage of land use in each category can be found in Table 4.1. It represents a generalized view of existing land use in the county. Current land use is organized into several categories, including agriculture, residential, commercial, industrial, and exempt utilities (institutional, recreational, etc.). The county encompasses 287,511 acres or nearly 450 square miles of land area. The county is divided into 14 townships and includes 8 municipalities. Most residential development has occurred within cities or along the Mississippi River, such as the unincorporated places of Fairport and Montpelier, or in other areas, such as Sweetland Center.



**Table 4.1 – Existing Land Use
Unincorporated Muscatine County, Iowa**

Land Use Mapping Classification	Acres	Square Miles	Percent
Residential	16,011	25.02	5.73%
Commercial	6,320	9.88	2.26%
Industrial	2,759	4.31	0.99%
Parks & Recreation	248	0.39	0.09%
Agricultural (Land/Dwelling), Water, and Not Classified	254,342	397.41	90.94%
Incorporated Places*	16,699	26.09	5.97%
Total	296,379	437.00	100.00%

Source: Bi-State Regional Commission, approximate numbers

* Incorporated Places includes a variety of land uses including those noted as residential commercial and industrial, etc. and not represented in the unincorporated totals of these land use types.

Agricultural, Water, and Not Classified

In Table 4.1, the following combined land uses were identified as agricultural land use, and areas otherwise not classified including vacant property, farmsteads, roadways, mining, utilities or rights-of-way, and undeveloped or farmed land. These types of land use are typically represented beyond the perimeter of a community in areas either to be farmed or to be developed as part of municipal planning areas or part of easements or rights-of-way where infrastructure or utilities are located. Within the unincorporated areas of Muscatine County, these classifications account for 254,342 acres or about 91% of the land area. Adjacent to corporate limits, agricultural land areas may offer potential growth through community annexations. Additionally, these areas may represent locations considered difficult to develop because of floodplain, high water table, or steep slopes, or may be areas ideal for farming. Map 4.1 illustrates land

areas that are prime for farming and/or have some physical limitations for intensive development.

Industrial

Industrial land uses comprise less than 1% of Muscatine County’s unincorporated existing land use, covering 2,759 acres.

Commercial

Commercial land use is categorized by wholesale/retail sales and office land use that relates to professional services and business activities. These areas are located sparingly in the county. Commercial land use in unincorporated Muscatine County comprises 6,320 acres or just over 2% of the total land use.

Residential

Residential development represents just under 6% of the existing land use within unincorporated Muscatine County. Residential land use in unincorporated Muscatine County



accounts for 16,011 acres of the land. Residential development has occurred either within corporate limits, or primarily in unincorporated areas along the Mississippi River, such as Fairport and Montpelier. Muscatine County had approximately 17,075 occupied housing units (ACS 2018-22) for both incorporated and unincorporated areas. The majority (around 60%) of the residential development within Muscatine County is characterized by homes built from 1979 or earlier. Over 7,100 housing structures were built in 1959 or earlier.

Parks and Recreation

Institutional uses, parks, recreational areas, open spaces, and other exempt classified land occupy 248 acres and less than 0.1% of the county's land area. Muscatine County is bisected by the Cedar River and bordered by the Mississippi River. Both rivers are subject to annual flooding. Both waterways are excellent outdoor recreation assets. With its natural setting along these two rivers and with Mississippi River bluffs, Muscatine County is ideal for outdoor recreation activities, such as fishing, boating, camping, hiking, and bicycling. The county's parks and recreational amenities are more fully described in Chapter 8. Additionally, this category includes government buildings, schools, churches, cemeteries, and health services.

Proposed Future Uses

Cultivating or refining several essential anchors that encourage or attract people to move to or remain in

Muscatine County, as a whole, will be important for growth and development. These important indicators provide stability over time. Successful ways to encourage long-term county residency are:

- Retain and encourage small, locally-owned businesses to locate in the county
- Encourage home ownership and provide a variety of housing options, preferably in cities
- Provide a quality school system
- Foster local clubs/associations that promote civic involvement

Each of these factors reinforces civic engagement and personal investment in the community where people call home. (*Source: "How To Build Strong Home Towns," American Demographics, February 1997*) More than 25 years later, building strong towns has shifted to finding a place where citizens are passionate about, but still aligned with, the key anchors noted in 1997. A town or community needs citizen interest and motivation, and to tell the community's compelling story. It is getting to know your neighbors through civic involvement, and picking a project to focus on implementing. This includes developing community connections in the unincorporated areas. (Source: <https://www.strongtowns.org/journal/2017/9/7/6-ways-to-start-building-strong-towns> September 2017)

Other anchoring principles relate to financial solvency, transportation as a



means not an end, a healthy economy requiring cultivation, the need for caring citizens, and local government as the platform for collaboration. To embrace these anchors or strong hometown principles, it will be important to examine county strengths and the existing county profile as outlined in this plan, as well as future trends, to see where these assets can come together. Then using this information, a community can seek to attract new residents, visitors, and jobs.

From the public input workshops, residents identified a number of these factors as being strengths of Muscatine County and others, such as:

- Proximity to Mississippi and Cedar Rivers
- Many natural recreation areas
- Cultural diversity of the citizens
- Number of industries in the county
- Good mix of city and country living

In shaping the future of Muscatine County, community leaders will be required to visualize the next generation of residents within the county and what they value. Such amenities could include new or enhanced countywide recreation areas, revitalized downtowns populated by entrepreneurs and vibrant businesses, and a productive agricultural economy with value-added businesses. These suggestions focus on the quality of life that a county has to offer.

Muscatine County offers assets that may help attract young talent and future generations to move to the county, including its proximity to the Quad Cities Metropolitan Area and Iowa City with the University of Iowa, along with its interstate access, natural settings, parks, access to arts/entertainment, relatively short commute times, and a variety of restaurants and shopping.

In contrast to more city-centered lifestyles, rural living has special circumstances that should be recognized and understood. The county's "Guide to Country Living" outlines important considerations in living outside of corporate limits in rural parts of Muscatine County. Considerations include more responsibility for the property owner to provide essential infrastructure, such as water and sanitary sewage disposal, and waste disposal services. Power and communication sources may be limited, e.g. propane tanks in lieu of piped natural gas. Roadway access is more limited, and emergency response times are greater with rural living. Agricultural activity can be intensive, similar to industry, with heavy machinery, seasonal peaks with long hours of operation, creation of dust and odor, among other neighboring effects. The guide offers an overview, so prospective residents in rural unincorporated areas are knowledgeable and have realistic expectations for their development.

Using the input from the public input workshops, and meetings of the Comprehensive Planning Steering Committee, proposed land uses have



been reviewed and updated for Muscatine County for the next 20 years. Preserving farmland for future production continues to be a priority of

the county, as well as preserving the natural resources that attract visitors and future residents.

**Table 4.2 – Proposed Future Land Use
Unincorporated Muscatine County, Iowa**

Land Use Mapping Classification	Acres	Square Miles	Percent
Residential	11,103	17.35	3.97%
Commercial	1,281	2	0.46%
Industrial	9,016	14.09	3.22%
Parks, Recreation, and Conservation	38,869	60.74	13.90%
Agricultural (Land/Dwelling), Water, and Not Classified	202,707	316.73	72.48%
Incorporated Places	16,699	26.09	5.97%
Total	279,675	437.00	100.00%

Source: Bi-State Regional Commission, approximate numbers

* Incorporated Places includes a variety of land uses including those noted as residential commercial and industrial, etc. and not represented in the unincorporated totals of these land use types.

Percentage of land use in each category can be found in Table 4.2. The large difference between exempt numbers in future land use versus current land use is due to a difference in the classification system used. Map 4.2 illustrates future land uses within Muscatine County. The intent of the mapping exercise was to provide sufficient guidance and direction for land-use decisions on location and service areas to the Planning and Zoning Commission and the Board of Supervisors. The land use identification will provide enough general direction to allow sufficient flexibility in the market location choice, to ensure that certain areas are reserved for preferred uses, to mitigate land use conflicts, and to implement an economic growth strategy focused on creating a sustainable county. In keeping with

policies set forth in Chapter 2, new non-agricultural development is encouraged to be located within city boundaries. Chapter 2 provides the policy directives associated with land use decision-making in Muscatine County and should be used in concert with the future land use map.

The future land use map identifies both how the land is used today and areas where land use changes may be approved to allow for a specific purpose(s) in the future. The map clearly shows that the majority of unincorporated Muscatine County is and will continue to be used for agricultural production. Map 4.2 clearly reiterates the county vision to preserve and protect its agricultural and natural resources and operations. Additional land uses identified on the map are commercial, industrial, and residential.



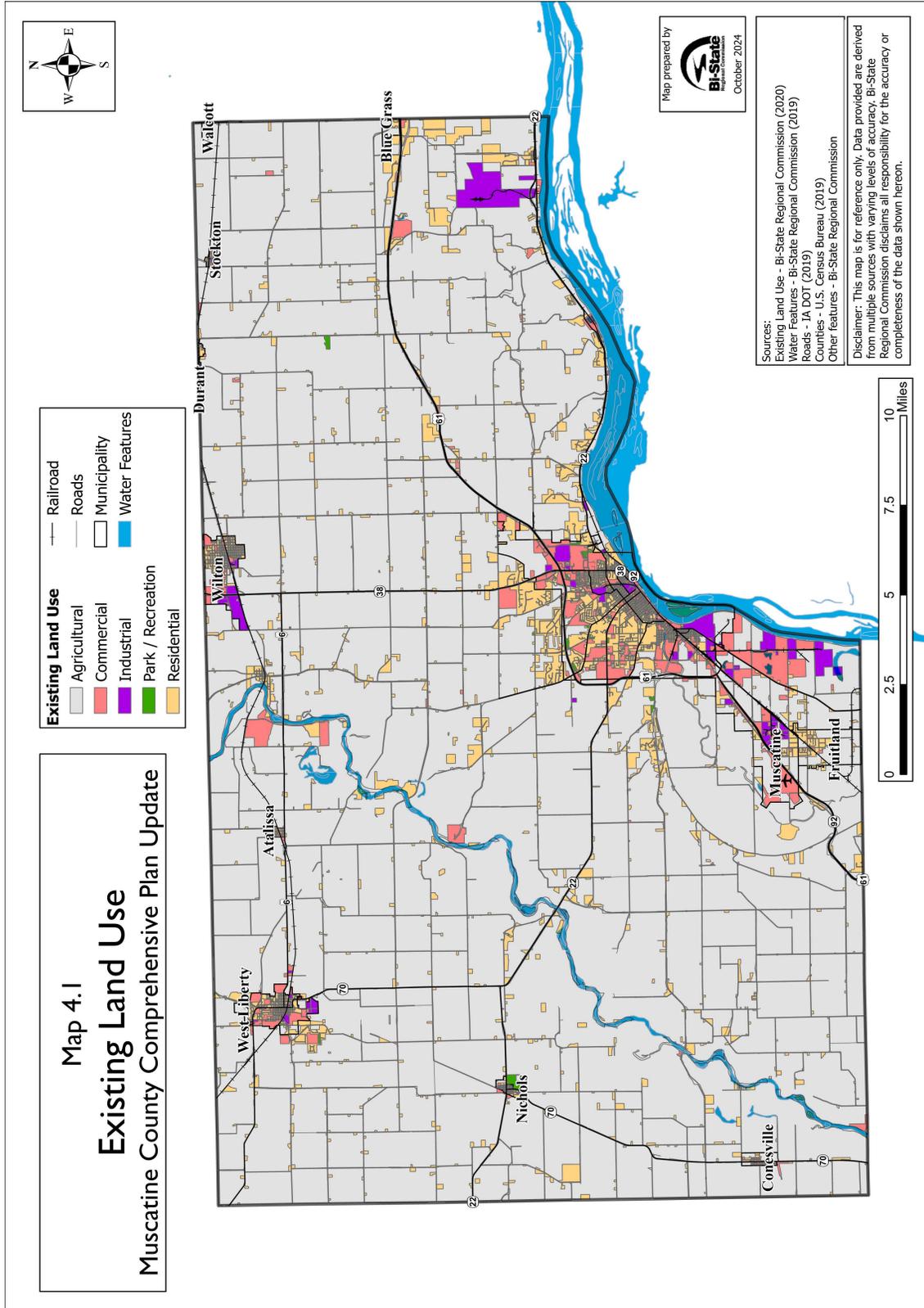
Commercial development is expected to be small service centers serving the rural community. Sensitivity to development of woodlands and along steep slopes is encouraged. Both the steering committee and public input sessions stressed the importance that prospective developments occur along major paved highways. Proper installation of water wells and septic systems will ensure quality residential development and require development permits and inspections coordinated with the county.

Map 4.2 also shows a 1- and 2-mile radius around municipalities in the county. The State of Iowa legislature code allows for city zoning and subdivision laws to extend up to 2 miles outside of the city limits. During the steering committee meeting, there was much discussion about including both boundary lines. Developments are being encouraged along established corridors and close to established utilities. Residential developments under consideration in unincorporated areas would be encouraged to coordinate with municipalities and be

established within the 2-mile boundary, preferably within the 1-mile boundary. This provides the developments access to paved roads and a higher possibility of connecting to utilities from the adjacent municipality by extensions to the new development. Another prominent topic of discussion was county developments of renewable resources, such as wind and solar. These land uses support more overall substantial development; however, the steering committee was concerned that municipalities might be boxed in by these land uses if they are allowed without consideration of a city's desired future growth areas. To avoid this situation, the steering committee was in favor of making sure that energy development approved by the county would be outside the 1-mile boundary extraterritorial limits of a city. Discussions of any developments, regardless of its land use, occurring within the 2-mile boundary should include the affected municipality. This ensures that cities have room to expand as needed, and are not boxed in by these potential developments.

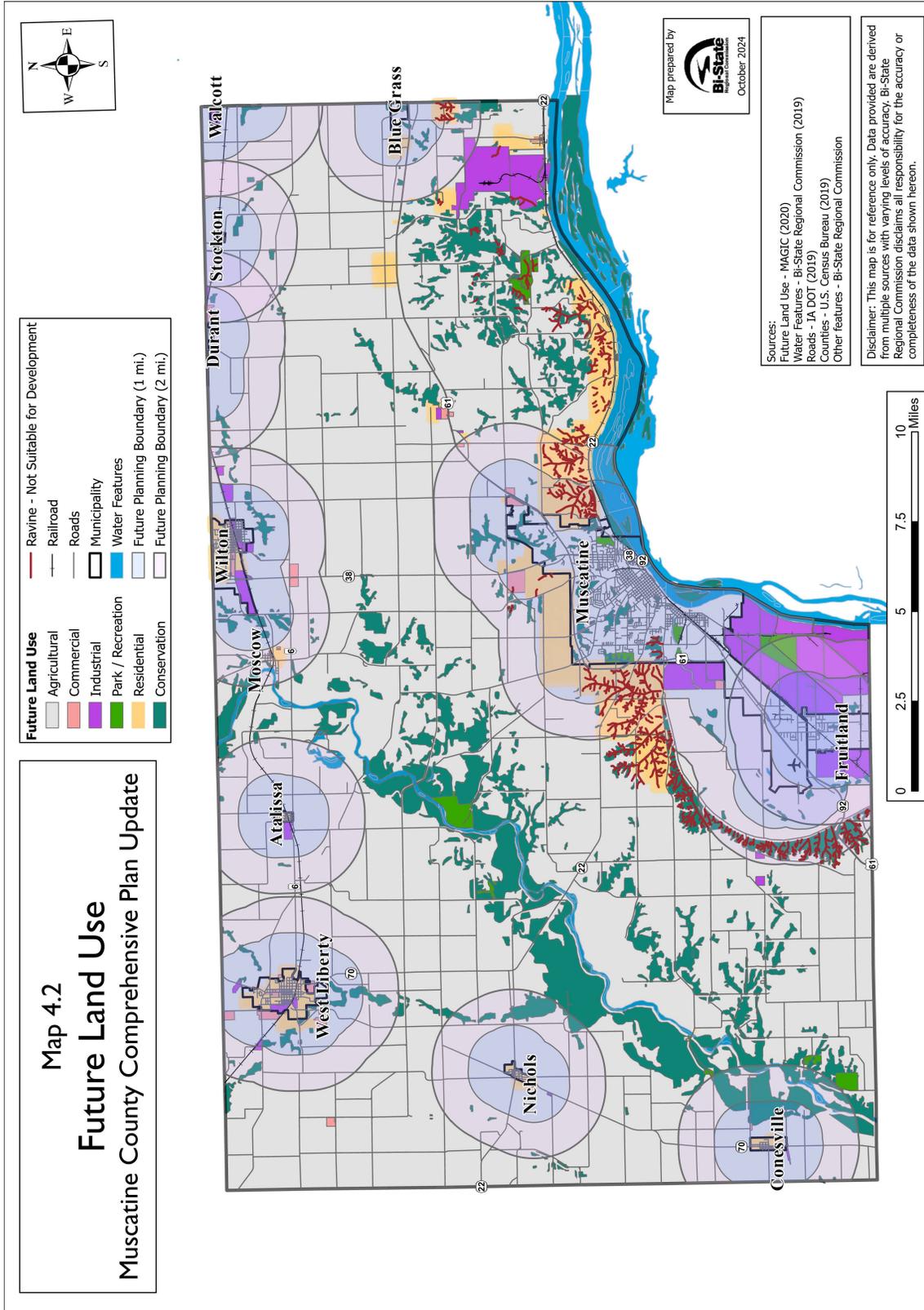


Map 4.1: Existing Land Use





Map 4.2: Future Land Use





Chapter 5 County Profile

The information in this chapter will help Muscatine County plan for the short-term and long-term needs of its residents. This chapter includes information on population, gender, race, ancestry, age, employment, income, education, and housing. Historical data is included to show Muscatine County's progression as well as some comparisons. Much of the data from this chapter comes from the U.S. Census Bureau, American Community Survey (ACS). All ACS data are survey *estimates*, and other sources utilized are noted. Detailed profiles for Muscatine County are found at the end of this chapter and provide a large amount of data.

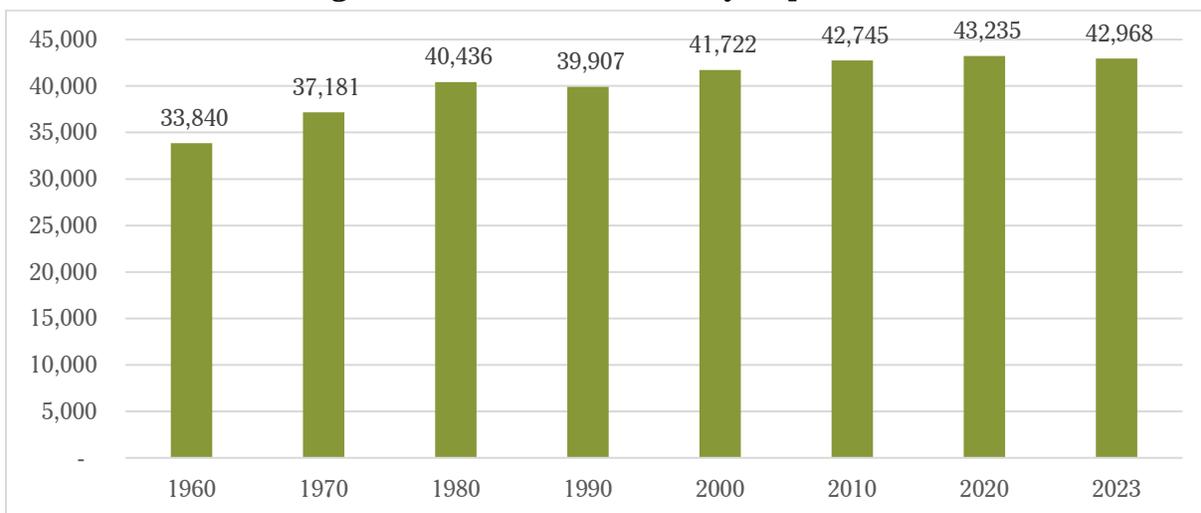
Beyond simply counting the population, demographic data can provide a way for municipal officials, planners, and

others to identify and analyze detailed demographic characteristics of a population. Quantifying the gender, age, race, and ancestry of a community can help one understand the current and future needs of that community and provide insight into the cultural background of its residents.

Population and Households

In 2023, Muscatine County's population was 42,968. Historically, the county grew rapidly between 1960 to 1980. There was a decrease in population between 1980 to 1990, but since then, the county has recovered and continued to show growth at each Census, albeit with smaller growth rates. Figure 5.1 shows the detailed population history.

Figure 5.1: Muscatine County Population



Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).



Muscatine County contains 11 cities, four of which are located on the border of the county, and four are Census defined places (CDPs) that range in population from 176 to just under 24,000 residents. The largest municipality in Muscatine County is the city of Muscatine, which accounts for approximately 55% of the county’s total population.

Table 5.1 shows the comparison of all municipalities and CDPs in Muscatine County. Cities labeled with (partial) are located on the borders of the county. It should be noted that the four CDPs were not recognized prior to the 2020 census, which is why they do not have a population listed for the previous two data records.

Table 5.1: Municipal & CDP populations within Muscatine County

	2000	2010	2020	2023
Muscatine County	41,722	42,745	43,235	42,968
Atalissa	290	311	296	355
Blue Grass (partial)	1,158	1,452	1,666	1,873
Conesville	432	432	352	467
Durant (partial)	1,669	1,832	1,871	1,902
Fruitland	723	977	963	1,127
Muscatine	22,518	22,886	23,797	23,671
Nichols	354	374	340	344
Stockton	174	197	176	148
Walcott (partial)	1,528	1,629	1,551	1,854
West Liberty	3,330	3,736	3,858	3,821
Wilton (partial)	2,856	2,802	2,924	2,939
Fairport (CDP)	-	-	204	228
Kent Estates (CDP)	-	-	2,074	2,044
Montpelier (CDP)	-	-	186	172
Moscow (CDP)	-	-	290	274
Total Incorporated	35,032	36,628	40,548	41,219
Total Unincorporated	6,690	6,117	2,687	1,749
Percent Unincorporated	16.03%	14.31%	6.21%	4.07%

Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).

In the 2023 (2018-2022 ACS), there were 17,075 households in Muscatine County. Family households accounted for around 11,460 (67%) of that, with 5,106 (45%) of the family households having children under 18. Comparatively, Iowa has 62% of households being family households, with 43% of those family households having children under 18.

Population Projections

Utilizing projections can help plan for the future needs of the county. Many variables have the potential to affect the future growth and development of an area. Woods & Poole Economics, Inc. uses a regional approach to forecast projection data. This means that the projections are done simultaneously for



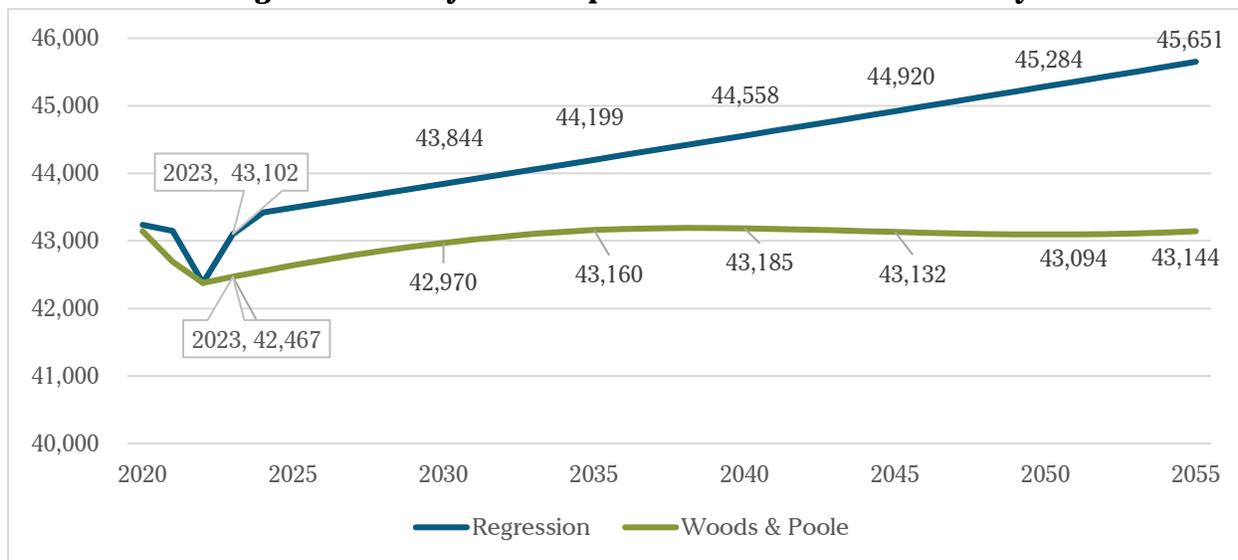
the U.S., so that changes in one county will affect the growth/decline of another. This is done to more accurately reflect the economic effects of migrating persons. According to Woods & Poole Economics, Muscatine County’s population is expected to remain relatively consistent around 43,100 through 2055, with an average change rate of less than 1%.

Another method used to model future population growth uses historical trends to create a regression analysis. A projection scenario was modeled using data taken from past Decennial censuses and the most recent ACS estimates. The analysis assumes that population will follow trends similar to the population patterns from 1990 to

2022, barring any extraordinary events like the COVID-19 pandemic. Using this data, the regression scenario anticipates that Muscatine County’s population will continue to grow from 43,235 in 2023 to 45,651 in 2055.

Many factors shape a community's future. Muscatine County will most likely see population change that is somewhere between the Woods & Poole projections and the regression estimates. Comprehensive planning will help guide continued development in order to fulfill the county’s goals for land use, economic development, and natural resource preservation. Figure 5.2 shows the populations projection scenarios for Muscatine County through 2055.

Figure 5.2: Projected Population of Muscatine County



Source: Woods & Poole Economics, Inc. (2023); Regression Analysis of U.S. Census Bureau data (1960-2023)

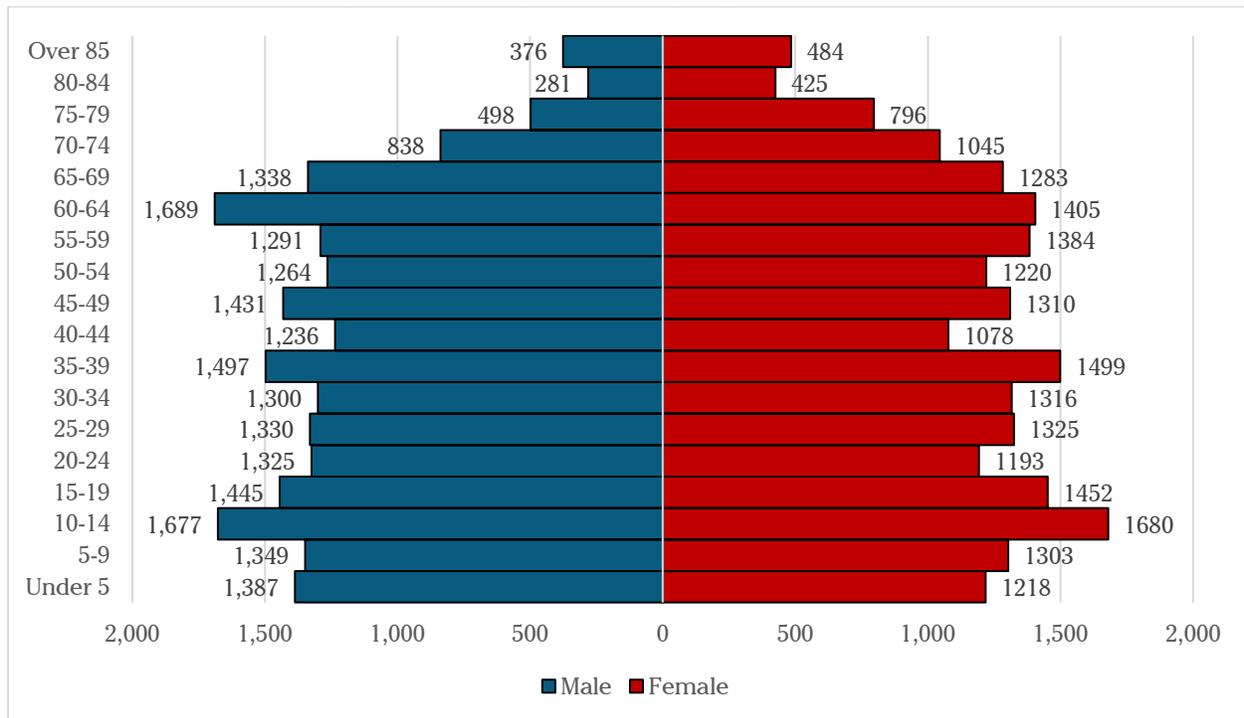


Age & Gender

Muscatine County’s population has a nearly equal distribution of males and females. As of 2023 ACS estimates, the county was 50.2% males (21,552) and 49.8% females (21,416). This follows the State of Iowa as a whole, as its distribution is 50.1% males and 49.9% females. The median age is a statistic that can be used to gauge the overall age of the population. The higher the median age, the older a population, and conversely the lower the median age, the younger the population. The median age for the county is 38.6, which is slightly higher from the 38.2

median age found in the 2020 census and the 38.0 median age in the 2010 census. Again, these follow state-wide trends, with the 2023 ACS estimate for median age in Iowa being 38.4, slightly higher than the median ages reported for the 2020 census (38.3) and 2010 census (38.0). The largest age groups in Muscatine County for females are the 10-14 range (7.84%) and 35-39 (7.00%). The largest age groups for males are 60-64 (7.84%) and 10-14 (7.78%). Overall, more than half of the population is younger than 50 years of age for both females (62.45%) and males (64.85%). Figure 5.3 demonstrates the age and gender breakdown of the county in more detail.

Figure 5.3: Population by Age Distribution



Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).



Race & Hispanic or Latino Ethnicity

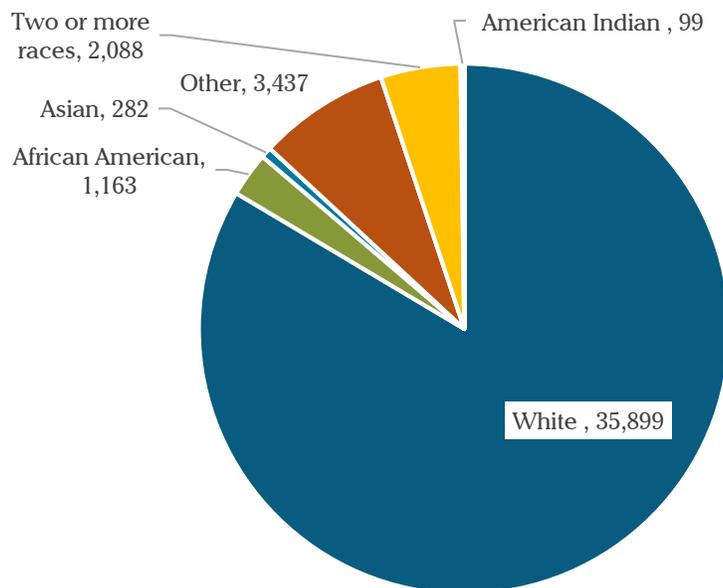
The Census Bureau tabulates race data into the following general categories:

- White alone
- Black or African American
- American Indian or Alaska Native alone
- Asian alone
- Native Hawaiian or other
- Pacific Islander alone
- Two or more races
- Some other Race

Figure 5.4 shows the ACS 5-year estimates for Muscatine County. Almost 84% of county residents identify as “White” only. The two next highest categories are “some other race” at 8% and “two or more races” at just below 5%. In Iowa as a whole, “White” is also the largest group, with almost 87% of the responses. The next highest is “two or more races” with just under 5%, and

the third most populous demographic is “African-American,” with around 4% of the responses. The census also asks if residents identify as Hispanic or Latino. Muscatine County has around 8,000 residents (around 18.5%) that identified as Hispanic or Latino. This is much higher than Iowa at large, where only about 6.5% of the total state identified as Hispanic or Latino.

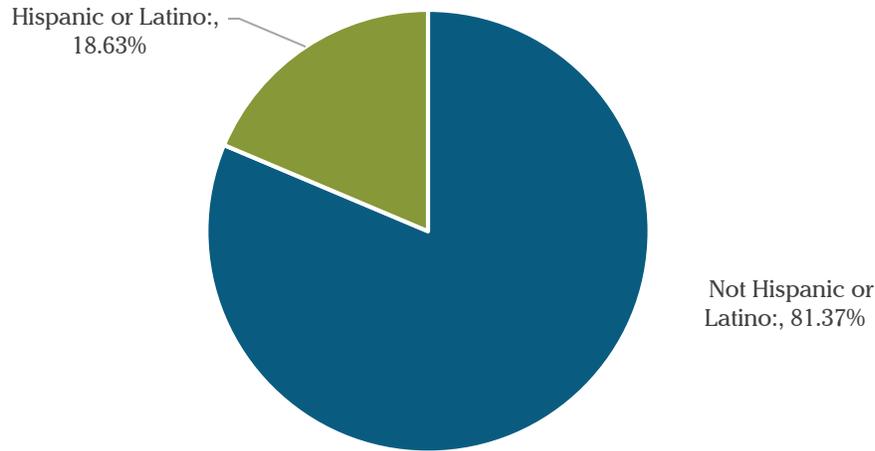
Figure 5.4: Muscatine County Population by Race



Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).



Figure 5.5: Muscatine County Population self-identifying as Hispanic or Latino vs Not



Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).

Ancestry

The U.S. Census Bureau records ancestry in the American Community Survey. Persons can choose from numerous ancestries and may pick more than one. A person’s race or ethnic status has no bearing on the ancestries they may choose.

The most common identified ancestry in Muscatine County as of the 2023 ACS

estimates was German (24.4%), followed by Irish (9.1%), and English (7.4%). This matches with Iowa’s most commonly identified ancestries, those being German (30%), Irish (12%), and English (10%). Table 5.2 shows all reported ancestries in Muscatine County. There are an estimated 16,663 citizens in Muscatine County who declined to share their ancestry

Table 5.2: Ancestry within Muscatine County

Ancestry	Estimate	Ancestry	Estimate
German	10,471	Scotch-Irish	317
Irish	3,912	Danish	280
English	3,200	Welsh	242
American	2,065	Swiss	115
Norwegian	869	French Canadian	107
Polish	717	West Indian (except Hispanic groups)	99
Swedish	640	Arab	77



Ancestry	Estimate
Scottish	560
French (except Basque)	545
Dutch	535
Sub-Saharan African	534
Czech	413
Italian	370

Ancestry	Estimate
Hungarian	73
Greek	69
Ukrainian	42
Portuguese	33
Lithuanian	14
Russian	6

Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).

Limited English Proficiency

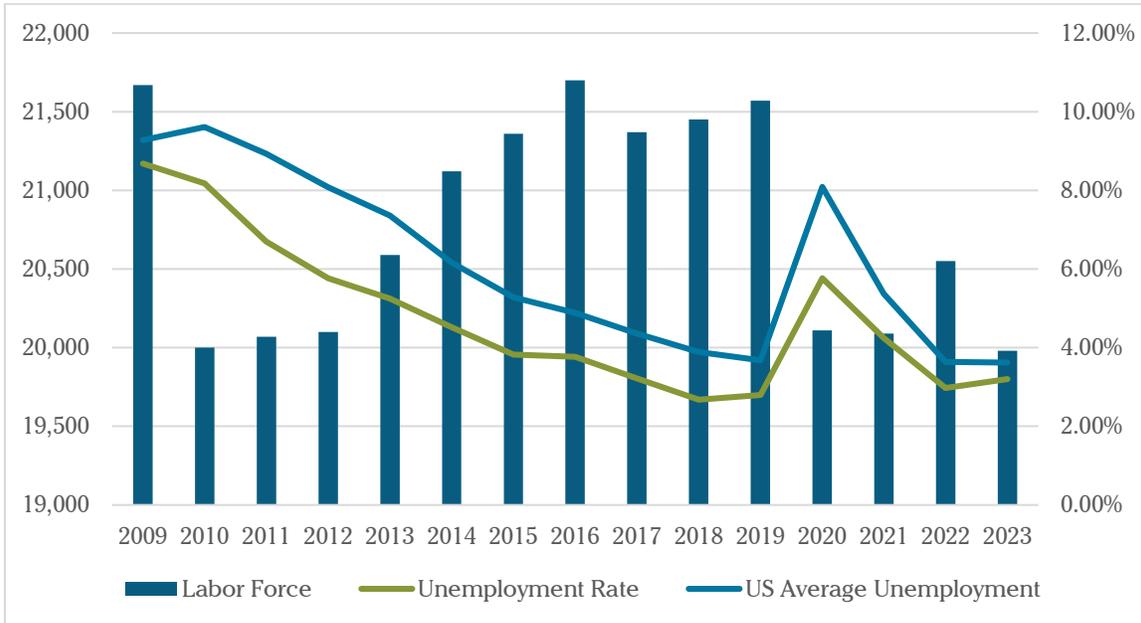
Language spoken at home and the ability to speak and understand English "very well" tells a lot about a community. It is important for communities to know if residents may need extra assistance understanding English. In Muscatine County for the population over 5 years old, 84.9% of the population speaks English only, and 15.1% speak a language other than English. Of those residents who speak a language other than English, 4.4% speak English "less than very well." The most commonly spoken other language in Muscatine County is Spanish. Comparatively, of the Iowa residents who speak a language other than English, 3.6% speak English "less than very well."

Labor Force and Employment

According to the Iowa Workforce Development, the total labor force in Muscatine County in 2022 was 20,550. This number is an increase from the 2021 reported labor force of 20,090, but has not recovered to pre-pandemic levels, which were reported at 21,570 in 2019. Muscatine County's unemployment rates have followed national trends, with the lowest unemployment rate of 2.68% coming in 2018, and the highest rate of 8.68% coming in 2009. As of 2022, the unemployment rate was 2.97%, lower than the national average of 3.64%. Figure 5.6 shows the annual average unemployment rates in more detail.



Figure 5.6: Muscatine County Labor Force and Unemployment Rate vs U.S. national Average



Source: Iowa Workforce Development, November 2023

The most common industry sectors in Muscatine County noted in the 2023 ACS data is manufacturing, employing an estimated 31.3% of the labor force. The next two most common sectors are educational services and health care and social assistance (21.4%) and retail trade (9.0%). An industry sector is any grouping of private, non-profit, or government establishments that have some type of commonality.

Table 5.3: Employment Industries within Muscatine County

Civilian employed population 16 years and over	Estimate	Percent
Agriculture, forestry, fishing and hunting, and mining	577	2.7%
Construction	1,101	5.2%
Manufacturing	6,655	31.3%
Wholesale trade	543	2.6%
Retail trade	1,916	9.0%
Transportation and warehousing, and utilities	1,284	6.0%
Information	185	0.9%
Finance and insurance, and real estate and rental and leasing	621	2.9%
Professional, scientific, and management, and administrative and waste management services	1,143	5.4%
Educational services and health care and social assistance	4,557	21.4%
Arts, entertainment, and recreation, and accommodation and food services	1,180	5.5%
Other services, except public administration	914	4.3%

Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).



Relatedly, the top employers in Muscatine County are West Liberty Foods LLC (Food Manufacturing), Grain Processing Corp (Food Manufacturing), and Hy-Vee (Retail).

Table 5.4: Largest Private Employers within Muscatine County

Company	Product/Service	Employees
West Liberty Foods LLC (All locations)	Food Processing	4201
Grain Processing Corp	Food Processing	700
Hy-Vee	Grocery Store	450
SSAB	Steel Processing	400
Bayer Cropscience	Agricultural Chemicals (Whls)	365
MPW	Utilities	301
Bridgestone Bandage	Tire-Retreading/Repair-Eqpt/Supls (Whls)	300
Musco Sports Lighting LLC	Lighting Equipment NEC (Mfrs)	300
Stanley Consultants Inc	Engineers-Consulting	300
Unitypoint Health-Trinity	Hospitals	262
Stanley Group Co	Engineers-Consulting	239

Source: InfoGroup, ReferenceUSA Gov, accessed 2023; individual businesses and organizations.

Note: Major employer data provided are derived from multiple sources with varying levels of accuracy.

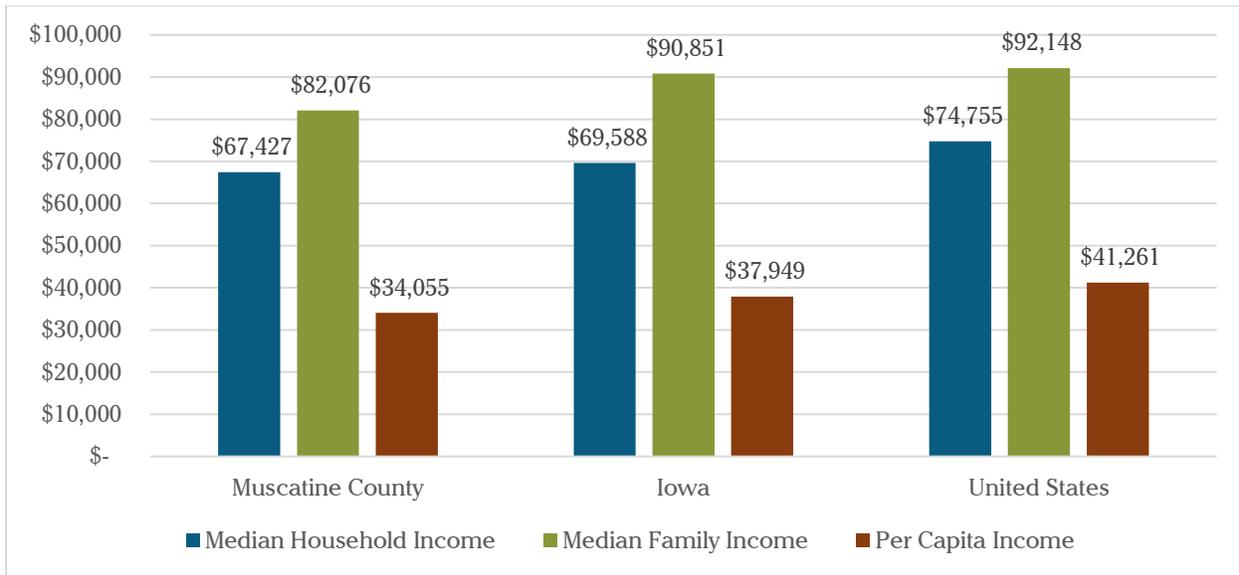
Bi-State Regional Commission disclaims all responsibility for the accuracy of the data shown herein.

Income

Median household income is a standard measure of prosperity of a community. In the 2023 ACS data, Muscatine County’s median household income was \$67,427, the median family income was \$82,076, and the per capita income was \$34,055. Muscatine County’s median income is slightly lower than the Iowa median income. Both Iowa and Muscatine County are much lower than U.S. averages. Figure 5.7 shows the income data in more detail.



Figure 5.7: Incomes for Muscatine County, Iowa, and U.S. National Average

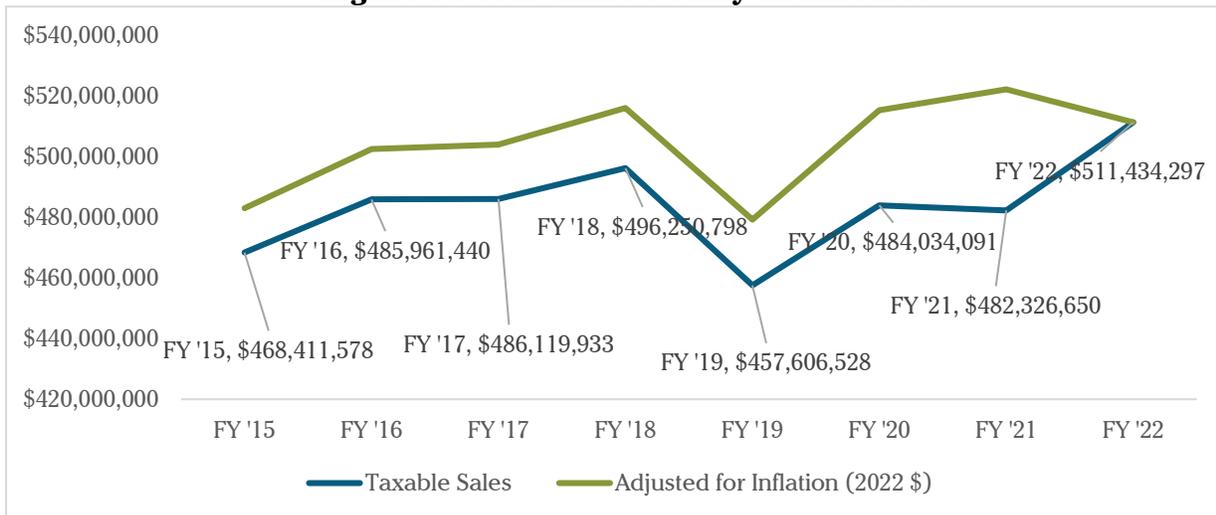


Source: U.S. Census Bureau. "Selected Social Characteristics in the United States." American Community Survey, ACS 5-Year Estimates Data Profiles, 2018-2022

Retail Sales

Data from the Iowa Department of Revenue show that in Fiscal Year 2022, Muscatine County businesses generated approximately \$511 million in retail sales. Over the past seven years, retail sales have increased over the entire period by 9.18%, including a recovery from a loss in sales during Fiscal Year 2019. When adjusted for inflation (2022 dollars), the growth rate shows a 5.88% increase. Figure 5.8 shows retail sales in more detail.

Figure 5.8 Muscatine County Retail Sales



Source: Iowa Department of Revenue, November 2023



A retail gap analysis was conducted for Muscatine County using data from ESRI Community Analyst. The results indicate an even mix between surplus and leakage. Of the nine retail industries reviewed, five of these have a higher supply than demand, meaning outside visitors are coming into the county to purchase these types of goods. These industries include Motor Vehicle & Parts Dealers; Sporting Goods, Hobby, Book & Music Stores; Building Materials, Garden Equipment & Supply Stores; Food Services & Drinking Places; and Electronics & Appliance Stores. The remaining four,

Furniture & Home Furnishing Stores; Food & Beverage Stores; Clothing & Clothing Accessories Stores; and General Merchandise Stores all have leakage, meaning there is more demand in the county than there are opportunities to purchase those desired goods. This means that residents of the county have to leave the county in order to purchase those goods. Table 5.5 shows the retail market potential for various industries in more detail. The leakage/surplus index indicates leakage by having a number smaller than 1 and indicates a surplus by having a value greater than 1.

Table 5.5: Muscatine County Retail Gap

2023 Industry Group	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Index	Number of Businesses
Motor Vehicle & Parts Dealers	441	\$41,530,398	\$218,893,000	\$(177,362,602)	5.27	42
Furniture & Home Furnishings Stores	442	\$13,717,906	\$3,872,000	\$9,845,906	0.28	5
Electronics & Appliance Stores	443	\$4,139,933	\$5,129,000	\$(989,067)	1.24	5
Bldg Materials, Garden Equip. & Supply Stores	444	\$21,236,983	\$50,183,000	\$(28,946,017)	2.36	14
Food & Beverage Stores	445	\$94,187,724	\$26,128,000	\$68,059,724	0.27	39
Clothing & Clothing Accessories Stores	458	\$15,893,603	\$3,412,000	\$26,984,452	0.21	6
Sporting Goods, Hobby,	459	\$5,813,088	\$21,332,000	\$(15,518,912)	3.67	28



2023 Industry Group	NAICS	Demand (Retail Potential)	Supply (Retail Sales)	Retail Gap	Leakage/Surplus Index	Number of Businesses
Book & Music Stores						
General Merchandise Stores	455	\$58,479,450	\$41,370,000	\$17,109,450	0.71	22
Food Services & Drinking Places	722	\$54,999,027	\$65,813,000	\$(10,813,973)	1.19	101

Source: ESRI Community Analyst, October 2023

Education

As of 2023 ACS estimates, 90.1% of Muscatine County’s residents aged 25 and older had a high school diploma or higher, and 23.2% of residents had a bachelor’s degree or higher. Comparatively, 93% of Iowa residents aged 25 and higher had a high school diploma or higher, and 30.3% of residents had a bachelor’s or higher. The tables at the end of the chapter

offer more educational attainment data, along with a more detailed data profile of the county.

There are three school districts located within the county, serving 6,955 students from pre-kindergarten through 12th grade as of the 2022-2023 school year. Additionally, of those students, there were 3,221 that qualified for a free or reduced-price lunch, or roughly 46% of the students in the three districts.

Table 5.6: Muscatine County Enrollment Statistics

District Name	School Count	PreK-12	KG-12	Eligible for Free/Reduced Lunch	% eligible for free/reduced lunch
Muscatine Comm School District	13	4688	4331	2265	52.30%
West Liberty Comm School District	4	1284	1214	658	54.20%
Wilton Comm School District	2	983	915	298	32.57%

Source: Iowa Department of Education, Bureau of Information and Analysis, SRI Merged 2022-2023 Fall File.



Residents of Muscatine County have access to several post-secondary educational choices. Located within a short commute from Muscatine County are Augustana College, Black Hawk College, Eastern Iowa Community College, Muscatine Community College, Orion Technical College, Palmer College of Chiropractic, St. Ambrose University, Trinity College of Nursing, University of Iowa, and Western Illinois University (QC Campus).

Housing

As defined by the U.S. Census Bureau, housing units are physical structures, such as a house, apartment, or mobile home that is occupied or intended to be occupied as living quarters. As of 2023 ACS estimates, there were 18,836 housing units in Muscatine County, with a median housing value of \$159,000. The housing stock of Muscatine County is generally older, with approximately 30% of the housing stock being built

before 1939. Only 11% of the housing was built after 2000.

Approximately 17,075 (93%) of the housing units are occupied (7% vacant). A low vacancy rate indicates that a municipality or county is a desirable place to live. It should also be noted that if the rate falls too low, potential residents might be unable to find suitable living accommodations due to a limited supply of housing units. Out of the total occupied housing units, 75% are occupied by owners, and 25% are occupied by renters. The tables at the end of the chapter provide additional data on the county’s housing statistics.

Building permit data gathered by the County’s Zoning and Permit offices shows that there were 23 new building project permits issued for the fiscal year 2022-2023. This is up from the previous year 2021-2022, which only had five building project permits issued.

Table 5.7: Muscatine County Issued Building Permits

Year	YTD Receipts	YTD Fees	YTD New Residences	YTD Fees Waived
2021-2022	5	\$7,005.90	5	0
2022-2023	23	\$28,970.4	23	0

Source: Muscatine County Assessor’s Office, January 2024

Peer Comparison

Comparing Muscatine County to other counties in Iowa, Illinois, Indiana, and Wisconsin that have similarities can provide insight in the county’s current strengths and challenges compared to “peers.” The counties being compared to Muscatine County are similar in demographics, total population, and population distribution.



Table 5.8: Comparison of Muscatine County to Peer Counties

	Muscatine County	Cerro Gordo County, IA	Stephenson County, IL	Dunn County, WI	Shelby County, IN
Total Population	42,968	44,151	44,630	45,440	45,055
Total Households	18,836	22,603	21,369	18,693	19,423
Median Age	38.6	44.3	45.6	35.4	40.5
Largest City in County	Muscatine	Mason City	Freeport	Menomonie	Shelbyville
City Population	23,671	27,338	23,973	16,843	20,067
Percent of County's total population	55%	62%	54%	37%	45%
Percent Minority	16.45%	12.53%	13.88%	5.00%	6.90%
Average Household size	2.59	2.8	2.82	2.42	2.45
Median Household Income	\$67,427	\$63,149	\$57,527	\$69,721	\$66,449
Percent High School Graduate or higher	90%	93.70%	91.80%	94.10%	89.10%
Percent Bachelor's degree or higher	23.2%	24%	20.3%	28.60%	19.60%
Percent Vacant housing	7%	14.10%	9.60%	7.90%	7.30%
Median Housing value	\$159,000	145,200	122,000	212,000	170,000
Top 3 Industries of the employed population 16 and over	Educational services, and health care and social assistance (22.3%)	Educational services, health care and social assistance (23%)	Educational services, health care and social assistance (26.2%)	Educational services, health care and social assistance (24.1%)	Manufacturing (23%)
	Manufacturing (18.7%)	Manufacturing (15.6%)	Manufacturing (18.9%)	Manufacturing (18.3%)	Educational services, health care and social assistance (19.2%)
	Retail Trade (12.1%)	Retail Trade (15.5%)	Retail Trade (11.3%)	Retail Trade (13.6%)	Retail Trade (9.2%)

Source: U.S. Census Bureau; American Community Survey, ACS 5-Year Estimates Data Profile (2018-2022).



Future Trends

The following are notable demographic trends with the potential to shape Muscatine County's future growth and demographic makeup. These trends have been identified at both the regional and national levels as having the potential to shape future policy decisions, as well as shaping the growth and development of various communities.

Midwest Population Trends

According to the U.S. Census Bureau data, the Midwest region (defined as Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) has suffered small population loss from 2010 to 2020 caused by outmigration. Iowa experienced minimal change positive or negative. In recent years, Iowa experienced a 0.3% increase in population according to the Council of State Governments.

Aging Population

In combination with outmigration, the number of deaths has already begun to outpace births in every Midwestern state, according to research done by the Midwest Council of State Governments. This is due to the aging Baby Boomer (ages 60 to 78) generation, coupled with a national decline in birth rates. The national birth rate reached a record

low (11.0 births per thousand residents) in 2020 according to the Centers for Disease Control and Prevention.

Family Dynamic

Along with a declining birth rate, Millennials are also contributing to a national declining marriage rate. Pew Research Center data analysis suggests that only 37% of 25 to 37-year-olds are married. By contrast, the same survey showed 57% of Gen Xers and 62-67% of Baby Boomers married at that same age. According to the Institute for Family Studies, the marriage rate of Americans aged 18 and older has continuously dropped from 1970 to 2020, when it reached an all-time low of 30.2 people married per thousand. Since then, the marriage rate has slightly improved (30.5 per thousand), but there is not enough data to determine if this trend will continue. However, there is a larger share of different household structures, including more cohabitation arrangement, such as living with a partner or a family member than ever before.

Detailed Profiles

The following profiles provide snapshots of Muscatine County for demographic, social, economic, and social data. All data is from the 2022 American Community Survey 5-year estimates (2018-22 ACS 5-year estimates).



Muscatine County, Iowa Selected Social Characteristics		
Subject	Number	Percent
Households by Type		
Total households	17,075	17,075
Family households (families)	8,286	48.5%
With own children of the householder under 18 years	3,202	18.8%
Married-couple family	1,501	8.8%
With own children of the householder under 18 years	622	3.6%
Male householder, no wife present, family	3,379	19.8%
With own children of the householder under 18 years	450	2.6%
Female householder, no husband present, family	2,430	14.2%
With own children of the householder under 18 years	925	5.4%
Nonfamily households	3,909	22.9%
Householder living alone	832	4.9%
65 years and over	2,188	12.8%
Households with one or more people under 18 years	5,693	33.3%
Households with one or more people 65 years and over	5,073	29.7%
Average household size	2.47	(X)
Average family size	2.98	(X)
Relationship		
Population in households	42,231	42,231
Householder	17,075	40.4%
Spouse	8,166	19.3%
Child	1,608	3.8%
Other relatives	12,844	30.4%
Nonrelatives	1,668	3.9%
Unmarried partner	870	2.1%
Marital Status		
Males 15 years and over	17,139	17,139
Never married	5,737	33.5%
Now married, except separated	8,663	50.5%
Separated	178	1.0%
Widowed	516	3.0%
Divorced	2,045	11.9%
Females 15 years and over	17,215	17,215
Never married	4,675	27.2%
Now married, except separated	8,580	49.8%
Separated	221	1.3%
Widowed	1,600	9.3%



Muscatine County, Iowa Selected Social Characteristics		
Subject	Number	Percent
Divorced	2,139	12.4%
Fertility		
Number of women 15 to 50 years old who had a birth in the past 12 months	465	465
Unmarried women (widowed, divorced, and never married)	194	41.7%
Per 1,000 unmarried women	36	(X)
Per 1,000 women 15 to 50 years old	49	(X)
Per 1,000 women 15 to 19 years old	0	(X)
Per 1,000 women 20 to 34 years old	102	(X)
Per 1,000 women 35 to 50 years old	18	(X)
Grandparents		
Number of grandparents living with own grandchildren under 18 years	820	820
Grandparents responsible for grandchildren	217	26.5%
Years responsible for grandchildren		
Less than 1 year	39	4.8%
1 or 2 years	12	1.5%
3 or 4 years	81	9.9%
5 or more years	85	10.4%
Number of grandparents responsible for own grandchildren under 18 years	217	217
Who are female	132	60.8%
Who are married	176	81.1%
School Enrollment		
Population 3 years and over enrolled in school	9,810	9,810
Nursery school, preschool	1,117	11.4%
Kindergarten	300	3.1%
Elementary school (grades 1-8)	4,729	48.2%
High school (grades 9-12)	2,223	22.7%
College or graduate school	1,441	14.7%
Educational Attainment		
Population 25 years and over	28,939	28,939
Less than 9th grade	1,037	3.6%
9th to 12th grade, no diploma	1,825	6.3%
High school graduate (includes equivalency)	10,143	35.0%
Some college, no degree	5,804	20.1%
Associate's degree	3,411	11.8%
Bachelor's degree	4,732	16.4%



Muscatine County, Iowa Selected Social Characteristics		
Subject	Number	Percent
Graduate or professional degree	1,987	6.9%
Percent high school graduate or higher	26,077	90.1%
Percent bachelor's degree or higher	6,719	23.2%
Veteran Status		
Civilian population 18 years and over	32,385	32,385
Civilian veterans	2,147	6.6%
Disability Status of the Civilian Noninstitutionalized Population		
Total Civilian Noninstitutionalized Population	42,201	42,201
With a disability	5,488	13.0%
Under 18 years	10,483	10,483
With a disability	453	4.3%
18 to 64 years	24,759	24,759
With a disability	2,697	10.9%
65 years and over	6,959	6,959
With a disability	2,338	33.6%
Residence 1 Year Ago		
Population 1 year and over	42,577	42,577
Same house	38,320	90.0%
Different house in the U.S.	4,257	10.0%
Same county	4,233	9.9%
Different county	3,003	7.1%
Same state	1,230	2.9%
Different state	737	1.7%
Abroad	493	1.2%
Place of Birth		
Total population	42,968	42,968
Native	39,980	93.0%
Born in United States	39,593	92.1%
State of residence	29,479	68.6%
Different state	10,114	23.5%
Born in Puerto Rico, U.S. Island areas, or born abroad to American parent(s)	387	0.9%
Foreign born	2,988	7.0%
U.S. Citizenship Status		
Foreign-born population	2,988	2,988



Muscatine County, Iowa Selected Social Characteristics		
Subject	Number	Percent
Naturalized U.S. citizen	1,408	47.1%
Not a U.S. citizen	1,580	52.9%
Year of Entry		
Population born outside the United States	3,375	3,375
Native	387	387
Entered 2010 or later	202	52.2%
Entered before 2010	185	47.8%
Foreign born	2,988	2,988
Entered 2010 or later	506	16.9%
Entered before 2010	2,482	83.1%
World Region of Birth of Foreign Born		
Foreign-born population, excluding population born at sea	2,988	2,988
Europe	230	7.7%
Asia	247	8.3%
Africa	479	16.0%
Oceania	0	0.0%
Latin America	1,969	65.9%
Northern America	63	2.1%
Language Spoken at Home		
Population 5 years and over	40,363	40,363
English only	34,271	84.9%
Language other than English	6,092	15.1%
Speak English less than "very well"	1,765	4.4%
Spanish	5,341	13.2%
Speak English less than "very well"	1,560	3.9%
Other Indo-European languages	442	1.1%
Speak English less than "very well"	76	0.2%
Asian and Pacific Islander languages	163	0.4%
Speak English less than "very well"	46	0.1%
Other languages	146	0.4%
Speak English less than "very well"	83	0.2%
Ancestry		
Total population	42,968	42,968
American	2,065	4.8%
Arab	77	0.2%
Czech	413	1.0%



Muscatine County, Iowa Selected Social Characteristics		
Subject	Number	Percent
Danish	280	0.7%
Dutch	535	1.2%
English	3,200	7.4%
French (except Basque)	545	1.3%
French Canadian	107	0.2%
German	10,471	24.4%
Greek	69	0.2%
Hungarian	73	0.2%
Irish	3,912	9.1%
Italian	370	0.9%
Lithuanian	14	0.0%
Norwegian	869	2.0%
Polish	717	1.7%
Portuguese	33	0.1%
Russian	6	0.0%
Scotch-Irish	317	0.7%
Scottish	560	1.3%
Slovak	0	0.0%
Subsaharan African	534	1.2%
Swedish	640	1.5%
Swiss	115	0.3%
Ukrainian	42	0.1%
Welsh	242	0.6%
West Indian (excluding Hispanic origin groups)	99	0.2%
Computers and Internet Use		
Total households	17,075	17,075
With a computer	15,838	92.8%
With a broadband Internet subscription	14,976	87.7%

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2018-2022.

Note: Data is based on a sample count and is subject to sampling variability.

An '(X)' means that an estimate is not applicable or available.

The total counts of each subcategory are provided in absolute numbers and not percentage in the percent column.



Muscatine County, Iowa Selected Economic Characteristics		
Subject	Number	Percent
Employment Status		
Population 16 years and over	33,886	33,886
In labor force	22,143	65.3%
Civilian labor force	22,043	65.1%
Employed	21,262	62.7%
Unemployed	781	2.3%
Armed Forces	100	0.3%
Not in labor force	11,743	34.7%
Civilian labor force	22,043	22,043
Unemployment Rate	(X)	3.5%
Females 16 years and over	17,042	17,042
In labor force	10,120	59.4%
Civilian labor force	10,046	58.9%
Employed	9,804	57.5%
Own children of the householder under 6 years	2,974	2,974
All parents in family in labor force	2,270	76.3%
Own children of the householder 6 to 17 years	7,015	7,015
All parents in family in labor force	5,596	79.8%
Commuting to Work		
Workers 16 years and over	20,877	20,877
Car, truck, or van -- drove alone	17,602	84.3%
Car, truck, or van -- carpooled	1,618	7.8%
Public transportation (excluding taxicab)	107	0.5%
Walked	479	2.3%
Other means	130	0.6%
Worked at home	941	4.5%
Mean travel time to work (minutes)	19.2	(X)
Occupation		
Civilian employed population 16 years and over	21,262	21,262
Management, business, science, and arts occupations	6,526	30.7%
Service occupations	3,461	16.3%
Sales and office occupations	3,343	15.7%
Natural resources, construction, and maintenance occupations	1,902	8.9%
Production, transportation, and material moving occupations	6,030	28.4%
Industry		
Civilian employed population 16 years and over	21,262	21,262
Agriculture, forestry, fishing and hunting, and mining	577	2.7%
Construction	1,101	5.2%
Manufacturing	6,655	31.3%
Wholesale trade	543	2.6%



Muscatine County, Iowa Selected Economic Characteristics		
Subject	Number	Percent
Retail trade	1,916	9.0%
Transportation and warehousing, and utilities	1,284	6.0%
Information	185	0.9%
Finance and insurance, and real estate and rental and leasing	621	2.9%
Professional, scientific, and management, and administrative and waste management services	1,143	5.4%
Educational services, and health care and social assistance	4,557	21.4%
Arts, entertainment, and recreation, and accommodation and food services	1,180	5.5%
Other services, except public administration	914	4.3%
Public administration	586	2.8%
Class of Worker		
Civilian employed population 16 years and over	21,262	21,262
Private wage and salary workers	17,255	81.2%
Government workers	2,986	14.0%
Self-employed in own not incorporated business workers	987	4.6%
Unpaid family workers	34	0.2%
Income and Benefits (in 2017 inflation-adjusted dollars)		
Total households	17,075	17,075
Less than \$10,000	578	3.4%
\$10,000 to \$14,999	703	4.1%
\$15,000 to \$24,999	1,087	6.4%
\$25,000 to \$34,999	1,359	8.0%
\$35,000 to \$49,999	2,356	13.8%
\$50,000 to \$74,999	3,206	18.8%
\$75,000 to \$99,999	2,368	13.9%
\$100,000 to \$149,999	3,455	20.2%
\$150,000 to \$199,999	1,195	7.0%
\$200,000 or more	768	4.5%
Median household income (dollars)	67,427	(X)
Mean household income (dollars)	84,799	(X)
With earnings		
Mean earnings (dollars)	85,497	(X)
With Social Security		
Mean Social Security income (dollars)	22,081	(X)
With retirement income		
Mean retirement income (dollars)	25,794	(X)
With Supplemental Security Income		
Mean Supplemental Security Income (dollars)	11,766	(X)
With cash public assistance income		
Mean cash public assistance income (dollars)	3,225	(X)
With Food Stamp/SNAP benefits in the past 12 months	2,050	12.0%



Muscatine County, Iowa Selected Economic Characteristics		
Subject	Number	Percent
Families	11,460	11,460
Less than \$10,000	325	2.8%
\$10,000 to \$14,999	335	2.9%
\$15,000 to \$24,999	445	3.9%
\$25,000 to \$34,999	619	5.4%
\$35,000 to \$49,999	1,233	10.8%
\$50,000 to \$74,999	2,280	19.9%
\$75,000 to \$99,999	1,659	14.5%
\$100,000 to \$149,999	2,810	24.5%
\$150,000 to \$199,999	1,073	9.4%
\$200,000 or more	681	5.9%
Median family income (dollars)	82,076	(X)
Mean family income (dollars)	97,482	(X)
Per capita income (dollars)	34,055	(X)
Nonfamily households	5,615	5,615
Median nonfamily income (dollars)	41,075	(X)
Mean nonfamily income (dollars)	52,299	(X)
Median earnings for workers (dollars)	39,595	(X)
Median earnings for male full-time, year-round workers (dollars)	58,265	(X)
Median earnings for female full-time, year-round workers (dollars)	41,895	(X)
Health Insurance Coverage		
Civilian noninstitutionalized population	42,201	42,201
With health insurance coverage	40,578	96.2%
With private health insurance	31,179	73.9%
With public coverage	15,684	37.2%
No health insurance coverage	1,623	3.8%
Civilian noninstitutionalized population under 19 years	10,939	10,939
No health insurance coverage	156	1.4%
Civilian noninstitutionalized population 19 to 64 years	24,303	24,303
In labor force:	19,999	19,999
Employed:	19,383	19,383
With health insurance coverage	18,380	94.8%
With private health insurance	16,689	86.1%
With public coverage	2,170	11.2%
No health insurance coverage	1,003	5.2%
Unemployed:	616	616
With health insurance coverage	556	90.3%
With private health insurance	376	61.0%
With public coverage	187	30.4%
No health insurance coverage	60	9.7%
Not in labor force:	4,304	4,304



Muscatine County, Iowa Selected Economic Characteristics		
Subject	Number	Percent
With health insurance coverage	3,907	90.8%
With private health insurance	2,303	53.5%
With public coverage	2,033	47.2%
No health insurance coverage	397	9.2%
Percentage of Families and People Whose Income in the Past 12 Months is Below the Poverty Level		
All families	(X)	9.8%
With related children of the householder under 18 years	(X)	16.7%
With related children of the householder under 5 years only	(X)	11.5%
Married couple families	(X)	4.4%
With related children of the householder under 18 years	(X)	7.8%
With related children of the householder under 5 years only	(X)	1.8%
Families with female householder, no husband present	(X)	28.6%
With related children of the householder under 18 years	(X)	38.4%
With related children of the householder under 5 years only	(X)	44.2%
All people	(X)	11.7%
Under 18 years	(X)	16.0%
Related children of the householder under 18 years	(X)	15.7%
Related children of the householder under 5 years	(X)	16.4%
Related children of the householder 5 to 17 years	(X)	15.5%
18 years and over	(X)	10.3%
18 to 64 years	(X)	10.9%
65 years and over	(X)	8.4%
People in families	(X)	9.6%
Unrelated individuals 15 years and over	(X)	20.7%

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2018-2022.

Note: Data is based on a sample count and is subject to sampling variability.

An '(X)' means that an estimate is not applicable or available.

The total counts of each subcategory are provided in absolute numbers and not percentage in the percent column.



Muscatine County, Iowa Selected Housing Characteristics		
Subject	Number	Percent
Housing Occupancy		
Total housing units	18,386	18,386
Occupied housing units	17,075	92.9%
Vacant housing units	1,311	7.1%
Homeowner vacancy rate	0.1	(X)
Rental vacancy rate	7.3	(X)
Units in Structure		
Total housing units	18,386	18,386
1-unit, detached	13,824	75.2%
1-unit, attached	437	2.4%
2 units	641	3.5%
3 or 4 units	569	3.1%
5 to 9 units	407	2.2%
10 to 19 units	595	3.2%
20 or more units	519	2.8%
Mobile home	1,384	7.5%
Boat, RV, van, etc.	10	0.1%
Year Structure Built		
Total housing units	18,386	18,386
Built 2014 or later	0	0.0%
Built 2010 to 2013	492	2.7%
Built 2000 to 2009	1,601	8.7%
Built 1990 to 1999	2,016	11.0%
Built 1980 to 1989	1,751	9.5%
Built 1970 to 1979	2,696	14.7%
Built 1960 to 1969	1,935	10.5%
Built 1950 to 1959	1,322	7.2%
Built 1940 to 1949	1,004	5.5%
Built 1939 or earlier	5,569	30.3%
Rooms		
Total housing units	18,386	18,386
1 room	200	1.1%
2 rooms	164	0.9%
3 rooms	1,280	7.0%
4 rooms	3,054	16.6%
5 rooms	3,597	19.6%
6 rooms	3,176	17.3%
7 rooms	2,489	13.5%



Muscatine County, Iowa Selected Housing Characteristics		
Subject	Number	Percent
8 rooms	1,993	10.8%
9 rooms or more	2,433	13.2%
Median rooms	5.8	(X)
Bedrooms		
Total housing units	18,386	18,386
No bedroom	227	1.2%
1 bedroom	1,497	8.1%
2 bedrooms	5,180	28.2%
3 bedrooms	7,777	42.3%
4 bedrooms	2,721	14.8%
5 or more bedrooms	984	5.4%
Housing Tenure		
Occupied housing units	17,075	17,075
Owner-occupied	12,872	75.4%
Renter-occupied	4,203	24.6%
Average household size of owner-occupied unit	2.59	(X)
Average household size of renter-occupied unit	2.13	(X)
Year Householder Moved into Unit		
Occupied housing units	17,075	17,075
Moved in 2015 or later	635	3.7%
Moved in 2010 to 2014	3,021	17.7%
Moved in 2000 to 2009	5,370	31.4%
Moved in 1990 to 1999	3,626	21.2%
Moved in 1980 to 1989	2,161	12.7%
Moved in 1979 and earlier	2,262	13.2%
Vehicles Available		
Occupied housing units	17,075	17,075
No vehicles available	895	5.2%
1 vehicle available	5,000	29.3%
2 vehicles available	6,270	36.7%
3 or more vehicles available	4,910	28.8%
House Heating Fuel		
Occupied housing units	17,075	17,075
Utility gas	12,180	71.3%
Bottled, tank, or LP gas	1,933	11.3%
Electricity	2,629	15.4%



Muscatine County, Iowa Selected Housing Characteristics		
Subject	Number	Percent
Fuel oil, kerosene, etc.	32	0.2%
Coal or coke	0	0.0%
Wood	112	0.7%
Solar energy	29	0.2%
Other fuel	23	0.1%
No fuel used	137	0.8%
Selected Characteristics		
Occupied housing units	17,075	17,075
Lacking complete plumbing facilities	73	0.4%
Lacking complete kitchen facilities	214	1.3%
No telephone service available	208	1.2%
Occupants Per Room		
Occupied housing units	17,075	17,075
1.00 or less	16,722	97.9%
1.01 to 1.50	276	1.6%
1.51 or more	77	0.5%
Value		
Owner-occupied units	12,872	12,872
Less than \$50,000	1,219	9.5%
\$50,000 to \$99,999	1,992	15.5%
\$100,000 to \$149,999	2,680	20.8%
\$150,000 to \$199,999	2,280	17.7%
\$200,000 to \$299,999	2,614	20.3%
\$300,000 to \$499,999	1,639	12.7%
\$500,000 to \$999,999	273	2.1%
\$1,000,000 or more	175	1.4%
Median (dollars)	159,000	(X)
Mortgage Status		
Owner-occupied units	12,872	12,872
Housing units with a mortgage	7,326	56.9%
Housing units without a mortgage	5,546	43.1%
Selected Monthly Owner Costs (SMOC)		
Housing units with a mortgage	7,326	7,326
Less than \$500	11	0.2%
\$500 to \$999	1,422	19.4%
\$1,000 to \$1,499	2,945	40.2%
\$1,500 to \$1,999	1,781	24.3%



Muscatine County, Iowa Selected Housing Characteristics		
Subject	Number	Percent
\$2,000 to \$2,499	636	8.7%
\$2,500 to \$2,999	366	5.0%
\$3,000 or more	165	2.3%
Median (dollars)	1,372	(X)
Housing units without a mortgage		
Less than \$250	258	4.7%
\$250 to \$399	578	10.4%
\$400 to \$599	2,040	36.8%
\$600 to \$799	1,610	29.0%
\$800 to \$999	666	12.0%
\$1,000 or more	394	7.1%
Median (dollars)	592	(X)
Selected Monthly Owner Costs as a Percentage of Household Income (SMOCAPI)		
Housing units with a mortgage (excluding units where SMOCAPI cannot be computed)	7,317	7,317
Less than 20.0 percent	4,079	55.7%
20.0 to 24.9 percent	1,308	17.9%
25.0 to 29.9 percent	330	4.5%
30.0 to 34.9 percent	405	5.5%
35.0 percent or more	1,195	16.3%
Not computed	9	(X)
Housing unit without a mortgage (excluding units where SMOCAPI cannot be computed)		
Less than 10.0 percent	2,252	41.0%
10.0 to 14.9 percent	1,444	26.3%
15.0 to 19.9 percent	592	10.8%
20.0 to 24.9 percent	443	8.1%
25.0 to 29.9 percent	124	2.3%
30.0 to 34.9 percent	115	2.1%
35.0 percent or more	526	9.6%
Not computed	50	(X)
Gross Rent		
Occupied units paying rent	3,963	3,963
Less than \$500	347	8.8%
\$500 to \$999	1,992	50.3%
\$1,000 to \$1,499	1,314	33.2%
\$1,500 to \$1,999	277	7.0%



Muscatine County, Iowa Selected Housing Characteristics		
Subject	Number	Percent
\$2,000 to \$2,499	14	0.4%
\$2,500 to \$2,999	0	0.0%
\$3,000 or more	19	0.5%
Median (dollars)	936	(X)
No rent paid	240	(X)
Gross Rent as a Percentage of Household Income (GRAPI)		
Occupied units paying rent (excluding units where GRAPI cannot be computed)	3,802	3,802
Less than 15.0 percent	583	15.3%
15.0 to 19.9 percent	609	16.0%
20.0 to 24.9 percent	551	14.5%
25.0 to 29.9 percent	471	12.4%
30.0 to 34.9 percent	335	8.8%
35.0 percent or more	1,253	33.0%
Not computed	401	(X)

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2018-2022.

Note: Data is based on a sample count and is subject to sampling variability.

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The total counts of each subcategory are provided in absolute numbers and not percentage in the percent column.



Muscatine County, Iowa Demographic and Housing Estimates		
Subject	Estimate	Percent
Sex and Age		
Total population	42,968	42,968
Male	21,552	50.2%
Female	21,416	49.8%
Sex ratio (males per 100 females)	100.6	(X)
Under 5 years	2,605	6.1%
5 to 9 years	2,652	6.2%
10 to 14 years	3,357	7.8%
15 to 19 years	2,897	6.7%
20 to 24 years	2,518	5.9%
25 to 34 years	5,271	12.3%
35 to 44 years	5,310	12.4%
45 to 54 years	5,225	12.2%
55 to 59 years	2,675	6.2%
60 to 64 years	3,094	7.2%
65 to 74 years	4,504	10.5%
75 to 84 years	2,000	4.7%
85 years and over	860	2.0%
Median age (years)	38.6	(X)
Under 18 years	10,483	24.4%
16 years and over	33,886	78.9%
18 years and over	32,485	75.6%
21 years and over	30,767	71.6%
62 years and over	9,044	21.0%
65 years and over	7,364	17.1%
18 years and over	32,485	32,485
Male	16,246	50.0%
Female	16,239	50.0%
Sex ratio (males per 100 females)	100	(X)
65 years and over	7,364	7,364
Male	3,331	45.2%
Female	4,033	54.8%
Sex ratio (males per 100 females)	82.6	(X)
Race		
Total population	42,968	42,968
One race	40,880	95.1%



Muscatine County, Iowa Demographic and Housing Estimates		
Subject	Estimate	Percent
Two or more races	2,088	4.9%
One race	40,880	95.1%
White	35,899	83.5%
Black or African American	1,163	2.7%
American Indian and Alaska Native	99	0.2%
Cherokee tribal grouping	0	0.0%
Chippewa tribal grouping	8	0.0%
Navajo tribal grouping	0	0.0%
Sioux tribal grouping	12	0.0%
Asian	282	0.7%
Asian Indian	143	0.3%
Chinese	11	0.0%
Filipino	27	0.1%
Japanese	0	0.0%
Korean	21	0.0%
Vietnamese	18	0.0%
Other Asian	62	0.1%
Native Hawaiian and Other Pacific Islander	0	0.0%
Native Hawaiian	0	0.0%
Guamanian or Chamorro	0	0.0%
Samoan	0	0.0%
Other Pacific Islander	0	0.0%
Some other race	3,437	8.0%
Two or more races	2,088	4.9%
White and Black or African American	266	0.6%
White and American Indian and Alaska Native	211	0.5%
White and Asian	229	0.5%
Black or African American and American Indian and Alaska Native	1,081	2.5%
Race alone or in combination with one or more other races		
Total population	42,968	42,968
White	37,797	88.0%
Black or African American	1,687	3.9%
American Indian and Alaska Native	433	1.0%
Asian	602	1.4%
Native Hawaiian and Other Pacific Islander	0	0.0%
Some other race	4,649	10.8%
Hispanic or Latino and Race		
Total population	42,968	42,968



Muscatine County, Iowa Demographic and Housing Estimates		
Subject	Estimate	Percent
Hispanic or Latino (of any race)	8,006	18.6%
Mexican	6,073	14.1%
Puerto Rican	147	0.3%
Cuban	159	0.4%
Other Hispanic or Latino	1,627	3.8%
Not Hispanic or Latino	34,962	81.4%
White alone	32,284	75.1%
Black or African American alone	1,163	2.7%
American Indian and Alaska Native alone	48	0.1%
Asian alone	282	0.7%
Native Hawaiian and Other Pacific Islander alone	0	0.0%
Some other race alone	97	0.2%
Two or more races	1,088	2.5%
Two races including Some other race	294	0.7%
Two races excluding Some other race, and Three or more races	794	1.8%
Total housing units	18,386	(X)
Citizen, Voting Age Population		
Citizen, 18 and over population	30,936	30,936
Male	15,513	50.1%
Female	15,423	49.9%

Source: U.S. Census Bureau, American Community Survey, 5-Year Estimates 2018-2022.

Note: Data is based on a sample count and is subject to sampling variability.

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Chapter 6 Resources

This chapter is intended to provide detailed information on areas that may or may not be suitable for development. Understanding the characteristics of the resources in Muscatine County will inform land use decision-making. The information can draw attention to critical resources to be preserved or protected, or resources that have economic value and importance. This chapter provides information and data on land, water, natural, and agricultural resources of Muscatine County. Additional resource references are provided in the Appendix for further detail.

The county offers a variety of natural features from rolling hills to river bluffs, from woodlands to farmland, and from lakes to the Mississippi and Cedar Rivers. The total area of the county amounts to 287,415 acres or 449 square miles.¹

Land Resources

Topography – Topography, or the two-dimensional display of a three-dimensional landscape, is used in planning to help select the best locations for building locations, planned roads and bridges, and the best farm fields. Muscatine County is located in two different landform regions, the Southern Iowa Drift Plain and the

Mississippi Alluvial Plain. The Southern Iowa Drift Plain contains rolling topography with fractured glacial tills and moderate deposits of loess mantling. The Southern Iowa Drift Plain is vulnerable to groundwater contamination. The elevation in Muscatine County varies slightly, with the county's highest elevation southwest of Stockton at 815 feet and the lowest at 535 feet near Muscatine Island.

Soils – Approximately 84% of the acreage of Muscatine County is 5% or less in slope, making most of the county's land ideal for growing corn and soybeans. Details on descriptions of the soils, locations, suitability, limitations, and management for specified uses can be found in the Digital version of Soil Survey of Muscatine County, Iowa issued in September 2023 by the United States Department of Agriculture, Natural Resources Conservation Service².

Geology – The majority of Muscatine County is included in the Southern Iowa Drift Plain. This particular drift plain is Iowa's largest landform. Landforms of this region are heavily composed of glacial drift. These glaciers pushed a mix of gravel and soil, called till, across Iowa. This glacial till forms the base of Iowa's rich farming soils. As the climate

¹ Iowa Department of Natural Resources NRGIS coverage COUNTY, derived by digitizing boundaries from USGS 1:24,000 scale topographic quadrangle maps

² *Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: <http://websoilsurvey.sc.egov.usda.gov/>.*



warmed, the glaciers melted. Unmeasurable amounts of water filled the landscape, creating Iowa's river valleys. After the glaciers melted and the ancient seas were gone, the sediments that had been laid down became dry. Strong winds picked up the sediments and carried them across Iowa. Much of Iowa is covered by this wind-blown sediment, called loess. As the glaciers melted in this region, the meltwater eroded away and gave hillslopes a texture of finely etched rills that give a distinct ribbed or furrowed appearance to the terrain. These rills give way to ravines, then to creeks, and eventually to perennial streams or rivers in major valleys. This landscape drained the postglacial wetlands, erased the ice-contact landforms, and have reshaped old glacial plains into the deeply creased landscapes that are visible in this region today.

Geology of Wildcat Den State Park – Muscatine County's most prominent geological feature is Wildcat Den State Park. Wildcat Den State Park makes up 423 acres alongside Pine Creek and is defined by its imposing sandstone outcrops. Sandstone cliffs that were deposited about 310 million years ago are a major attraction in the park. The oldest bedrock, exposed along the margins of Pine Creek, include about 25 feet of fossiliferous limestone and dolomite of the Cedar Valley Group. These rock layers formed from lime sediment that accumulated in the shallow tropical seas that covered Iowa during the Devonian Period about 375

million years ago. Fossil coral, stromatoporoids (extinct sponge-like animals), and other fossils of aquatic organisms are preserved in the bedrock that lines Pine Creek. The park is also home to exposed Pennsylvanian strata that accumulated during the "Age of Coal." During this geologic period, eastern Iowa straddled the equator, and humid tropical forests stretched along ancient river courses and coastal lowlands/swamps where coal was formed. Deposits of gray shales and mudstone accumulated around 315 million years ago, leading to soft rocks of the Caseyville Formation that can be seen on the valley walls of Pine Creek.

Bedrock Formations – Most of Muscatine County bedrock is of the Cedar Valley group. The formation runs along the Cedar River from Minnesota to the Mississippi River in Muscatine and Louisa counties. This formation was created during the middle part of the Devonian period. Intervals included in the formation are Little Cedar, Coralville, Lithograph City, and Shells Rock. The primary lithologies are limestone, fossiliferous, variably argillaceous, part biostromal, dolomite, part fossil-moldic to vuggy, and variably argillaceous. Secondary lithologies include limestone, sparse to unfossiliferous, argillaceous to shaly shale, and gray to green-gray dolomite. The maximum thickness in out crop belt is 80-135 feet in south-east Iowa, 130-210 feet in east-central Iowa, and 250-350 feet in northern Iowa.³

³ Witzke, Brian J. *Bedrock Geologic Map of Iowa*. IIHR Hydroscience and Engineering, University of Iowa. March 2010.



Wildlife and Habitat Resources⁴

Flora – Muscatine County is home to humid, deciduous forests. The presence of the Cedar and Mississippi Rivers in Muscatine County provides a good environment for flora like silver maples, cottonwoods, gooseberry, and wild grape plants to grow. According to the Iowa DNR, there are 140 total unique species in Muscatine County. Muscatine County is home to many plant species, including Black Huckleberry, Buckbean, Golden Corydalis, Kitten Tails, Meadow Beauty, Pink Milkwort, Roundleaf Goldenrod, Small Morning Glory, Toothcup, Drooping Bluegrass, and Slender

Fimbry. There are also a few species like Japanese honeysuckle, dandelions, and white mulberry trees that are not native to the region, but were brought to the area by European settlers.

Fauna (Broad Range) – The county is home to a variety of wildlife from all major groups, including mammals, reptiles, fish, birds, amphibians, and insects. Hunttable animals include turkey, deer, pheasant, squirrel, and rabbit. Around 2013, bobcats, which were on the endangered species list, had expanded their ranges into Muscatine County. Following is a full endangered species list for Iowa.

Table 6.1: Endangered Animal Species in Iowa

Scientific Name	Common Name
Myotis Sodalis	Indiana Bat
Perognathus flavescens	Plains Pocket Mouse
Clethrionomys gapperi	Red-backed Vole
Spilogale putorius	Spotted Skunk
Buteo lineatus	Red-shouldered Hawk
Circus cyaneus	Northern Harrier
Charadrius melodus	Piping Plover
Tyto alba	Common Barn Owl
Sterna antillarum	Least Tern
Rallus elegans	King Rail
Asio flammeus	Short-eared Owl
Acipenser fulvescens	Lake Sturgeon
Scaphirhynchus albus	Pallid Sturgeon
Notropis anogenus	Pugnose Shiner
Notropis texanus	Weed Shiner
Semotilus margarita	Pearl Dace
Noturus nocturnus	Freckled Madtom
Etheostoma chlorosomum	Bluntnose Darter
Etheostoma microperca	Least Darter
Kinosternon flavescens	Yellow Mud Turtle
Clemmys insculpta	Wood Turtle
Eumeces obsoletus	Great Plains Skink

⁴ Muscatine County Conservation



Scientific Name	Common Name
<i>Nerodia erythrigaster neglecta</i>	Copperbelly Water Snake
<i>Heterodon nasicus</i>	Western Hognose Snake
<i>Agkistrodon contortrix</i>	Copperhead
<i>Crotalus viridis</i>	Prairie Rattlesnake
<i>Sistrurus catenatus</i>	Massasauaga Rattlesnake
<i>Ambystoma laterale</i>	Blue-spotted Salamander
<i>Rana areolata</i>	Crawfish Frog
<i>Hesperia dacotae</i>	Dakota Skipper
<i>Coenonympha tullia</i>	Ringlet
<i>Discus macclintocki</i>	Iowa Pleistocene Snail
<i>Novisuccinea new species A</i>	Minnesota Pleistocene Ambersnail
<i>Novisuccinea new species B</i>	Iowa Pleistocene Ambersnail
<i>Catinela gelida</i>	Frigid Ambersnail
<i>Vertigo briarensis</i>	Briarton Pleistocene Vertigo
<i>Vertigo meramecensis</i>	Bluff Vertigo
Iowa Pleistocene Vertigo	Vertigo new species
<i>Cumberlandia monodonta</i>	Spectacle Case
<i>Alasmidonta viridis</i>	Slippershell
<i>Tritogonia verrucosa</i>	Buckhorn
<i>Fusconaia ozarkensis</i>	Ozark Pigtoe
<i>Plethobasus cyphus</i>	Bullhead
<i>Pleurobema sintoxia</i>	Ohio River Pigtoe
<i>Lampsilis teres teres</i>	Slough Sandshell
<i>Lampsilis teres anodontoides</i>	Yellow Sandshell
<i>Lampsilis higginsii</i>	Higgin’s-eye Pearly Mussel

Source: Iowa Department of Natural Resources

Invasive Species – Muscatine County is home to a number of invasive flora and fauna species. Invasive species are non-native species whose introduction causes or is likely to cause economic or environmental harm or harm to human health. The most common issue these species pose is outcompeting native species for food or using the native species as food. Invasive species are introduced to these new environments through human activity. The Mississippi

River, while being an extremely useful connection, also facilitates the spread of invasive aquatic species like Bighead and Silver Carp, and Zebra mussels. It is important that people are conscious of how their actions can facilitate bringing in invasive species and take precautions to mitigate this, such as cleaning, draining, and drying their boats to inhibit the spread of Zebra mussels. A full list of invasive species in Iowa is in Table 6.2.



Table 6.2: List of Iowa’s Invasive Species

Species	Species	Species
Bighead Carp	Purple Loosestrife	Water Lettuce
Brittle Naiad	Rusty Crawfish	White Perch
Curlyleaf Pondweed	Salt Cedar	Yellow Floating Heart
Eurasian Watermilfoil	Silver Carp	Zebra Mussel
Flowering Rush	Spring Viremia of Carp	
Largemouth Bass Virus	Water Hyacinth	

Source: Iowa Department of Natural Resources

Water Resources

Groundwater – According to the Iowa Geological Survey Bureau (GSB), the availability of groundwater in the county is considered good. Most alluvial aquifers yield between 50 and 1,600 gallons of water per minute, with the alluvium in the Mississippi River Valley routinely having high yields. Additionally, the Muscatine Island aquifer is considered one of the most prolific aquifers in Iowa. Although, even the drift aquifers in Muscatine County can yield between 20 and 150 gallons per minute giving them the ability to serve single family homes. Drift aquifers are also used to supply water for rural domestic and livestock supplies. The Devonian aquifer yields between 50 and 300 gallons per minute making it useful for municipal and private domestic and livestock supplies. The Silurian aquifer yields between 100 to 500 gallons per minute making it useful for municipal and industrial purposes. Lastly, the Cambrian-Ordovician aquifer yields between 100 and 2,300 gallons per minute. This aquifer can be used for municipal and industrial purposes.

Groundwater Quality – The Silurian-Devonian aquifer underlies much of Iowa including Muscatine County. According to the U.S. Geological Survey, the county is

located on a part of the aquifer that experiences good circulation and contains dissolved solids in concentrations of less than 500 mg per liter, making for good groundwater quality within the county.

Rivers – Muscatine County is located on the bank of the Mississippi River in southeastern Iowa. The Mississippi along with the Cedar River and their tributaries provide good drainage throughout the county. Upland areas like Kansan drift plains and Illinoian drift plains do exist in the county. The Kansan drift plains are found in the extreme northwestern portion of the county, while the Illinoian drift plains exist between the Cedar and the Mississippi Rivers. Bottomland areas occur along the Cedar River between Moscow and Conesville along the Mississippi River and downstream of the City of Muscatine. The Cedar River is designated by the Iowa Department of Natural Resources as a High-Quality Resource (HQR). HQR waters are defined as “waters of substantial recreational or ecological significance that possess unusual, outstanding, or unique physical, chemical, or biological characteristics that enhance the beneficial uses and warrant special protection.” This designation protects the waterway from some of Iowa’s biggest threats like animal manure.



Muscatine County is part of the Lower Cedar Watershed Management Authority. The authority was formed after 2010 following Iowa legislation authorizing watershed management authorities. It is formed by a Chapter 28E Agreement and has the authority to assess and reduce flood risk, assess and improve water quality, monitor federal flood risk planning activities, educate on flood risks and water quality, and allocate money made available to the authority for water quality and flood mitigation.

Mississippi River – Starting in Lake Itasca in northern Minnesota, the Mississippi River flows 2,340 miles before it meets its termination point in the Gulf of Mexico. The Mississippi River watershed drains all or parts of 32 U.S. states and two Canadian provinces, making it the world’s fourth-largest watershed. The Mississippi River ranks as the 13th largest river by discharge in the world. Major metro areas along the Mississippi River include Minneapolis-St. Paul, MN, the largest metro area, followed by St Louis, MO, Memphis, TN, New Orleans, LA, Baton Rouge LA, Quad Cities, IL/IA, St. Cloud, MN, La Crosse, WI, Cape Girardeau-Jackson, MO/IL, and Dubuque, IA. Native Americans lived along the Mississippi River for thousands of years. By the time of European arrival in the 16th century, the Native Americans had developed highly functional communities along the river. The Europeans used the river as a natural border for the early United States. By the 19th century, the

Mississippi and several of its tributaries, like the Ohio and Missouri Rivers, became pathways for western expansion. In the 19th and early 20th centuries, steamboats were widely used to ship industrial and agricultural goods. Today, the river still serves as a vital transportation system for the shipment of goods.⁵

Cedar River – The headwaters of the Cedar River are located in Dodge County, Minnesota with two forks near the town of Blooming Prairie and one near the town of Mayfield. The river stretches 338 miles before it drains into the Iowa River, which is a tributary to the Mississippi River. In Muscatine County, access to the Cedar River is available McKeown Access, Saulsbury Bridge Recreation Area, Shield Prairie, and Shuger Memorial Park. The river’s primary use is recreational.⁶

Lakes – Deep Lakes Park is a 435-acre plot with 120 acres of multiple small lakes. Along with the multiple lakes in Deep Lakes Park, Muscatine County has Gedney Lake. The lake is a small 18-acre body of water that lies in the Cedar River floodplain. Both lake systems are known to have quality fishing.

Creeks – Muscatine County is home to several small creeks, including Mad Creek, Pine Creek, Crane Creek, Chicken Creek, Otter Creek, Pike Creek, Wapsinoc Creek, Prairie Creek, Sweetland Creek, Rickey Creek, and Mosquito Creek. Most of these streams are tributaries of the Cedar River.

⁵ Bowden, Rob (January 27, 2005). Settlements of the Mississippi River; Mississippi River Facts. National Park Service. Updated August, 11 2024.

⁶ Cedar River Summary Report. US Geological Survey. Accessed August 11, 2024;



Table 6.3: Creeks and their Lengths in Muscatine County

Creek	Length (miles)
Chicken Creek	8.6
Cane Creek	8.1
Mad Creek	7.4
Mosquito Creek	10
Mud Creek	24
Otter Creek	9.75
Pike Creek	7.75
Pine Creek	15
Prairie Creek	5.39
Rickey Creek	7.1
Sweetland Creek	6.8
Wapsinonoc Creek	14

Table 6.4: Canals in Muscatine County

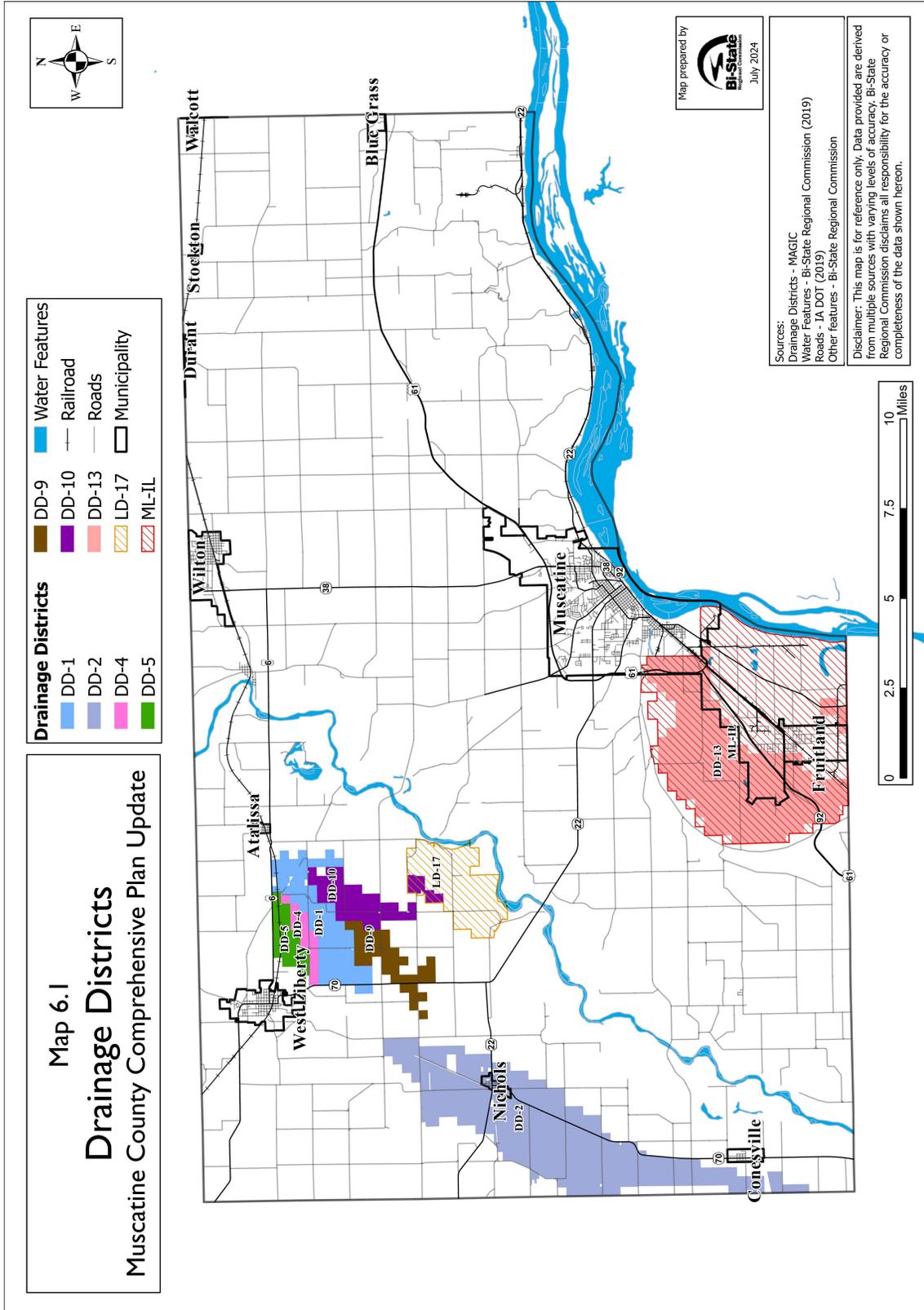
Canal Name
Goshen Ditch
Wales Ditch

Flood Protection – Muscatine Island is protected from flooding by a 27-foot-high levee system that runs along the bank of the Mississippi River from Muscatine. Engineering work is underway to mitigate a potential breach and provide extra protections from overtopping the levee by flood waters. The Cedar River also has smaller levees that protect farm land along the banks the river.

Drainage Districts – As shown on Map 6.1, the area between Atalissa and Conesville is served by Drainage Districts 1, 2, 4, 5, 9, and 10. The area southwest of Muscatine is served by District 13 and Subdistrict 1. The county is also served by two levee districts including District 17 along the Cedar River and the Island Levee Area south of Muscatine along the Mississippi River. Additionally, Muscatine County participates in the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP).



Map 6.1: Drainage Districts in Muscatine County





Impaired Waters – Under Section 303(d) of the Clean Water Act, states are required to submit a list of waters for which effluent limits may not be sufficient to meet all state water quality standards. This report should be submitted on April 1 of even number years. A waterbody may fail to meet water quality standards because of an individual pollutant or multiple pollutants. The impaired designation also means that states must submit a Total Maximum Daily Load (TMDL). These are calculations of the maximum amount of a pollutant allowed to enter a waterbody, so the waterbody will meet water quality standards. They determine the pollutant reduction target and allocate load reductions necessary to the source of the pollutant.

There are five water bodies that travel through Muscatine County that are on the impaired waters list. First, the portion of the Mississippi that runs through Muscatine County is on the list because of high amounts of fecal coliform. Fecal coliform is a type of bacteria that usually originates in the intestines of warm-blooded animals (humans). Second, the Cedar River is listed because of high amounts of E Coli. Mad Creek is also listed for the same reason. Lastly, Pike

Run is on the list because of low aquatic macroinvertebrates.

Iowa Nutrient Reduction Strategy – The Iowa Nutrient Reduction Strategy is a framework to reduce nutrients from point and non-point sources that move via surface water from Iowa into the Mississippi River Basin and down to the Gulf of Mexico. Excessive levels of these nutrients, most commonly nitrogen and phosphorus, contribute to hypoxic conditions in the Gulf. The strategy was developed through a partnership between the Iowa Department of Agriculture and Land Stewardship, Iowa Department of Natural Resources, and Iowa State University’s College of Agriculture and Life Sciences. The goal laid out in the Iowa Nutrient Reduction Strategy is to reduce annual nitrogen and phosphorus loss by 45%. In an attempt to limit nonpoint source pollution, the strategy emphasizes the adoption of agricultural conservation practices that reduce the levels of nutrients that leave farm fields and enter water bodies. For point source reduction, selected municipalities and industrial facilities evaluate their current nutrient reductions and assess the possibility of upgrading nutrient treatment capacity.⁷

⁷ Iowa Department of Agriculture and Land Stewardship. *Iowa Nutrient Reduction Strategy*. Updated December. 2017



Table 6.5: Voluntary Conservation Programs

Program	Description
Agricultural Conservation Easement Program (ACEP)	Helps landowners, land trusts, and other entities protect, restore, and enhance wetlands or protect working farms and ranches through conservation easements.
Clear Lakes, Estuaries, and Rivers (CLEAR)	Is a part of the CRP. It prioritizes water quality practices on the land that, if enrolled, will help reduce sediment loadings, nutrient loadings, and harmful algal blooms.
Conservation Reserve Enhancement Program (CREP)	This program is a spinoff of CRP and it targets high priority conservation issues identified by government and non-governmental organizations. Farm land that falls under these conservation issues is removed from production in exchange for annual rental payments.
Conservation Reserve Program (CRP)	Pays a yearly rental payment in exchange for farmers removing environmentally sensitive land from agricultural production and planting species that will improve environmental quality.
Conservation Technical Assistance (CTA)	Provides farmers, ranchers, and forestland owners with the knowledge and tools they need to conserve, maintain, and restore the natural resources on their lands and improve the health of their operations for the future.
Conservation Stewardship Program (CSP)	This program offers payments to agricultural and forest producers who expand their existing conservation efforts by adopting additional conservation activities. It also offers bundles where you can select a suite of enhancements and receive a higher payment rate.
Emergency Conservation Program (ECP)	This program provides funding and technical assistance for farmers and ranchers to restore farmland damaged by natural disasters and for emergency water conservation measures in severe droughts.
Emergency Forest Restoration Program (EFRP)	Is very similar to the ECP, as it provides funding to restore privately-owned forests damaged by natural disasters.
Environmental Quality Incentives Program (EQIP)	This program helps farmers, ranchers, and forest landowners integrate conservation into working lands. It also helps address natural resource concerns like water and air quality, soil health, and wildlife habitats



Program	Description
Farmable Wetlands Program (FWP)	FWP is designed to restore wetlands and wetland buffer zones that are farmed, and gives farmers and ranchers annual rental payments in return for restoring wetlands and establishing plant cover.
Grassland Reserve Program (GRP)	Works to prevent grazing and pasture land from being converted into cropland or used for urban development. In return for voluntarily limiting the future development of their land, farmers receive a rental payment.
Healthy Forests Reserve Program (HFRP)	Helps landowners restore, enhance, and protect forestland resources on private and tribal lands through easements and financial assistance.
Regional Conservation Partnership Program (RCPP)	This program is a partner-driven approach to conservation that funds solutions to natural resource challenges on agricultural land. By leveraging collective resources and collaborating on common goals, RCPP demonstrates the power of public-private partnerships in delivering results for agriculture and conservation.
Source Water Protection Program (SWPP)	SWPP is designed to protect surface and ground water used as drinking water by rural residents. The program targets states based on their water quality and population.

Source: National Resources Conservation Service, U.S Department of Agriculture

Agricultural Resources

Muscatine County continues to retain large tracts of prime farmland and farmland of statewide importance. According to the Natural Resources Conservation Service (NRCS), approximately 242,811 acres (about 86%) of the 279,965 acres in the entire county is either prime farmland or farmland of statewide importance. The U.S Department of Agriculture’s definition of prime farmland is land that is best suited to food, feed forage, fiber and oilseed crops. It could be cultivated land pasture, woodland, or other land, but it must not be urban. Soil qualities, growing season, and moisture supply are what is

necessary for well-managed soil to produce a consistently high yield of crops. Ideally, prime farmland produces the highest yields with minimal inputs of energy and economic resources resulting in very little damage to the environment. Prime farmland, or prime farmland under certain conditions, accounts for around 162,680 acres (about 56%). Farmland of statewide importance is defined as land, in addition to prime and unique farmlands, that is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops. Muscatine County has approximately 80,132 acres of farmland of statewide importance.



Farms – According to the Census of Agriculture, farms are agricultural places that produce and sell, or normally sell, \$1,000 worth or more of agricultural products. Muscatine County had 742 farms as of 2022, up from 714 farms in 2017. “Land in farms” is defined as agricultural land used for crops, pasture or grazing, woodlands, wasteland not under cultivation, land in conservation reserve, and wetlands reserve programs, and includes owned and rented land. “Land in farms” in Muscatine County totaled 201,753 acres in 2022, which was around 70% of the land in the county. This is down from 2017, where the total acreage of “land in farms” was 219,283.⁸

Farm Values – Muscatine County farmland values once reached a peak in 1981 at \$2,528 per acre. The values then decreased for the next five years, bottoming out in 1986. Since 1986, there has been a significant increase in the value of farmland in both the state and the county. Per Iowa State’s Land Survey in 2023, average farmland value in Muscatine County was up to \$11,734 per acre, which was \$36 higher than in 2022⁹.

Agricultural Products Produced – Corn, soybeans, oats, wheat, and forage crops like alfalfa are the primary crops produced in Muscatine County. However, portions of the county are better suited to produce other crops. The sandy soils close to the banks of the Mississippi River south of Muscatine near Muscatine Island, Fruitland, and Conesville are good for the production of fruits and vegetables. Since

the mid-1800s, both cantaloupe and watermelon have been produced in the region. In fact, the region is known for its many varieties of muskmelon, and Muscatine County melons can be found at grocery stores and shops all over Iowa. In addition to the county’s production of melons, other crops like pumpkins, peppers, potatoes, sweet potatoes, and squash are becoming more common.

Farmland Preservation – Prime farmland is preserved in the county using the Land Evaluation and Site Assessment (LESA) evaluation process. When land is proposed to be converted from agricultural land to another use by a zoning amendment, a LESA is performed to determine the merits of the conversion. Farm operators who own their own land or expect to lease it are motivated by potential profits to make sure the quality and productivity of land do not deteriorate. As an incentive to reduce the environmental impacts of farming, the federal government provides financial and technical support for farm conservation efforts. Even so, rivers and streams continue to be affected by the runoff of sediment and nutrients. The United States Department of Agriculture (USDA) conservation programs share with farmers the cost of adopting the voluntary conservation practices. The farmer has to decide if those practices are or aren’t beneficial to his farm operation.

For specific crops, the USDA lists three groups of conservation management practices. The first group is called

⁸ United States Department of Agriculture. 2022 Census of Agriculture: Muscatine County Profile.

⁹ Center for Agricultural and Rural Development. Iowa State University. 2022 and 2023 Iowa Average Land Values by County.



“standard practices.” These practices do not require advanced management skills. The list of “standard practices” includes conservation tillage, crop rotation, insect/herbicide-resistant plant cultivation. The second group is labeled as “decision aids.” Practices in this group provide the farmer with information needed to pursue farming practices that

use moderate chemical input like soil testing, pest scouting, and soil mapping. Lastly, the third group is considered “management intensive practices.” These practices require extra effort by the farmer to manage application of nutrients and chemicals. The only practice in this group is input placement and timing.

Table 6.6: 2017 & 2022 Muscatine County – Farms, Land in Farms, and Land Use

Commodity	Data Item	2017 Value	2022 Value
Total Land	Total land area measured Muscatine County (acres)	279,965	279,965
Farm Operations	Total number of farm operations in the county	714	742
	Total acres operated on farm operations in the county	219,283	201,753
	Acres operated per farm operation.	307	272
Ag Land in Crop Land	Total cropland acres in the county.	187,423	170,915
	Total cropland acres – harvested	173,762	157,760
	Total cropland acres – pastured only	1,086	1,077
	Total cropland acres – excluding harvested & pastured acres	12,575	12,078
	Total cropland acres – excluding harvested & pastured acres that were idle acres	12,199	12,046
	Total cropland acres – excluding harvested & pastured acres where all crops failed	376	32
	Total cropland acres – excluding harvested & pastured acres that were cultivated summer fallow	34 (Last record was 2007)	34 (Last record was 2007)
Ag Land in Woodland	Total acres of agricultural land in woodland	15,213	13,512
	Total acres of agricultural land in pastured woodland	4,542	2,407
	Total acres of agricultural land in woodland – excluding pastured woodland	10,671	11,105
Ag Land in Pastureland	Total acres agricultural land in pastureland	13,910	11,558
	Total acres of pastureland – excluding pastured cropland & woodland	8,282	8,074
	Total acres of agricultural land – excluding cropland, pastureland, and woodland	8,365	9,252
Government Programs	Total acres in government programs – Federal, Conservation, and Wetlands programs	10,953	10,820
Crop Insurance	Total acres of agricultural land with Crop Insurance	160,613	145,130

Source: USDA, National Agricultural Statistics Service 2017 and 2022 Census of Agriculture

**Table 6.7: 2022 Muscatine County – Farm Land Use Practices**

Farmland Use Practices	2022
Total Farms in the County	742
Total acres operated on farms in the county	201,753
Total Cropland acres in County	170,915
Land Drained by Tile	
Number of farm operations with land drained by tile	286
Total farm acres drained with drain tile	78,500
Drain-tiled area measured in acres per farm operation	274
Land Drained by Artificial Ditches	
Number of farm operations drained by artificial ditches	123
Total farm acres drained with artificial ditches	13,310
Farm acres drained measured in acres per operation	108
Land in Conservation Easements	
Number of farm operations with a conservation easement	44
Total farm acres with easements	1,069
Farm acres in conservation easements – measured in acres per operation	24
Conservation Tillage, Including No-Till Practices	
Number of farm operations using conservation tillage including no-till on cropland.	287
Total cropland acres with conservation tillage including no-till	75,335
Cropland acres in conservation tillage including no-till – measured in acres per operation	262
Conservation Tillage, Excluding No-Till Practices	
Number of farm operations using conservation tillage excluding no-till practices.	192
Total cropland acres with conservation tillage excluding no-till practices	55,517
Cropland acres in conservation tillage excluding no-till – measured in acres per operation	289
Conventional Tillage on Cropland	
Number of farm operations using conventional tillage on cropland	105
Total cropland acres with conventional tillage	21,923
Cropland acres in conventional tillage – measured in acres per operation	209
Cover Crop Planted, (Excluding Crop)	
Number of farm operations using cover crops on cropland (excluding crop)	85
Total cropland acres with cover crop planted (excluding crop)	13,189
Cropland acres with cover crop planted (excluding crop) – measured in acres per operation	155

Source: USDA, National Agricultural Statistics Service 2022 Census of Agriculture



Commodities Produced

Farm Sales – Muscatine County farms produce a wide variety of crops and livestock. Crops make up 62% of sales, while livestock, poultry, and products make up 38% of sales. The most commonly grown crops in Muscatine County are grains like corn, soybeans, oilseeds, and dry peas. In addition to the grains grown in Muscatine County, vegetables, melons, potatoes, and sweet potatoes are also grown. Livestock is also produced at a high rate in Muscatine County. Hogs and pigs, cattle and calves, and poultry and eggs are the most commonly raised and sold livestock in the county. In 2022, the market value of products sold was \$271,312,000. With all the expenses added on, the net cash farm income was \$98,228,000 county-wide.

Table 6.8: Farms in Muscatine County by Value of Sales

Sales	Number of Farms	Percent of Total
Less than \$2,500	213	29%
\$2,500 to \$4,999	40	5%
\$5,000 to \$9,999	34	5%
\$10,000 to \$24,999	54	7%
\$25,000 to \$49,999	53	7%
\$50,000 to \$99,999	69	9%
\$100,000 or more	279	38%

Source: U.S Department of Agriculture’s National Agricultural Statistics Service (2022)

Energy Resources

The State of Iowa’s Smart Planning Principles includes the consideration for clean, renewable, and efficient energy as part of comprehensive planning. There are certain geographic limitations where wind and solar energy sites are most efficient and desired. There is a balance with also providing for productive farmland and contiguous wooded areas within the county that support agriculture and tourism. Other renewable carbon-based energy methods rely on crop production, and the non-renewable carbon-based energy resources are more limited in the county. As of the development of this plan update, the county has placed a moratorium on Commercial Wind Energy Conversion systems permitting to better understand and set policies that balance the multi-sector needs within the county.

Wind Energy – Iowa is one of the country’s top producers of wind energy. As of 2022, wind energy accounted for about 62% of the state’s electricity production, which is the largest share for any state¹⁰. However, Muscatine County is not well suited for producing wind energy. According to the U.S Department of Energy, Muscatine County has among the lowest average wind speeds in the state. As a result of these slower wind speeds in Muscatine County, it has been proposed that wind turbines are built over 650 feet in height. The higher turbine height would allow the turbine to be exposed to higher wind speeds that exist

¹⁰ U. S. EIA, Electricity Data Browser, Net generation for all sectors (thousand megawatthours), Annual, 2019-22.



higher in the troposphere, leading to more energy production. The nearest wind turbine installer would be MidAmerican Energy. MPW does not currently have any turbines, though they are investigating expansion into the field.

Solar – As of the beginning of 2024, Iowa has installed 679 MW of solar, ranking 34th out of 50 states. This amounts to around 1.35% of the total electricity generated within the state. Projections say that Iowa will install around 1,605 MW of solar over the next five years. The Solar Energy Industries Association (SEIA) estimated that there is enough solar installed in the state to power 87,775 homes. The state is home to 82 solar companies, 41 of which are installers/developers. There are 886 solar jobs in Iowa, and solar prices have fallen by 43% over the last decade. MPW is in the process of installing a solar array.

Coal – The City of Muscatine is home to the Muscatine Generating Station that utilized coal as its energy source. The station was commissioned in 1958 and had a capacity of 293.55 megawatts (MW) at full capacity. Units 7, 8, and 8A were all retired on May 31, 2023, reducing the capacity to 275.5 MW¹¹. Retiring the station aided the City of Muscatine's goal of reducing carbon emissions by at least 25% by 2024. A reduction of at least 65% is very possible by the end of the decade if Unit 9, the station's last unit, is retired. To accommodate for the retirement of those units, MPW is replacing them with a

combined Heat and Power unit (CHP) and a solar array.¹²

Ethanol – Ethanol is a renewable fuel made from plant materials. In the United States, the plant most often used to produce ethanol is corn. More than 98% of U.S gasoline contains ethanol to oxygenate the fuel. The most typical gasoline contains 10% ethanol and 90% gasoline, which reduces carbon monoxide emissions. Iowa leads the U.S. in corn and ethanol production, generating 30% of all ethanol produced in the country.¹³ Iowa's ethanol industry has 42 plants that produce more than 4 billion gallons of ethanol annually, using more than 1 billion bushels of corn in the process. Ethanol production in Muscatine County occurs at the Grain Processing Corporation, located in the City of Muscatine. The company, founded in 1927, produces ethyl alcohol for beverage and industrial use, as well as other corn-based products like maltodextrins, corn syrup solids, and starches for the food, pharmaceutical, industrial, and personal care markets.

Mineral Resources

According to the Iowa Department of Agriculture and Land Stewardship, Muscatine County has nine active mining locations.¹⁴ All nine are surface-based mining. Six are located in the southeastern part of the county, close to the Mississippi River. The primary

¹¹ Power

¹² Muscatine Power and Water. Powering the future. Accessed 9/2/24.

¹³ Rodriguez, Hannah, "No state produces more corn than Iowa. Here are more ways Iowa farmers lead the nation," Des Moines Register (December 30, 2021).

¹⁴ Iowa Department of Agriculture & Land Stewardship, Iowa Mineral Program. IDALS Minerals Map.



products mined in these locations are sand and gravel. The remaining three are located in the north central part of the county, close to Moscow and the Cedar

River. Two primarily mine limestone and agricultural lime. The final mine primarily produces sand and gravel.



Chapter 7 Transportation

Existing System

Transportation facilities in Muscatine County are multi-modal in nature, making the county accessible by air, land, and water. Alternative modes of transportation are coming to represent an increasingly important component of the nation's and Muscatine County's transportation systems. Muscatine County boasts high quality access to railroads, interstates, federal and state highways, river navigation, and recreational trails of state-wide and national significance, and a general aviation airport in Muscatine. These transportation facilities help support the movement of people and goods to support Muscatine County's economic vitality.

Highways/Roads and Bridges

Muscatine County is served by two U.S. Highway routes, Routes 6 and 61. Although the county is not home to an Interstate highway, ready access is available just north of the county line. Interstate 80 is a national east-west corridor and is essential for commerce and personal movement. Approximately 15,000 trucks daily traverse the section of I-80 just northeast of Wilton where the annual average daily traffic is 37,300 vehicles per day. Iowa State Highway 38 carries approximately 5,000 vehicles daily (2022) and connects the City of Muscatine to Wilton and I-80. Three highways designated as part of the Iowa

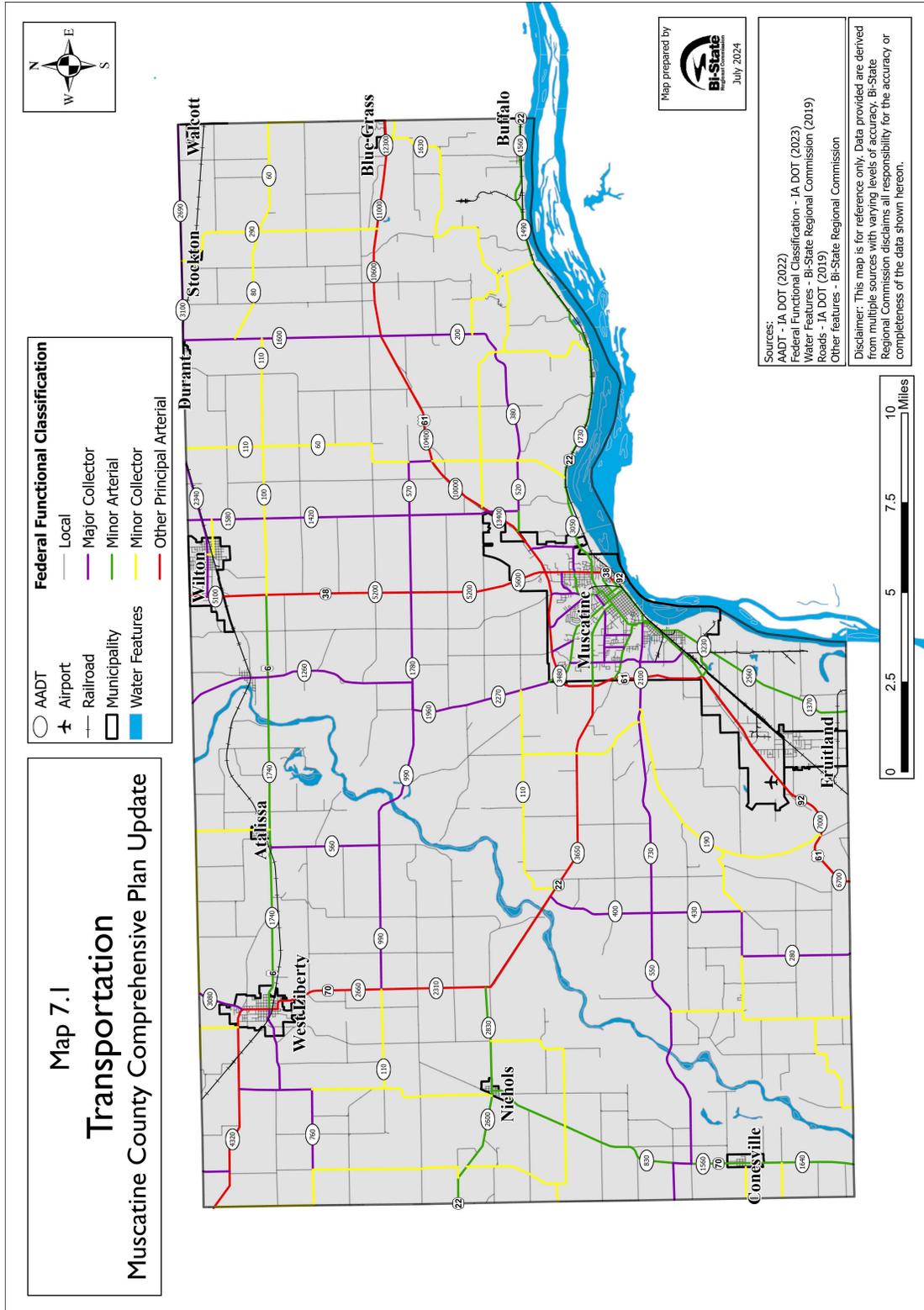
State Highway System traverse Muscatine County, Routes 22, 38, and 70. The county roads supplement the existing state and federal routes by connecting with major highways and communities in the area for shopping and shipping of farm products to markets. In 2020, there were 62,675 vehicles registered in the county.

Bottlenecks and Commodity Flow – In the 2024 Bi-State Region Freight Plan Addendum, IA-38 S (I-80 to U.S. 61) was ranked number one in the Bi-State Region for non-interstate truck bottlenecks (2022) with a total cumulative duration of 247 days, 5 hours, and 34 minutes. This is based on cumulative length of traffic queues throughout the bottleneck and weighted by the disparity between free-flow travel time and the actual observed travel time. The Iowa Department of Transportation freight plan identified IA-22 at U.S. 61 and U.S. 61 at IA-38 as freight bottlenecks as well. Truck tonnage (2022) by weight moving in Muscatine County was 15,232,220 tons with a value of \$11.3 billion dollars. The largest commodity flow is categorized as Other Industry, including agricultural production (fertilizers) and manufacturing (metals and articles of base metals) as well as other commodities. SSAB is among the prominent companies in this sector category.

Road Surfaces – While all state and federal roads are comprised of a bituminous surface, there are many

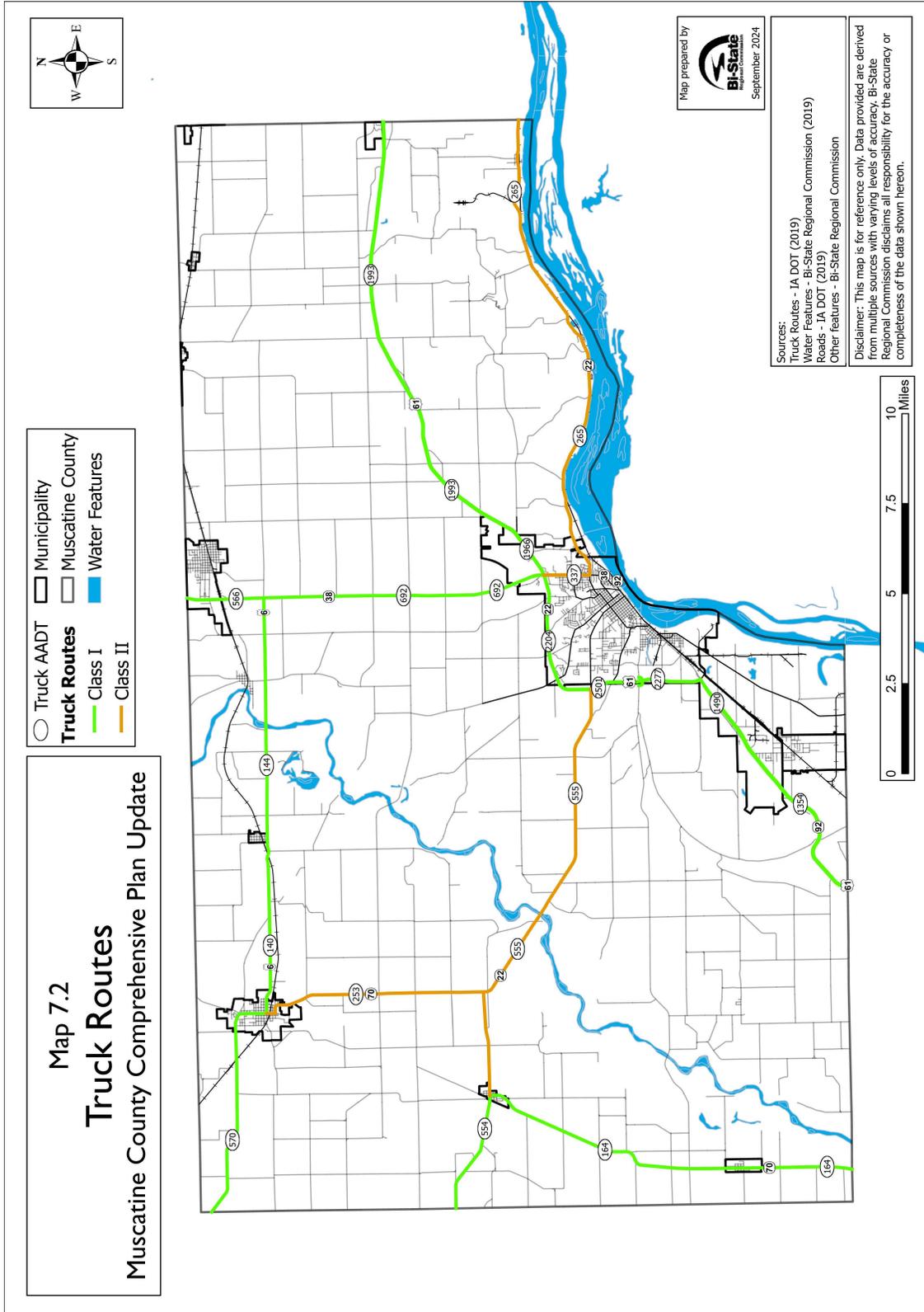


Map 7.1: Roadway Network by Federal Functional Classification with Average Daily Traffic





Map 7.2: Truck Routes and Truck Average Annual Daily Traffic



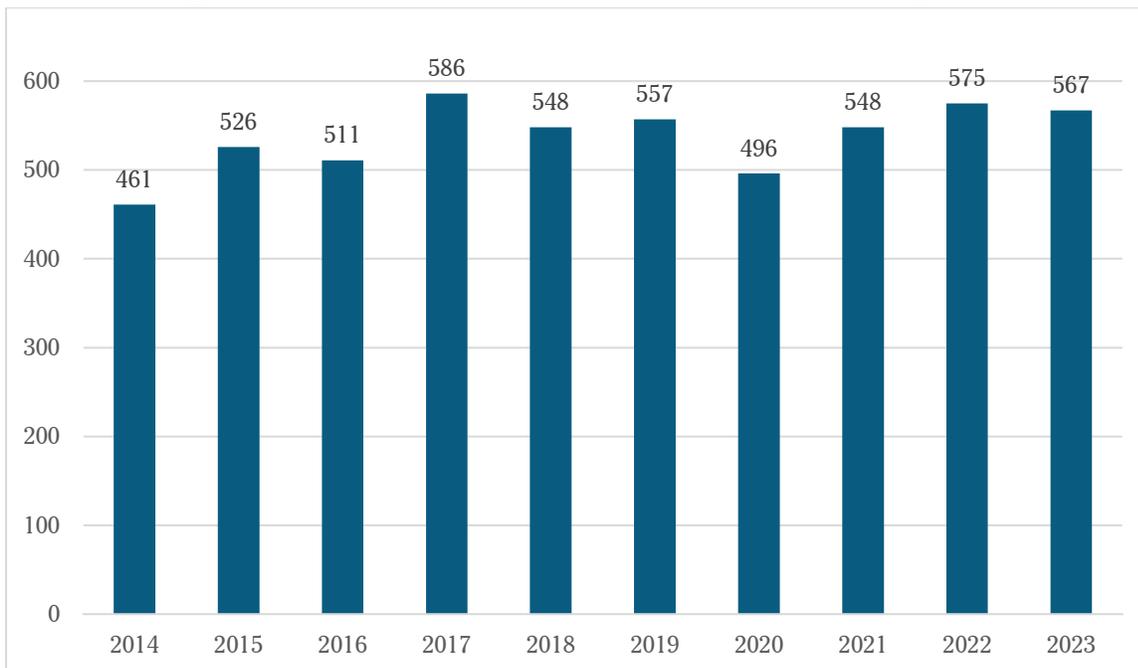


miles of rural gravel roads in Muscatine County, see Map 7.3. Gravel roads generally carry very low volumes of traffic and support surrounding agricultural uses. Gravel road maintenance involves annual upkeep to re-grade, add rock, and in some locations apply dust control measures. The county is responsible for any gravel public roads and maintains them to ensure proper function and access. The county is responsible for over 600 miles of secondary roads and over 100 bridges.

Traffic Safety – An increase in the number of highway crashes in recent years has led to a renewed effort to promote safety on the state’s highways in coordination with federal guidelines for state departments of transportation. Over the period between 2014 and

2023, the number of crashes rose from 461 to 567 (see Figure 7.1). Meanwhile, the annual number of fatalities and suspected serious injuries (also referred to as Type A Injuries) have remained relatively stable. The number of suspected serious injuries has been trending downward over the past decade, while fatalities have been trending slightly up (Figure 7.2). Map 7.4 shows the locations and types of crashes in unincorporated parts of the county. Between 2014 and 2023, 35 roadway fatalities occurred in Muscatine County. The State of Iowa has developed performance measures to monitor fatal and serious injury crashes. Reducing crashes in Muscatine County will help contribute to the zero fatalities goal of the state and improve overall safety for travelers in Muscatine County.

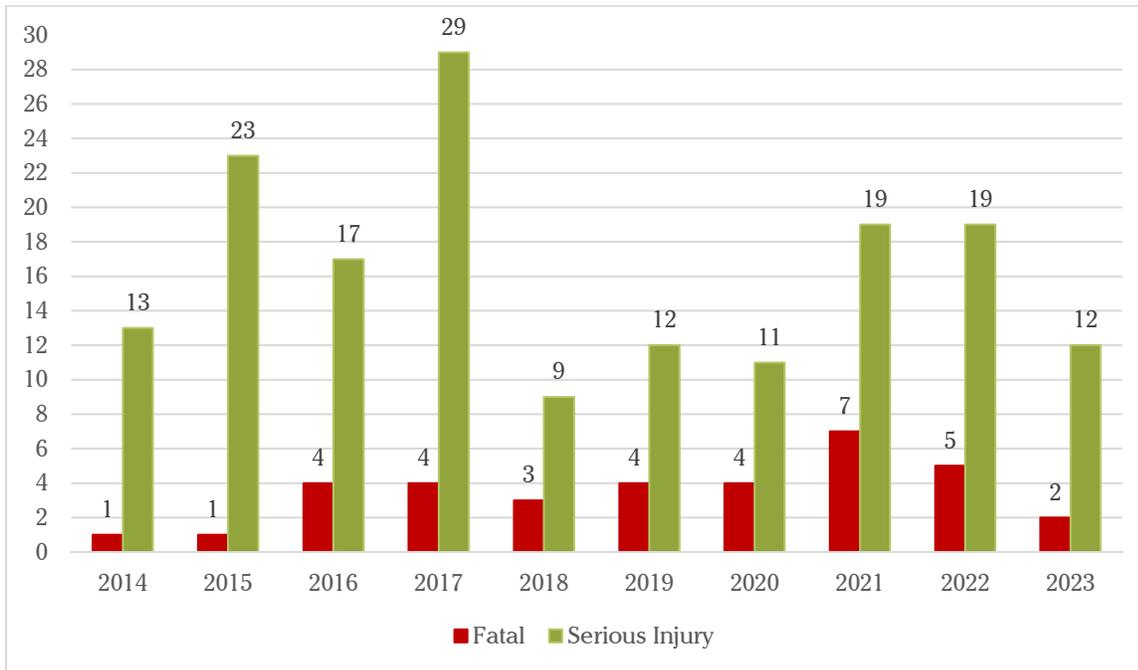
Figure 7.1: Number of Crashes in Muscatine County 2014-2023



Source Iowa DOT Crash Analysis Tool 2014-2023



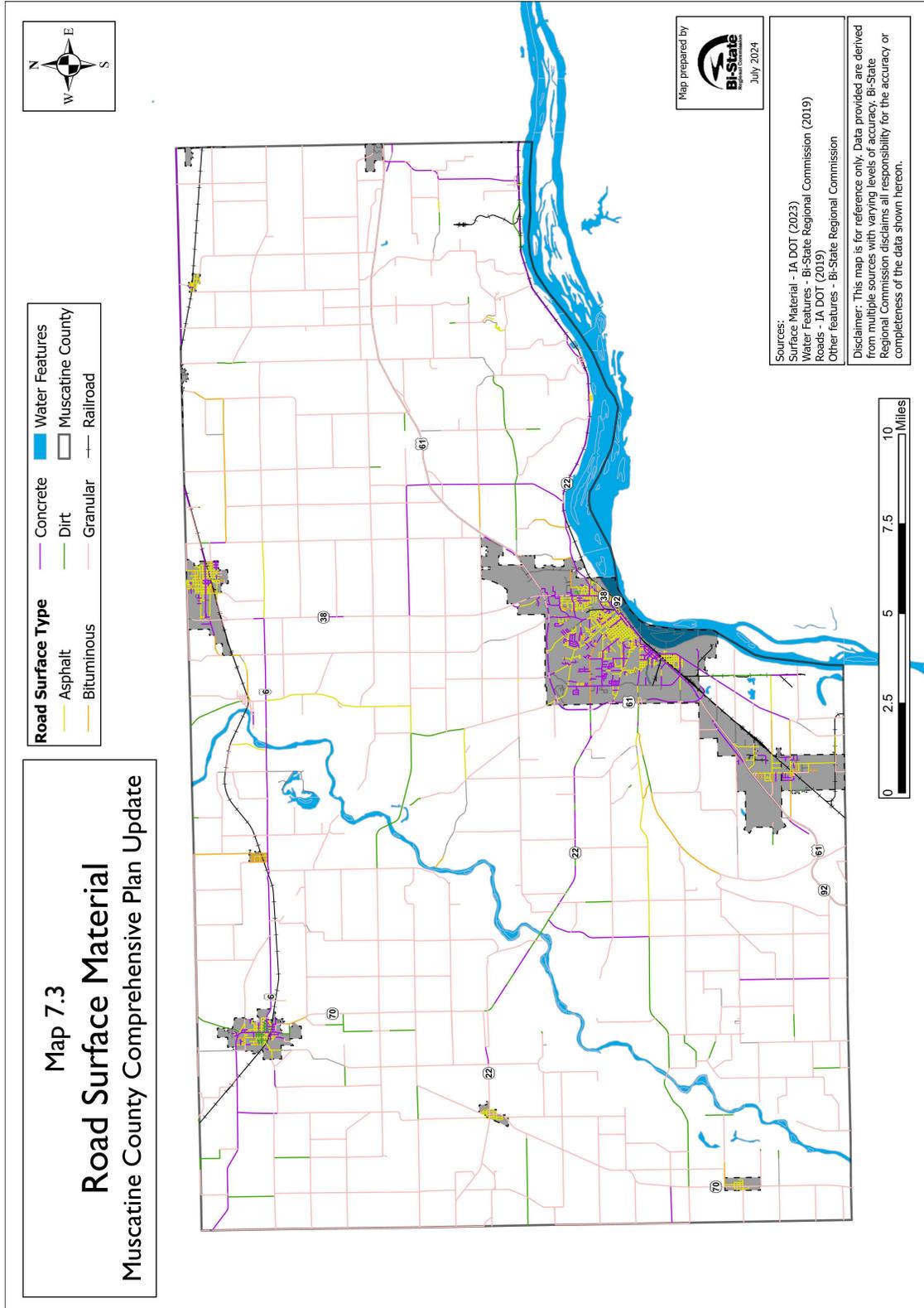
Figure 7.2: Fatal Crashes and Crashes Resulting in Serious Injuries in Muscatine County



Source: Iowa DOT Crash Analysis Tool, 2014-2023

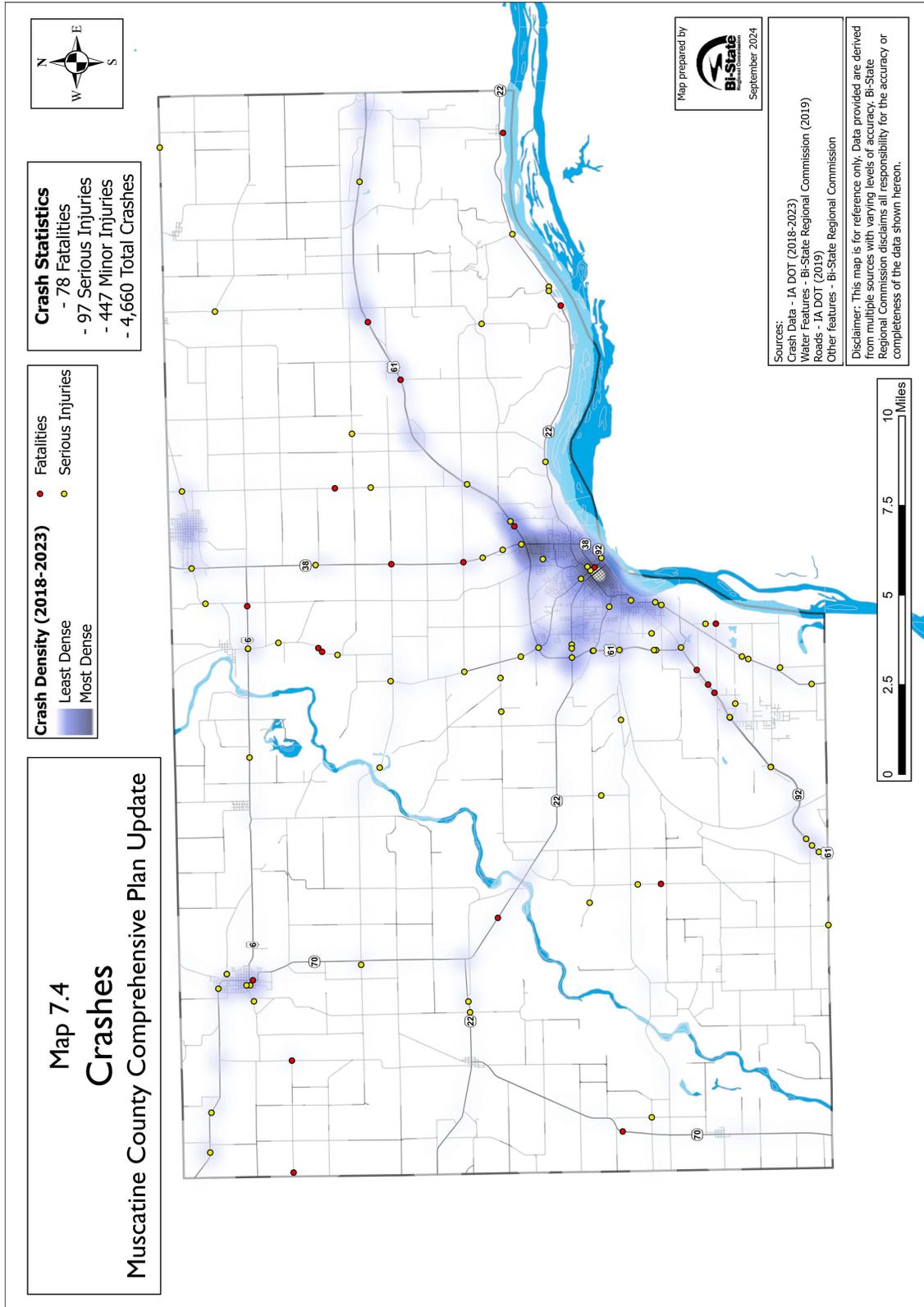


Map 7.3: Roadways by Surface Type





Map 7.4: Types and Locations of Crashes





Transit

Muscatine County is served by two public transit systems, one in the City of Muscatine and another that includes rural areas of the county. MuscaBus is a fixed-route transit system serving the City of Muscatine. It currently has four routes running on weekdays from 6:30 a.m. to 5:00 p.m. and two routes on Saturday from 8:30 a.m. to 4:00 p.m. Annual ridership for FY 2023 was 109,031.

River Bend Transit (RBT) is a not-for-profit corporation and is the state-designated regional transit provider for Muscatine, Scott, Cedar, and Clinton Counties, an area of 2,175 square miles. Like all Federal Rural Transit (5311) fund recipients, RBT must provide equal access to the general public, although services can be designated around the needs of specific population subgroups. As such, RBT's principal clients are the elderly and people with disabilities, who make up approximately 63% of riders. Annual ridership for FY 2023 within Muscatine County was 605. RBT also provides regular service from Muscatine County to Iowa City and Davenport, serving non-emergency medical trips.

Rail

Currently, there are two rail freight companies operating in Muscatine County, namely Canadian Pacific Kansas City (CPKC) Railway and Iowa Interstate Railroad. The former is a Class I railroad, and the latter is a Class II railroad. These rail companies

provide connections to regional markets and larger export facilities. There is a total of 72 public at-grade railroad crossings in Muscatine County. The locations of all of these crossings can be seen in Map 7.6. Rail serves grain facilities in Atalissa, Wilton, and Muscatine. There are two transload facilities in the City of Muscatine.

CPKC is the first single-line railway connecting Canada, the United States and Mexico. Having merged two railroads in 2023, Muscatine County is located along the primary branch line and could see an increase in trains from 7 per day to 17-22 trains per day as noted in the 2024 Bi-State Region Freight Plan Addendum. As longer and higher counts of trains care are expected, blocked crossings are anticipated to become a greater problem between rail and road traffic conflicts.

Currently, the closest passenger rail service can be found in Burlington, Iowa, and Galesburg and Kewanee, Illinois. These cities are approximately 50 to 75 miles away. There are plans to reconnect passenger rail service from Moline to Chicago in the coming years, but these remain in the engineering stage, and construction requires additional funding to complete the last one-third of the project.

Air

There is one general aviation airport located within the county. The Muscatine Municipal Airport is categorized for basic transport and has runway lengths of 4,000 and 5,500 feet.



The airport averages 39 flights per day with 32 aircraft based on the field. Reconstruction of the longer runway, along with additional airport upgrades estimated at over \$8.5 million, was completed in 2016. Nearby, the Iowa City Municipal Airport is categorized for basic transport and has runway lengths of 3,900, and 5,002 feet. There is an average of 91 flights per day with 73 aircraft based on the field. The Davenport Municipal Airport is also a general aviation airport. There are approximately 50,000 take-offs and landings annually, and there are approximately 113 aircraft housed at the facility. These three general aviation airports are considered Level II airports by the Iowa Department of Transportation; therefore, they are of national regional significance and are eligible for federal funding.

Nearby commercial aviation airports are located in the Quad Cities (Moline), Cedar Rapids, and Burlington. Muscatine County residents and businesses may use these airports for commercial air service, including both passenger and freight services. The Eastern Iowa Airport in Cedar Rapids offers five passenger carriers, including Allegiant Air, American Eagle, Delta Airlines, Frontier Airlines, and United Airlines. According to a 2024 report by the Federal Aviation Commission, there were a total of 691,084 enplanements in 2023, a 13.11% increase from the year before. The Quad Cities International Airport offers four passenger carriers, including Allegiant Air, American Eagle, Delta Airlines, and United Airlines. Total enplanements at the Quad Cities

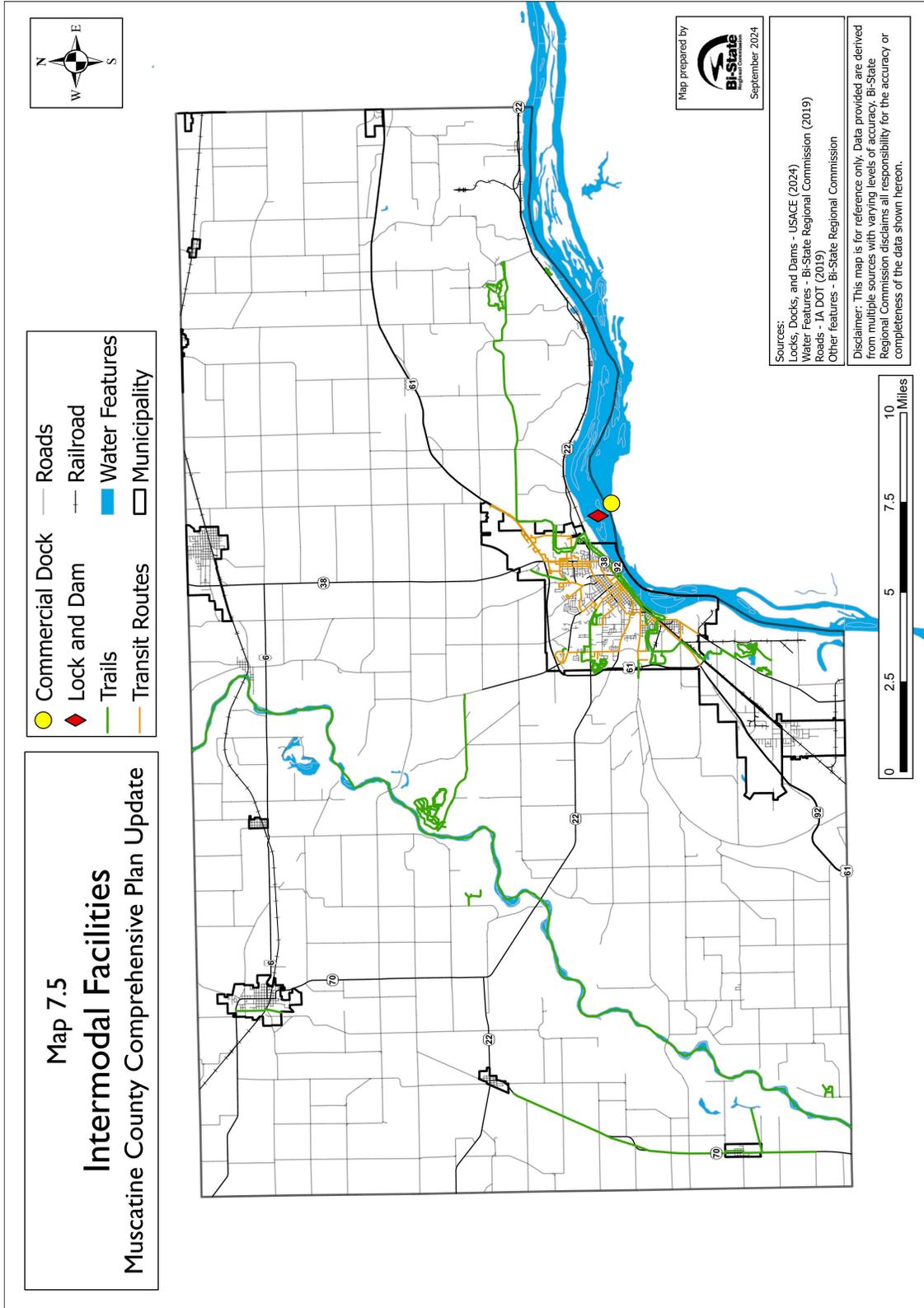
International Airport numbered 272,481 in 2023, a 0.96% increase from the previous year. The Southeast Iowa Regional Airport in Burlington is by far the smallest airport of the three, serving 4,076 passengers in 2023 to two destinations. Currently, the air freight carriers operating aircraft from the Eastern Iowa Airport include DHL, FedEx, UPS, and the U.S. Postal Service. DB Schenker, Inc. provides cargo services at the Quad Cities International Airport. The locations of these airports can be seen on Map 7.5.

Bicycle/Pedestrian Facilities

Muscatine County currently has approximately 54 miles of recreational trails, with the majority in the City of Muscatine (see Map 7.5). The Hoover Nature Trail (HNT) in the western portion of the county between the cities of Conesville and West Liberty has 13.5 miles of trail. The trail is not fully contiguous and is especially broken up around the City of Nichols. The HNT also shares a designation in locations with the American Discovery Trail, which stretches from Delaware to California. The ADT is split into two segments in the Midwest. The northern segment crosses the Mississippi at Rock Island, Illinois and travels down the Iowa portion of the Mississippi River Trail through Muscatine where it connects to the Hoover Trail. Most county trails are included on the website QCTrails.org, which was developed through a partnership between Bi-State Regional Commission and the Quad City Health Initiative to

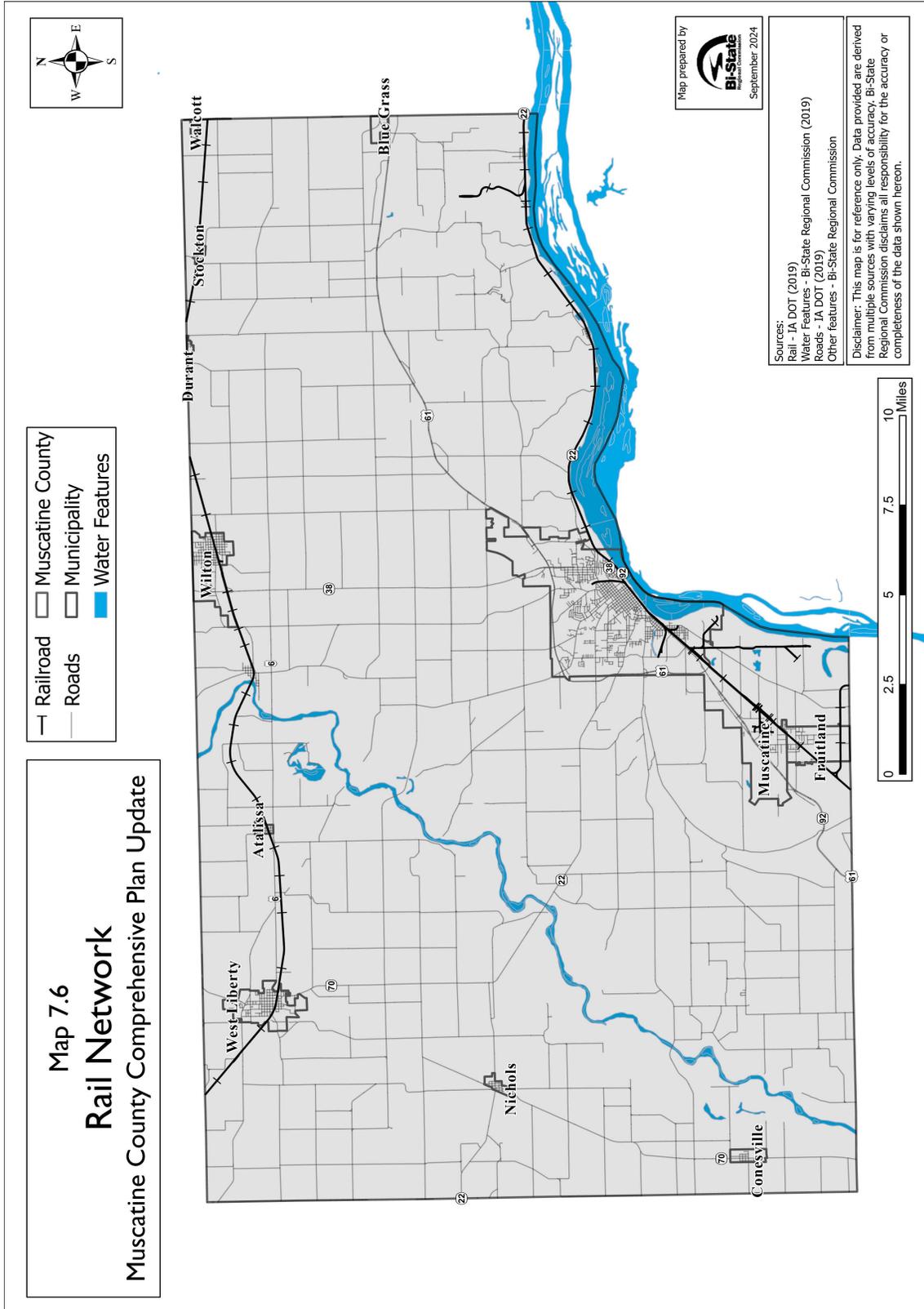


Map 7.5: Intermodal Transportation Facilities





Map 7.6: Railroads in Muscatine County





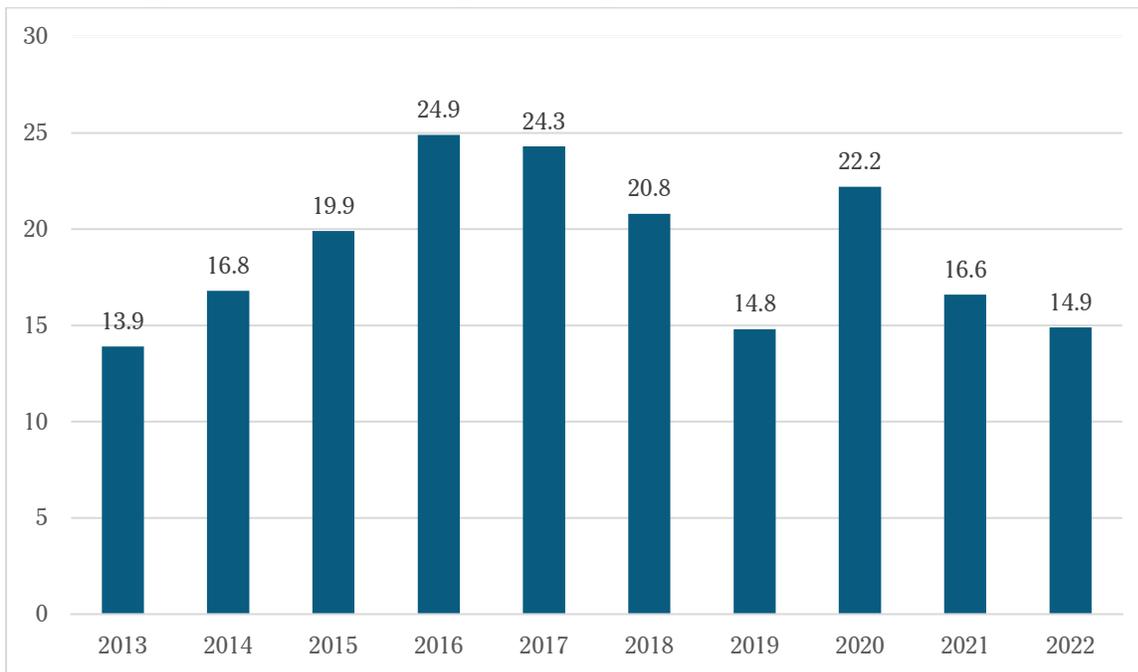
highlight hiking, walking, bicycling, and water trails in the region.

River Navigation

The Mississippi River has been a conduit and lifeline for shipping goods and facilitating the movement of people for thousands of years. Modern river navigation began in the 1930s with the construction of the Nine-Foot Channel Project. Lock and Dam 16 is the only lock and dam in the county, sitting about one river mile north of the City of

Muscatine. Water freight links Muscatine County with markets along the rest of the Mississippi River, the Gulf of Mexico, and the Great Lakes. River navigation is an important component of the freight network for bulk commodities such as grain, crude materials, and chemicals. Figure 7.3 indicates a change in shipping through the locks and dams located in Muscatine County between 2013 and 2022. A record flood, in crest height and duration, caused the large drop in tonnage that occurred in 2019.

Figure 7.3: Annual Barge Tonnage (In Millions) at Lock and Dam 16



Source: U.S. Army Corps of Engineers, 2024

Proposed System

Envisioned for Muscatine County is a multimodal transportation system that accommodates growth of industry in particular areas, while first and foremost maintaining the current

system’s level of service. The residents of Muscatine County require a complete transportation system for the movement of people and goods within and out of the county. The continued industrialization of the agricultural industry will play an important role in the future of the highways and roads



throughout the county, as farm implements and trucks to transport produce continue to grow in size and weight, increasing stress on roads.

The current system serves intercity travel adequately in all directions, though travel across the Mississippi River from Muscatine County is limited to one bridge in the City of Muscatine. The urban portion of Muscatine County falls under the Iowa Region 9 planning boundary and is included in the *Long Range Transportation Plan for Iowa Region 9*. The county should strive to mirror the goals in the Region 9 LRTP, including focusing on a transportation system that is efficient, accessible, safe, and balances the needs of the rural and urban parts of the county.

Improvements should also address extreme weather resilience impacts and mitigate for natural hazards and monitor system security needs.

Highways/Roads

The vast majority of the highway and road system in Muscatine County has already been built out. There is a need to maintain the existing facilities to an adequate level of service. Feedback from highway and road officials indicates that the level of need to reconstruct and maintain roads outweighs the amount of funding available at the county and state level. Therefore, the prioritization of projects is critical to achieving the best transportation system possible.

Criteria to address and prioritize future road improvements may include the following:

- **Accessibility:** Driveway access to public roads should be carefully designed and considered for proximity to intersections and other driveways, for traffic volume, and for safety and conflicts with pedestrians or bicycles. These specifications should be reflected in subdivision ordinances or design specifications.
- **Safety:** Number of crashes, crash severity and crash rates may be used to evaluate need for improvements. Separating heavy-duty truck traffic from primarily residential traffic may be accomplished using a truck route to further safety concerns.
- **Level of Service:** Traffic volume and volume to capacity on a roadway may be used to evaluate the need for street improvements. Traffic signals or other engineering solutions, such as roundabouts, may be warranted under certain traffic flow conditions.
- **Surface Condition:** The condition of the pavement is another criterion that can be used to evaluate and prioritize street improvements. Scott County participates in the statewide pavement management system. Map 7.7



shows a level of need based on surface condition.

Road Condition – The condition of roads in the county varies from good to poor on state and county-owned roads (Map 7.7). There is an evident need for expanded roadway and bridge maintenance funding. Long-term effects of more fuel-efficient vehicles and the collection of fuel taxes will have to be examined and accounted for in future funding cycles. The wise and efficient use of limited funds is critical to deliver the best system possible.

Traffic Safety – The Iowa Service Bureau is working with all 99 counties on traffic safety planning under a federal Safe Streets and Roads for All grant. The Iowa DOT sets fatality and serious injury targets to achieve statewide reductions. Efforts at the county level to reduce fatal and serious injury crashes will contribute toward the state’s aspirational goal of zero fatalities and serious injuries. The Federal Highway Administration advocates a safe system approach recognizing deaths and serious injuries are unacceptable, humans make mistakes, humans are vulnerable in crash situations, redundancy is crucial, safety is proactive, and responsibility is shared. As part of road/bridge improvements, consideration of safety countermeasures is an important component of supporting the Vision Zero movement in the state and nationally.

Scenic Byway – Muscatine County is also home to the Great River Road National Scenic Byway. The Great River

Road is a collection of state and local roads that run the course of the Mississippi River from the Headwaters to the Gulf of Mexico. Further marketing and beautification along this corridor may help with expanding local tourism and growing the local economy. Coordination with neighboring counties along the river will promote a cohesive plan and vision for the corridor to ensure multi-modal access and enjoyment of the river.

Transit

The current transit system in Muscatine County is to be maintained at a sufficient level to meet the needs of current residents. MuscaBus services are open to the general public, with 12% of its clients being elderly and 46% having a disability. Providing adequate services to these populations in particular is important to the overall success and efficacy of the system. As noted in the Bi-State Regional Commission’s Transit Development Plan (TDP), non-emergency medical trips are growing in importance and demand for public transit agencies in the region. As the demographics of the region continue to transition to an older population, medical trips on public transportation will also continue to grow in importance for residents of Muscatine County.

Also stated in the TDP, Muscatine County is home to numerous large employment centers. Transportation to and from these centers will be critical to help improve the air quality in the region, which currently experiences



occasional exceedances of the EPA's fine particulate standards. Educating the public on the reduction in single-occupant vehicles via public transit usage will likely be a priority as measures to reduce fine particulate and ozone pollution continue.

Bicycle/Pedestrian Facilities

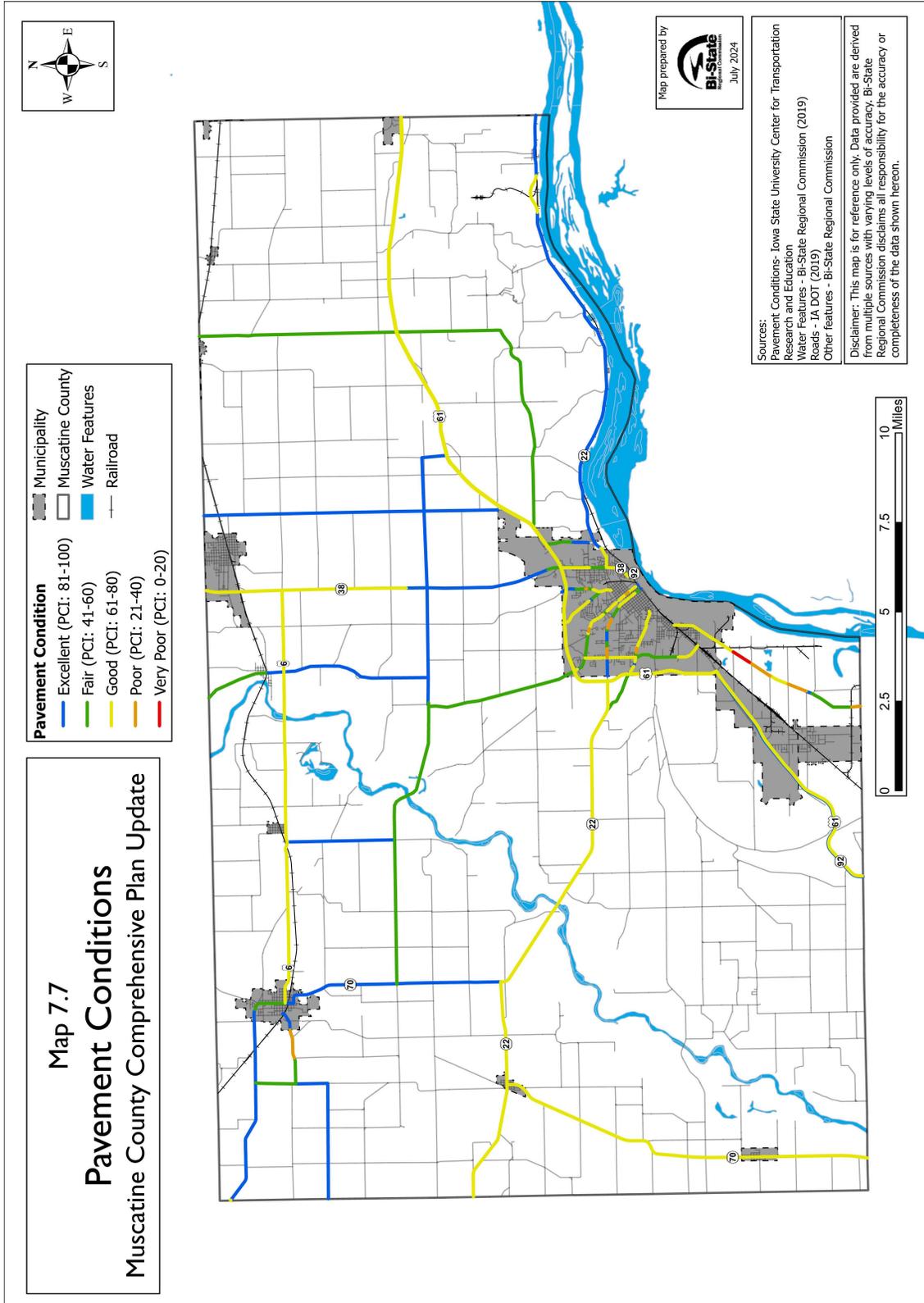
Two national bicycle trails run through Muscatine County, the American Discovery Trail (ADT) and the Mississippi River Trail (MRT). The paved trail portion of the MRT is proposed to be extended from Y40 West of Buffalo to Wildcat Den Road in Muscatine County. Much of this extension is proposed to be a separated trail along Highway 22. With numerous recreational areas and Wildcat Den State Park near the trail, a further extension of the trail is warranted, perhaps, to connect with the City of Muscatine's system of recreational trails. The benefits of increased

connections to recreational areas will affect tourists and residents alike, increasing the accessibility for various kinds of outdoor recreation, such as snowmobiling, cross-country skiing, and horseback riding.

As mentioned in the "Highways and Roads" section above, The Iowa Department of Transportation's policy is to install shoulders along rural highways during reconstruction projects where feasible. This provides an opportunity for increased bicycle facilities throughout the rural portions of Muscatine County. This wide shoulder provides touring bicyclists enough room to traverse rural roads safely. Extended rural intercity routes utilizing highway shoulders could close the gaps in national trail routes between municipal trail systems. A Muscatine County Trails Plan further outlines non-motorized trail plans within the county and should be reviewed when considering transportation improvements.



Map 7.7: Pavement Conditions by Pavement Management System





Chapter 8 Recreation and Conservation

Muscatine County is home to numerous significant parks and recreational opportunities. While many parks are located in the City of Muscatine, there are a handful of larger parks dispersed throughout the county that offer a wider assortment of amenities than their smaller, urban counterparts.

Recreational opportunities allow residents and visitors to participate in healthy and environmentally-friendly activities. According to the Center for Disease Control and Prevention (CDC), “People who have more access to green environments, such as parks and trails, tend to walk and be more physically active than those with limited access. The closer people live to a park and the safer they feel in the park, the more likely they are to walk or bike to those places and use the park for physical activity. This is why access to parks and trails is so important.”¹⁵

Social Benefits

As a nation, Americans are growing increasingly aware of the benefits that can be gained through outdoor recreation, exercise, and leisure activities. Public interest in recreational facilities, outdoor leisure activities, recreational tourism, and a variety of physical fitness opportunities is evident in Muscatine County, such as active recreation clubs and participation in

summer educational programming through the Muscatine County Conservation Board (MCCB), and can be sustained with adequate and diverse facilities suited for such activities.

“Parks promote health by serving as an ideal venue for physical activity, helping to reduce obesity and the risk of numerous diseases. Additionally, spending time in natural areas, whether walking or reflecting in a garden, is a powerful strategy for improved physical and mental health. There is a vast body of evidence documenting the health benefits, ranging from reduced anxiety and depression to improved birth outcomes. Lastly, parks provide a platform to bolster social connections through both structured group activities and informal encounters. Social connections improve health, as people who are lonely are more likely to get sick and die younger”. (Trust for Public Land, 2024)¹⁶

According to the Centers for Disease Control and Prevention (CDC), approximately 73.6% of American adults in 2020 were overweight or obese. The portion of children who are obese has grown dramatically over recent decades and now stands at 20.7% for children ages 6 to 11, and 22.2% for adolescents age 12 to 19. If trends continue, one-third of people born in 2000 are expected to become

¹⁵ Active People, Healthy Nation: “Parks, Recreation, and Green Spaces.” *National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)*. February 6, 2024.

¹⁶ Foderaro, Lisa W and Will Klein. “The Power of Parks to Promote Health: A Special Report.” *Trust for Public Land*. May 24, 2024.



diabetic. According to Iowa's Health and Human Services in 2024, 38.6% of adults age 20 years or older in Muscatine County were obese, compared to 36.3% in all of Iowa¹⁷. All of these issues are closely tied to one's quality of life. It is important that the residents of Muscatine County have access to the necessary facilities to support individuals who are striving for good health and well-being.

According to the National Recreation and Park Association:

- Children who live within two-thirds of a mile from a park with a playground are five times more likely to be a healthy weight. Time spent outside leads to higher levels of physical activity in children.¹⁸
- Active children show more brain activity and are 20 percent more likely to earn a better grade in English or math.¹⁹
- Use of green space is associated with decreased health complaints and improved levels of blood pressure, cholesterol and stress. The risk of cardiovascular and respiratory disease mortality in men

decreased with more access to green urban spaces.²⁰

- Physician-diagnosed depression was 33 percent higher in the residential areas with the fewest green spaces, compared to the neighborhoods with the most.²¹
- Studies have confirmed that separation from nature is detrimental to human development, health, and wellbeing, and that regular contact with nature is required for good mental health.²²

Economic Benefits

Economic benefits can be derived through outdoor recreational facilities in a variety of ways. According to the *Iowa Department of Natural Resource's 2023 Statewide Comprehensive Outdoor Recreation Plan*, outdoor recreational activities added around \$4.6 billion to the GDP of Iowa and around 43,900 jobs in 2022.²³ This survey provides insight into the importance of outdoors-based recreation and tourism to the Iowa economy and, therefore, to Muscatine County's economy. Keeping Muscatine County's maintenance of recreational facilities is important to make sure that the county is able to capture its share of recreational dollars.

¹⁷ HHS System Snapshot for Muscatine County. *Iowa Department for Health and Human Services*. January 17, 2024.

¹⁸ National Environmental Education Foundation. Infographic: Children & Nature

¹⁹ Nelson MC, Gordon-Larson P. (2006). Physical activity and sedentary behavior patterns are associated with selected adolescent health risk behaviors. *Pediatrics*, 117: 1281-1290.

²⁰ Making the Case for Designing Active Cities, Active Living Research (King's Fund, 2013), 2015

²¹ Making the Case for Designing Active Cities, Active Living Research (NRPA Report, 2010), 2015

²² Making the Case for Designing Active Cities, Active Living Research (Maller, 2008), 2015

²³ "Outdoor Recreation in Iowa: Statewide Comprehensive Outdoor Recreation Plan" Iowa Department of Natural Resources. December 2023.



Additional upgrades and expansions may be a way to increase this share.

The county also gains economic benefits from recreational facilities by its ability to attract and retain employees and members of the retired community, a demographic that will increase over the coming years. The availability of park and recreation facilities is an important quality-of-life factor for corporations as well in choosing where to locate facilities and for well-educated individuals choosing a place to live. One study found that homeowners can see an increase in property value anywhere between 8% and 20% when the property is within a half mile of a park²⁴. Comments at county public meetings stressed the importance of ensuring young people had quality parks and recreational facilities.

County Recreation Facilities

From passive wildlife areas with few or no amenities to well accommodated

camping facilities and a historic mill, Muscatine County offers residents and visitors a diverse inventory of activities and educational opportunities. Users are offered experiences including camping, fishing, hunting, boating, kayaking, and public programs. Facilities include a historic cemetery, a vintage grist mill, and a donated former industrial site that is now the site of 120 acres of clearwater lakes.

See Table 8.1 for a list of facilities and **Map** for their location within the county. While not all facilities are open to the public, namely Pecan Grove State Reserve, they still offer wildlife habitats beneficial to sportsmen elsewhere in the county. In addition, there are 10 recreational boat ramps, with five being on the Mississippi River and five on or near the Cedar River. The Muscatine County Conservation Board is responsible for maintaining county parks. An updated strategic plan could provide guidance to the board to meet current and future park needs in the county.

Table 8.1: Muscatine County Recreation Areas

Muscatine County Conservation Board Areas	Acres
Cedar Bluffs Recreation Area	176
Deep Lakes Park	435
Discovery Park	85
Gedney Lake	18
Jack Shuger Memorial Park	4
McKeown Bridge River Access	7
Nye Cemetery	1
Pike Run Wildlife Area	182
Richardson Wildlife Area	77
Saulsbury Bridge Recreation Area	675

²⁴ Wolf, K.L. 2010. Community Economics - A Literature Review. In: Green Cities: Good Health. College of the Environment, University of Washington.



Muscatine County Conservation Board Areas	Acres
Shield Prairie	80
State-Owned Areas	Acres
Fairport State Recreation Area	17
Pecan Grove State Reserve	23
Wildcat Den State Park	423
IDNR Management Areas	Acres
Cedar Bottoms	1,643
Red Cedar Wildlife Area	786
Wiese Slough State Game Management Area	1,871
US Army Corps of Engineer Operated Facilities	Acres
Shady Creek Recreation Area	22
Clark's Ferry Recreation Area	11

Wildcat Den State Park is one of the most popular attractions in the county. The 423-acre state park includes a trail system that leads visitors through canyons and sandstone cliffs. The park also includes around 20 campsites, the Pine Creek Grist Mill, which is the oldest working grist mill between the Mississippi and the Rockies, and the Devil’s Punch Bowl, a waterfall that only flows after heavy rain events.

The newest addition to the county’s parks is the 435-acre Deep Lakes Park located south of the City of Muscatine. The former sand and gravel pits were donated to the Conservation Board by the W.G. Block Company. Activities at Deep Lakes Park include fishing, hiking, nature study, canoeing/kayaking, and swimming. The park has restrooms, boat ramps and fishing docks on Lake Chester and Lake Jewell, about 1.5 miles of paved trails for walking and biking, and rental cabins. The four rental cabins are modern facilities with heat and air conditioning, dining tables

and chairs, sofas, recliners, TVs, Wi-Fi, decks, and fire pits.

Another Conservation Board facility, Discovery Park, is the Environmental Learning Center. This is 10,500 square foot facility with offices, natural history exhibit space, and classroom/meeting space. The building includes two 1,200-gallon aquariums full of native fish, natural history exhibits featuring the change in habitat and wildlife in Iowa, live snakes and turtles, interactive hands-on displays, hundreds of mounted animals, a Certified Monarch Waystation, kids’ exploration area, outdoor live raptor enclosure, and Mr. Bakke’s Book Nook. The facility also includes an accessible fishing dock, a shelter for picnics, and access to Discovery Park’s trails.

Hunting and Fishing

Muscatine County falls under the Iowa Department of Natural Resources for hunting and fishing licenses. Those wishing to participate can buy a fishing license online at the IDNR website or at



authorized vendors. These may vary and can be checked on the IDNR website. Even with a license, anglers should be aware of any catch limits that exist for whatever they are fishing for. These can vary year to year, but again are kept updated on IDNR’s website.

Any hunter in the state of Iowa, resident or non-resident, born after January 1, 1972 must satisfactorily complete a hunter education course in order to obtain a hunting license. A person who is 11 years or older may enroll in a course, but those who are 11 years old

and have successfully completed the course should be issued a certificate of completion that becomes valid on the child’s 12th birthday. The MCCB offers a hunter education class, and helps to locate other nearby classes. Hunting licenses can purchased on the IDNR website or at authorized vendors. Table 8.2 shows a list of public hunting grounds in Muscatine County. The most popular game species in Iowa are deer, pheasants, quail, cottontail rabbits, turkeys, and squirrels. Both the MCCB and IDNR websites post the annual hunting dates.

Table 8.2: Muscatine County Public Hunting Areas

Name	Acres
Cedar Bluffs Recreation Area	176
Cedar Bottoms Wildlife Area	1,643
McKeown Bridge River Access	7
Pike Run Wildlife Area	182
Red Cedar Wildlife Area	786
Richardson Wildlife Area	77
Saulsbury Bridge Recreation Area	675
Shield Prairie Wildlife Management Area	80
Wiese Slough Wildlife Area	1,871

Source: Iowa Department of Natural Resources

Camping

Campgrounds in Muscatine County are located at Saulsbury Bridge Recreation Area, Wildcat Den State Park, Fairport Recreation Area, Shady Creek Recreation Area, and Clark’s Ferry Recreation Area. The Muscatine County Conservation Board’s Saulsbury Bridge Recreation Area has three campgrounds each managed under a self-registration system. The main campground has 50-amp electric power

access, a shower house, and a firewood shed.

The Iowa Department of Natural Resources’ Wildcat Den Park offers a primitive campground with no electrical service or showers. However, the campground does have water and vault toilets.

Fairport Recreation Area has campsites with river views and modern amenities like electrical hook-ups and up-to-date restrooms and showers. Reservations for both of these camping areas are



made online through IDNR's registration system.

The Army Corps of Engineers' Shady Creek Recreation Area provides electric hookups along with fire pits, picnic tables, flush toilets, and showers. Another USACOE facility, Clark's Ferry Recreation Area, provides vault toilets, showers, electric hookups, volleyball courts, horseshoe pits, and fire pits.

Canoeing and Kayaking

Muscatine County Conservation has 10 canoes and 15 kayaks available for paddling trips in Muscatine County. Reservations must be made at least three days in advance of the desired trip date. A canoe drop-off is available on the Cedar River from Saulsbury Bridge Recreation Area to Jack Shuger Memorial Park. This 9-mile float takes approximately 3 hours. A minimum of 4 canoes must be reserved. The county delivers the boats, people must shuttle themselves. Trips depart Saulsbury at 9:00 am and paddlers must return by 3:30 pm and load their boats. When the water level of the Cedar River at Conesville is below 6 feet or above 9 feet, shuttles do not run.

Six (6) kayaks are available for rent. They can be rented at Deep Lakes Park in conjunction with cabin reservations, or at the Lake Chester boat landing. Kayaks can be used anywhere and are hauled by the borrower to the location. Canoes are \$25/boat and hold 2-3 people; kayaks are \$20/boat and hold one person. Rentals come with paddles and life jackets. Contact Muscatine

County Conservation to check on availability at 563-264-5922.

Trail System

Multipurpose trails offer recreation options for biking, jogging, and walking in and around Muscatine County. Within the county, there are approximately 54 miles of total trails. The county has three types of trails, including mixed traffic, physically separated, and visually separated. The physically separated trails are only for non-motorized traffic. Visually separated trails allow for both motorized and non-motorized traffic, but the traffic types are separated by a rumble strip or another type marking that is clearly visible. Mixed traffic trails also allow for both motorized and non-motorized traffic with limited notification, such as a sign.

The longest stretch of trail in Muscatine County is the Hoover Nature Trail (HNT) in western Muscatine County. Currently, there are portions of the trail that are complete, although they are not all contiguous with one another.

The Muscatine Countywide Trails Plan (2019) proposed additional trails across the county. A robust countywide trails network provides for the economic and social benefits mentioned previously by offering accessibility to county residents and intercity touring cyclists between communities. Interest and support for trails and alternative modes of transportation are growing on an international scale. *The Muscatine Countywide Trails Plan* advocates for



an interconnected trail system that offers safe and convenient options to county residents to improve the overall quality of life in the area. The trails that are proposed to be created or extended are:

- Mississippi River Trail (MRT)
- Iowa City Connector
- American Discovery Trail (ADT)
- Wilton-Durant Community Connector
- Hoover Nature Trail (HNT)
- Wilton-Moscow Community Connector
- South Iowa Spur of the ADT
- Cone Lake Spur
- Taylor Avenue Route
- Saulsbury Bridge Spur
- Moscow Road Route
- Atalissa Spur
- Burlington Road Route/Loop
- Fruitland Road Link
- Independence Avenue Route
- Muscatine Urban Loop
- F70 Trail Link

Golf

According to the American Golf Industry, around 1 in 7 Americans played golf in 2022 resulting in \$101.7 billion in direct economic impact²⁵. Muscatine County is home to three golf courses: the Geneva Golf and Country Club, the Muscatine Municipal Golf Course, and the West Liberty Country Club. Muscatine Municipal is always open to the public. West Liberty

Country Club is semi private, meaning it is open to the public, but members will always have priority as far as tee times. Geneva Golf and Country Club is a private club where only members have access to the golf course.

Community Input on Recreation

Citizens of Muscatine County are very interested in better utilizing the Mississippi River as a form of recreation. Citizens used the Port of Dubuque as an example of something they would like to see in the county. The recreational entities currently in the Port of Dubuque are the Port of Dubuque Marina, Grand Harbor Resort and Waterpark, National Mississippi River Museum and Aquarium, and the Mississippi River Walk. The Port of Dubuque is a significant tourist attraction and continues to see more development. The community also expressed that they want to use the county's water features for kayaking tours, boat rentals, and rafting. The county does offer some canoeing and kayaking opportunities that can be found in the "Canoeing and Kayaking" section. Community members also wanted to see several other things including: Hoover trail enhancement; mountain biking opportunities in hilly areas; the connection of existing links of trails, especially between communities; the use of Cedar River bottom land for flat trail development; and camping facilities.

²⁵ LoRé, Michael. "More Americans playing golf than ever before." *PGA Tour*.



Chapter 9 County Facilities and Services

This chapter contains information on water supply systems, sanitary sewer and wastewater treatment systems, gas and electric utilities, communications, public safety and emergency services, health and human services, and planning and development within Muscatine County.

Muscatine County Facilities

Water Supply Systems – Atalissa, Durant, Nichols, Stockton, Walton, Walcott, West Liberty, and Wilton all have municipal-run water supplies. The City of Muscatine uses the Muscatine Power and Water Company. Blue Grass's water is supplied by Iowa American Water. Homes that are outside of a municipality's service area use wells.

Sanitary Sewer Systems and Waste Water Treatment – Municipalities operate sewage systems in Muscatine County. According to the Iowa DNR, a properly designed, sized, installed, and maintained on-site wastewater treatment system should safely remove and treat wastewater from a home. Untreated or improperly treated wastewater is a disease risk to people through direct contact with sewage or animals (flies, dogs, cats, etc.) that have been in direct contact with sewage. Also, untreated or improperly treated wastewater is a threat to human health and the environment when it pollutes surface water or groundwater.

Poorly functioning on-site wastewater treatment systems also can affect the surrounding environment. On-site systems can release nitrogen from human waste into groundwater and surface water. They also can release phosphorous, found in some household detergents and water conditioners, as well as human waste, into surface water. These nutrients promote algae and weed growth in lakes and streams. These plants eventually die and settle to the bottom where they decompose. This decomposition process depletes oxygen that fish and other aquatic animals need to survive, which may result in the death of fish and other aquatic organisms. Cleaning products, pharmaceuticals, and other chemicals dumped down the household drain also enter the wastewater treatment system. Some of these materials can be dangerous to humans, pets, and wildlife. If allowed to enter a system, many of these chemicals will pass through without degrading and may contaminate groundwater, surface water, and/or soil.

The rural areas of Muscatine County rely on private, on-site septic systems for sewage disposal. In Iowa, it is the County Board's responsibility to provide regulation of sewer systems serving four homes or less than 15 people. The Muscatine County Health Department regulates the design, construction, and installation of all private, on-site treatment systems; samples private, on-site treatment systems; and aids with



complaints relating to sewage treatment and disposal systems.

Waste Management

Sanitary landfills – The Muscatine County landfill is the only active landfill in the county. It is located on Highway 61 N, near Stockton, Iowa. The landfill has approximately 150 acres of landfill in use.

Waste Collection – Municipalities operate garbage collection services. There are a number of private waste collection services available in the county as well.

Recycling – The county itself does not have recycling services, but multiple municipalities have on-site recycling centers that allow drop-offs from citizens. The Muscatine Recycling Center and Transfer Station, located at 1000 S. Houser St., Muscatine IA, also allows for residents to drop off their recyclables, so long as they match what the facility can process.

Utilities

Electricity and Natural Gas – Electricity and natural gas services are provided at a municipal level, not as a county service. Muscatine County is served primarily by six utility companies: Muscatine Power and Water, MidAmerican Energy, Alliant Energy, Durant Municipal Electric, Wilton Municipal Light and Power System, and Eastern Iowa Light and Power Coop (REC).

Propane is used in rural areas of Muscatine County not served by natural

gas. The propane is used for heating and drying of farm products. Propane is stored in above or below-ground tanks.

Renewables – There has been an increase in renewable energy sources throughout the United States. In 2022, wind energy accounted for about 62% of the state's overall electricity production. Muscatine County is no exception, and both the county and residents have opportunities to consider expansion into this area. The county has been approached by several energy companies, such as Duke Energy, in potential wind energy projects. Currently, there is a moratorium on any wind energy projects through October that was put into place in January. Several of the energy companies that serve the county offer connection services for residential solar panels.

Pipelines – Pipelines provide a relatively low-cost method of transporting bulk commodities that are often classified as hazardous materials. These facilities commonly bisect urban areas across a variety of land uses, from agricultural to residential. The relationship between land use and transportation is particularly critical for pipelines. Distribution of energy fuels by pipeline is widespread across the United States. As urban areas grow and develop, the need for fuels and access to pipelines also increases. Land use around pipelines then becomes important for public safety and the environment. Large diameter, high-pressure transmission pipelines, although benefiting an urban area economically, can pose significant public safety and environmental



consequences without knowledge of their location and the risks associated with them.

The U.S. Department of Transportation (DOT), Office of Pipeline Safety, regulates pipeline safety. The Pipeline Safety Improvement Act of 2002 required the DOT and Federal Energy Regulatory Commission (FERC) to conduct a study of population encroachment on rights-of-way. Ultimately, a report was published called the *2004 Transportation Research Board Transportation Pipelines and Land Use: a Risk-Informed Approach Special Report 281*. The report concludes that judicious land use decisions can reduce the risks associated with transmission pipelines through land use policies affecting siting, width, and other characteristics of new pipeline corridors and new development areas encroaching on existing corridors.

Communications – The county has three official newspapers, designated by the board of supervisors. These are the Muscatine Journal, the West Liberty Index, and the Wilton-Durant Advocate News.

- Television Stations: ABC, CBS, NBC, FOX, PBS, plus educational & digital cable.
- Cellular Service: US Cellular, T-Mobile, AT&T, and Verizon. Other carriers typically “piggy-back” of these major networks, like Cricket Wireless, Boost Mobile, and Metro, among others.

Muscatine County Services

Animal Control – Muscatine Humane Society is located at the Nancy E. Kent Animal Shelter. The shelter building and its contents were donated by Nancy E. Kent, and opened in July 1996. The shelter works to protect stray, injured, abused, and unwanted animals, has the capacity to house 85 to 100 animals, and runs entirely off of donations.

Assessor’s Office – This office is responsible with assessing all real property, including residential, commercial, industrial, and agricultural properties in their jurisdictions. The office keeps and maintains information on each parcel to assist in the assessment process. This information includes owner name and address, property sales data, exemptions from property taxes, and parcel maps. They also keep information on the physical characteristics of the property including building square footage, age, condition, number of plumbing fixtures, photos, and sketches.

Attorney’s Office – In Muscatine County, this office is the chief prosecutor and chief law enforcement officer in the county. The Attorney’s Office also provides legal advice on county matters for the Board of Supervisors and county officials and represents the county in court as needed.

Auditor’s Office – This office serves as the Clerk to the Board of Supervisors and the Commissioner of Elections. Additional duties include providing



alcohol licenses and cigarette permits for businesses in unincorporated areas of the county, certifies tax levies, oversees accounts payable and payroll for the county, and is in charge of real estate transfer records.

Board of Health (Health Department) – Muscatine County contracts public health services through Trinity Muscatine. Services include conducting a county-wide health needs assessment every five years, providing immunizations, treating communicable diseases, screening for lead poisoning, well-child exams, prenatal education, and assuring that legislative mandates and statutory responsibilities are implemented.

District Court – Muscatine County is part of Iowa’s 7th Court District. The court is located in Scott County.

Court Services – This department establishes and maintains positive relationships with the judiciary, prosecutors, attorneys, correctional staff, police officers, and many other community support organizations.

Medical Examiner’s Office – The primary function of the Muscatine County Medical Examiner Department is to determine a scientifically based cause and manner of death for every death that falls within its jurisdiction.

County Board and Administration Office – The administration office assists the Board of Supervisors in developing and implementing county policies and procedures, routing correspondence to and from the Board, scheduling and providing materials for

Board meetings, and has oversight of maintenance, custodial, and capital projects in the county. The administration office also performs risk management and budgetary functions for the county.

County Clerk – The main responsibility of this person is managing and maintaining all trial records filed in the county. Additionally, this person accepts and processes fines, fees, and court costs owed to the state, as well as child support checks and civil judgments owed to the litigants. They also maintain a record of liens for real estate, dispose of violations that aren’t contested or don’t require a court hearing, and notify state and local government agencies like law enforcement.

Conservation Board – The Conservation Board is made up of five people appointed by the County Board of Supervisors. This board works to preserve natural resources, habitats, and native plants and animals in the county. These duties are accomplished by acquiring and managing land for public use, such as hunting, fishing, camping, and recreation, and educating the public about how they can help protect the environment. The board oversees 11 areas made up of 1,755 acres.

Emergency Management– This department is responsible for developing and maintaining a countywide emergency preparedness plan to coordinate resources in Muscatine County for foreseeable emergencies or disasters. These



disasters include severe storms, tornadoes, hazardous materials incidents, or other natural or man-made emergencies. The department provides coordination between county agencies and acts as a liaison between local governments, state, and federal agencies during disasters and emergencies.

GIS – The GIS Department, located in the Muscatine Power & Water Building, provides improved methods for collecting, managing, and using location-based information to analyze trends, design spatial models, and develop projections to support decision making processes and enhance public access to data in an equitable manner. Muscatine County’s GIS is run as a partnership under the Muscatine Area Geographic Information Consortium (MAGIC) between the City of Muscatine, Muscatine County, and Muscatine Power and Water. Affiliate members include the Cities of Wilton and West Liberty.

MAGIC promotes fact-based decision making for both day-to-day operations needs and long-range planning to benefit citizens in Muscatine County. The GIS Department enables elected officials, department heads, county employees, public and private agencies, and citizens of Muscatine County to graphically view and analyze information and apply GIS technology to the county’s issues.

County Jail – The county jail is located in the City of Muscatine at 400 Walnut Street. This facility typically houses pretrial detainees and individuals

serving short sentences for misdemeanors or low-level felonies. They may also hold inmates awaiting transfer to state or federal prisons. Administration office hours are 8:00 a.m. to 4:00 p.m. Monday through Friday. Visiting hours are scheduled by the jail.

Secondary Road Department – This department is responsible for the safety and quality of over 600 miles of secondary roads and over 100 bridges, as well as construction of road and bridge projects within the county, maintenance of all secondary roads, and issuing permits pertaining to roadway and right-of-way use.

Senior Resources – Senior Resources is a 501(c)3 non-profit organization that provides assistance to seniors throughout Muscatine County. Muscatine Senior Resources is located in the City of Muscatine, but offers services to all of Muscatine County. Their mission is to “promote and provide programs to enhance the quality of life for seniors ages 60 plus in Muscatine County.” Some of the services include a chores service, home repair program, Meals on Wheels, Medicare Assistance, and others.

Information Systems – People that work with information systems plan, install, and oversee IT solutions to support business operations. They do systems analysis, data management, network administration, and provide cybersecurity to the organizations or businesses for whom they work.



Law Enforcement – The county sheriff's office is located in the City of Muscatine at 400 Walnut Street. It is made up of four divisions: civil, investigation, jail, and division. The civil division is responsible for serving various legal notices, like subpoenas or court orders and conducting Sheriff's Sales on foreclosed properties. The investigation division primarily reviews felony level crimes, but also is responsible for managing the property and evidence room, overseeing the Sex Offender Registry and investigating any registry violations, amongst other tasks. The jail division operates the county's jail. The patrol division responds to emergency situations and patrols unincorporated areas of the county.

Public Defender – A public defender is a lawyer provided by the county government to represent and advise those in criminal, juvenile, and mental health matters who cannot afford to hire a private attorney. They do not represent individuals in any civil matters except mental health matters.

Public Transit – The City of Muscatine has a public transit system called MuscaBus. The bus operates Red, Blue, and Yellow routes from 6:30 a.m. to 5:00 p.m. Monday through Friday. The Green route operates from 7:25 a.m. to 4:40 p.m. Monday through Friday. Lastly, the Red and Blue routes operate on Saturdays from 8:30 a.m. to 4:00 p.m. It costs just one \$1.00 to ride one of the routes, and children under 5 ride free with a paying adult. Riverbend Transit provides transportation for the elderly, disabled, and rural residents of Cedar, Clinton, Muscatine, and Scott Counties.

Recorder – This position is responsible for recording all real estate documents, and issuing boat, snow, and ATV registrations and titles. They also issue hunting and fishing licenses; file birth, death, and marriage records; and issue certified copies of vital records in Muscatine County.

Treasurer – This person is responsible for the assisting with the payments of property taxes, registering of vehicles, and renewal of license plates. The treasurer also keep track of all of the money received by the county and all of the money paid out.

Zoning and Building Department – The Zoning and Building Department is responsible for providing services related to both current and future land uses in all unincorporated areas of Muscatine County and services related to residential building, permitting, and inspections in unincorporated areas of the county. The department also provides assistance to the Zoning Commission, Board of Adjustment, and Building Board of Appeals and assists with grants to counties for tasks like well testing and well rehabilitations.

Other Services

Alert Iowa Emergency messaging System – Muscatine County is a participant in the State of Iowa's official emergency notification system called Alert Iowa.

Revolving Loan Fund (RLF) – An RLF is used for the development and expansion of small businesses. While most RLFs are used to support small



businesses, some target areas like minority business development, healthcare, or the cleanup of a brownfield site.

Fire Protection – Muscatine County is home to 12 fire protection districts. Districts include, Atalissa, Blue Grass, Conesville, Durant, Fruitland, Letts, Montpelier, Muscatine, Nichols, Walcott, West Liberty, and Wilton. All 12 districts work together to protect the citizens of Muscatine County.

Library Systems – Muscatine County is home to four library systems. The Musser Public Library was established in 1902 and is the largest library in the county. The members of Musser Public Library are eligible to use any participating Iowa Open Access Library and RiverShare in both Iowa and Illinois. Next, there is the West Liberty Public Library on 400 North Spencer Street in West Liberty. Third, there is the Wilton Public Library that shares a building with the Wilton Community Center on 1215 Cypress Street in Wilton. The fourth library is Muscatine County Library in Durant. The Muscatine County Library System is a taxing authority, which allows it to determine each jurisdiction's budget.

Education/School Districts – Muscatine Community School District, West Liberty School District, and Wilton Community School District all serve the students that live in Muscatine County.

Surrounding school districts not located in Muscatine County, like Durant Community School District and Louisa-Muscatine School District, also serve a portion of Muscatine County's students.

State's Attorney – This person provides legal services to the county board, elected county officials, and other county departments. The state's attorney is also obligated to represent the state in a criminal case presented to a judicial court or a designated county.

Veteran Affairs – This department is responsible for organizing benefit programs for veterans and their families. Benefits include education, pension, disability compensation, life insurance, home loans, survivor support, vocational rehabilitation, medical care, and burial benefits.

Tourism – The majority of attractions in Muscatine County are found in or around the city of Muscatine. Both Deep Lakes Park and Wildcat Den State Park offer visitors a place to hike and explore the great outdoors. The Muscatine County Conservation Board, State of Iowa, and the Iowa Department of Natural Resources manage around 20 parks and recreation areas in the county. Additionally, there are plenty of great places to shop and eat along the world-famous Mississippi River. Muscatine is also home to the World's Largest Watermelon.



Appendix



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: January 25, 2024

FILED BY: David Kovarik

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT:

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Brad Akers
Mike Deahr
Carol Schlueter
Virginia Cooper
Curt Weiss

Gena McCullough
David Kovarik

The meeting began by providing a background on why comprehensive plans are needed, what the comprehensive plan will contain, and the agreement and timeline for services.

To get an understanding for the steering committee’s point of view on the county, Ms. McCullough asked members to talk about their favorite parts or aspects of Muscatine County, any opportunities that the plan update could include, challenges that the county could face, and what the future of the county looks like in the next ten years.

Facilitated Exercise - Favorite part of Muscatine County:

Brad Akers is from the West Liberty area, and he enjoys the space of the more rural area while also having access to the City of Muscatine and Iowa City. The county has a lot of good public areas, and people are moving to rural areas; it’s a hot commodity at this time.



Mike Deahr likes the diversity the county has, and that there is strong cooperation between agricultural interests, county interests, and municipal interests. He also believes it is important to work to secure clean water sources physically and through avenues like the comprehensive plan.

Carol Schlueter spoke on the importance of keeping agricultural land and conservation lands as they are, and making sure expansion into those areas is heavily monitored and controlled.

Virginia Cooper agreed with Carol's sentiments on agricultural land. She spoke about the difficulty of balancing between expanding municipalities and keeping things as they are. She likes living in a rural area and wants to keep it rural.

Curt Weiss expanded on these ideas, saying that it's important to limit new development, so that it is not on every 5 acres of land in the county.

In summary, most of the steering committee touched on and agreed that the diversity between conserved land, prime farm land, and expansion within city limits was a positive thing in the county. It was important to them that prime farmland stayed farmland and conservation areas remained as they were for current and future users.

Speaking on the opportunities that the plan could touch on, Mr. Deahr spoke about how things were stagnant, the county population is not really increasing, and the industry remains the same and isn't changing. Eric Furnas spoke about how there has been conflict with developments of people building in the county who don't like the sights, smells, and sounds of country living. Mr. Weis said that expanding subdivisions around existing municipalities and letting the market decide where to build would be the best way to expand. Virginia brought up the idea of housing trends, and how in the 2014 update conservation subdivisions were trending. This time around, people want self-sustaining homesteads, with the opportunity to get food from their own garden, or raise their own livestock. The idea of cluster subdivisions, with joined water and sewage systems, was raised as an idea to help cut down on resource drain and costs. However, federal and state regulations for public water systems have become more stringent, which could deter this type of development.

Clear water and storm water controls were again raised as an issue. Perhaps there is the opportunity to expand some municipal services for water and sewage to reduce damage to the shallow aquifers. There was also the idea to create protection for upland areas to allow those wells to recharge, and to expand and better manage wetlands. NCRS and the Lower Cedar Watershed might be good points of contact for this, and could point us in the right direction

For stormwater retention and collection, the group thought that including a requirement in new developments for stormwater handling would be an avenue to help maintain a high-water quality, specifically focusing on the quality of the water



released, not just where it is stored and released. Mr. Deahr suggested NRCS and IDALS as possible resources that could help with ideas for clear water.

Mr. Furnas also mentioned that with an increase in developments comes an increase in traffic. With the rising cost of infrastructure maintenance and a non-disproportionate budget increase that could lead to some hard choices, such as which roads and bridges are maintained, and which could possibly close down. The group agreed that keeping new developments close to major municipalities would help cut down on the need for rural road repair.

There were mixed opinions on renewables, especially in West Liberty where 2 or 3 separate companies want to put in 100 large wind farms (650 ft towers), each needing 3-5 acres. The county has put a moratorium on wind farm development for the time being, but this will be a point of contention.

West Liberty is growing quickly, and the group agreed that it is important to maintain county-wide coordination between municipalities, and pointed to the new industrial park as an example. They would like an additional public open house in West Liberty to make sure input is heard there. Bi-State will look into the agreement to see if that can be done.



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: March 21, 2024

FILED BY: David Kovarik

MEETING: Muscatine County Visioning and Land Use Workshop

PRESENT:

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Jeff Sorensen
Brad Akers
Mike Deahr
Carol Schlueter
Virginia Cooper
Curt Weiss

Gena McCullough
David Kovarik
Ricky Newcomb

31 various Citizens
of Muscatine
County

The meeting began at 6:00 p.m. by providing a background on why comprehensive plans are needed, what the comprehensive plan will contain, and the agreement and timeline for services.

Facilitated Exercise – Refining the Vision:

Participants were seated at 6 tables and provided with a list of questions to consider for the comprehensive plan. These questions included:

- What makes Muscatine County unique?
- What opportunities are envisioned to enhance the county?
- What kinds of development would you like to see within cities and unincorporated areas?
- What infrastructure needs would facilitate development in the county?
- Would you improve county facilities/services? In what way?
- What part do resources and the environment play?



Participants had about 20 minutes to discuss these questions and then 20 minutes to report back to the larger group. The complete notes are included at the end of this document, as they are written. There were several reoccurring themes across tables. The most reoccurring theme was “maintaining levels of farmland, rivers, and other natural spaces.” Others include better maintenance and expansion of the road network, housing expansion/improvements needed, better communication systems needed, and recycling expanded beyond the City of Muscatine.

Following this exercise, the tables then looked at county-wide maps with land use zones displayed. Participants were given an explanation on the maps and land use principles. They were then asked to envision where new zones should be placed. Finally, tables were asked to present on their maps. These maps are available at Bi-State offices. Some commonalities included confusion on the seemingly-random zoned areas outside of the municipalities and heavily sloped ravines zoned for residential instead of conservation areas. Participants also requested that future maps included labels for major paved roads, the municipal extraterritorial boundary, and municipal land uses.

Finally, participants were asked for additional input, using a form on the back of their agenda. These forms can be sent to the Muscatine County Zoning board or to Bi-State offices. The meeting adjourned around 8:05 p.m.

Table 1 Notes:

What makes the County Unique?

- We are on rivers, lakes, ponds
- Soccer Complex
- Softball/baseball park
- dog park
- state park — Wildcat den
- Skate park
- Aquatic Center
- Biking & Walking trails, but not rental options
- Public Areas to camp/fish/hunt
- Deep Lakes Park — has canoe & kayak rentals

Opportunities for growth

- Limited activities for younger children (6-10), no public activities, no children's museum
- Better attraction signs
- bike/skate rentals for trail usage
- indoor activities/sporting
- Better awareness of community offerings

Development

- Preserving agriculture
- better mapping of the city
- updating platt books
- distribution to include city & county residents
- highlight areas of public interest

Natural resources - Roles?

- BIG PART
- need a rural recycling program
- Muscatine County Transfer Station is only available to Muscatine City Residents

Infrastructure

- Roads
- Signage
- Better communications to unincorporated areas

Improve County Facilities

- Public works (snow removal/road attention)
- better maintenance of roads - not well maintained



- Emergency services are a major issue, volunteer departments mainly service unincorporated areas
- better investment in mental health
- better use of MUSC City Transfer State, services for all

Table 2 Notes:

What makes the County Unique?

- Unique
- Mississippi River
- History of Muscatine
- Diversity of Social & Environmental
- Variety of Soil Types
- Unique & Diversified Agriculture

Opportunities

- Haven't grown much
- Small businesses struggle to survive (retail, service)
- Develop hobby farms?

Infrastructure

- *R only on hard surface*

Table 3 notes:

What makes the County Unique?

- Soil types
- 2 rivers
- industry
- chairable (charitable?) groups

Development

- lots of small business owners
- tourism

Opportunities

- Protect farm-ground & wild-life areas
- Port authority
- reasonable housing developments

Natural Resources

- Very Important Hunting Fishing, public land
- County ivne?

Infrastructure

- Maintaining Road & Bridges
- Complete Bike Paths in a few areas. Pave gravel paths, install lights along trails
- Improve Wildcat Den

Table 4 Notes:

What makes the County Unique?

- current balance of ag & industry
- location - blessed being close to the river
- Amenities from the City sports, trails, parks, rentals
- Peacefulness of the Country because of the unique size & balance - no sprawl

Development

- Ag 1st, hobby farms?
- Industry level for size of community
- Not low income-mid range housing, but not in the country. Infill 1st.
- Plenty of subdivisions, don't create more subs. fill ones that exist.

Opportunities

- Bicycle/trails city to city
- Conservation areas

Infrastructure

- Rural Internet

Improve County Facilities

- Communication System
- less restrictive to growth

Written Questions:

- Is our school system a draw?



- Is energy zoned on ag or comm. industrial?
- Recycling for city only?

Table 5 Notes:

What makes the County Unique?

- Diversity, Intl Business
- Natural Resources
- Size & Accessibility (Accessibility?)
- Diversity & Size

Development

- Rural Acreages
- Preserve as much land production as possible
- More Truck Farmers/ Natural Foods
- Aqua culture

Opportunities

- Small farms
- More conservation ground
- Hydropower
- used to house every 80 acres

Natural Resources

- Big
- Clean Water/Water
- Buffer Strips repair
- River

Infrastructure

- Improve/Add paved roads

Concerns with Map Accuracy

- Missed on Map
- GPC Kent
- PW Plant
- HON
- Wilton Steel
- Residential - "Rolhosl H"
- "Weisie" "Shougy" West
- Conservation Land
- Barnmart

Table 6 Notes:

What makes the County Unique?

- Industry & Jobs available
- Generosity of Corporations to community
- Industry spread out around the county
- Industry is diverse
- Mississippi River
- Agricultural strength
- low cost getting ag products to market b/c of industry
- Industries are growing

Development

- How to enhance the County — Land use
- Housing is a challenge
- Incentives for MFG jobs
- Difficulty getting "Yes" from County P&Z, lots of red tape, want to know what can do and can't do

Opportunities

- Reduce costs for permitting for preferred uses
- Industrial Parks

Infrastructure Needed?

- Boat landing infrastructure
- Industrial River Infrastructure
- Two-way locks
- Industrial Parks (again)
- Internet

How to improve County Services?

- No big issues



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: April 17, 2024

FILED BY: David Kovarik

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT:

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Mike Deahr
Carol Schlueter
Virginia Cooper
Brian Fargo
Michelle Roos
Curt Weiss

Gena McCullough
David Kovarik

This meeting directly followed the community visioning session that occurred in the city of Muscatine on March 21. Gena McCullough asked for feedback on how the first visioning session went, and how the second session could be improved. The consensus was that the visioning session went generally well and there was a lot of discussion.

One area that could be better was providing more objectives than open discussion, which would help focus participants on areas that the county could influence. It would also be helpful to bring a data sheet providing basic facts about the county to the next visioning session, including demographic facts like population, ethnicity, school-attendance, and employment numbers. Additionally, the maps should include hard surface roads to help orientate people.

Steering committee members brought up that housing was a prevalent topic at the meetings, including trying to build homes for workers that live out of the county and commute into the county. It is important that these residences are affordable to the working class. Eric Furnas reminded the group that housing issues are less a county issue and more municipal. Yes, the



county can assist by creating an environment conducive to more housing, but the market and cities are the ones that have to take the lead in building residences.

Natural preservation also remained an important topic. The idea of creating a disincentive to denude forest areas was brought up. Committee members wanted environmental preservation added as a separate goal in the end document. Potential language is “Preserve, protect & conserve existing conservation & recreational areas, contiguous woodlands, and wetland areas.”

Additional policy changes included:

- More emphasis on economically feasible land, including a policy that objectively scores development applications based on merit and the land impact.
- A policy allowing for expansion of emerging renewable technology, while also ensuring that these technologies are placed in a safe and responsible manner. It was further brought up that solar and wind might benefit from having two separate policies.



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: May 22, 2024

FILED BY: Ricky Newcomb

MEETING: Muscatine County Visioning and Land Use Workshop

PRESENT:

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Kurt Kirchner
Jeff Sorensen
Scott Sauer
Brad Akers
Virginia Cooper
Brittany Woodson

Gena McCullough
David Kovarik
Ricky Newcomb

11 various Citizens
of Muscatine
County

The meeting began at 6:00 p.m. by providing a background on why comprehensive plans are needed, what the comprehensive plan will contain, and the agreement and timeline for services.

Facilitated Exercise – Refining the Vision:

Participants were seated at three tables and provided with a list of questions to consider for the comprehensive plan. These questions included:

- What are two best kept secrets about Muscatine County?
- What opportunities could enhance Muscatine County?
- What kinds of development would you like to see in unincorporated Muscatine County?
- What new or improved infrastructure would support these types of development?
- What do you value about the Natural Resources & the Environment in Muscatine County?
- In what way would you improve County Facilities/Services?



Participants had about 20 minutes to discuss these questions and then 20 minutes to report back to the larger group. Notes on this discussion are included at the end of this document. There were several reoccurring themes across tables including maintaining the levels of farmland, rivers, and other natural spaces, as well as the importance of recreational and natural amenities and how they can be improved upon, such as more uniform signage on trails. Others included thoughts on solar and wind development, hobby and small farms, focusing new development near existing development, and expanding recycling beyond the City of Muscatine.

Following this exercise, the tables then looked at county-wide maps with land use zones displayed. Participants were given an explanation on the maps and land use principles. They were then asked to envision where new zones should be placed. Finally, tables were asked to present on their maps. These maps are available at Bi-State offices.

Finally, participants were asked for additional input, using a form on the back of their agenda. These forms can be sent to the Muscatine County Zoning board or to Bi-State offices. The meeting adjourned around 8:00 p.m.

Table 1 Notes:

Development

- Heavy industrial in Atalissa and WL could expand into the two-mile radius already in use
- Hwy 6 corridor – commercial and railway access on 6 already there
- Encourage/focus hobby farmers/farming off of paved roads
 - F70 south of WL to Nichols & south of Nichols to Conesville – possible small farm use
 - Look at paving gravel roads south of WL – Elder Ave for hobby farmers and small acreages
- Consistency in building codes – building codes should all match, there should be mandatory set of guidelines in place for County personnel to follow

Infrastructure

- Signage along better trails

Natural resources

- Improved access to the Cedar River – untapped conservation area
- Trails and nature center – done and done well
- More parks & recreational areas
 - Hoover trail enhancement
 - Mountain biking in hilly areas
 - Connect existing links of bike trails
 - Use some Cedar River bottom land for flat trail development
 - Established & equipped trail system



- Enhance our water features – kayaking tours, rentals, etc. rafting
- Camping facilities to build on
- Possible new special residential pools outside the city where residents could bike/hike to work?
- Look at other areas that are successful in the above offerings and how they overcome flooding issues
- Tie in all ecosystem amenities to make it popular tourist site
 - All connected: camping, hiking, kayaking, geo-caching, restaurants/winery/brewery

County facilities/services

- Recycling services being offered/developed might help – like Johnson County

Table 2 Notes:

Development

- Development where infrastructure already is near town – not spread out
- Controlled slow growth
- Energy options – solar, wind
 - Solar needs auxiliary food components
 - Solar on existing buildings
 - Wind - concern of height aesthetics, rather have shorter, not County’s responsibility to take care of when done
 - Cities and County should have input on solar and wind energy projects within two-mile radius
 - Public input meeting

Infrastructure

- Recreational – bike trails – county wide connecting smaller communities – trail plan

Natural resources

- Preserve prime farm ground and conservation

Table 3 notes:

Opportunities

- Deep Lakes project south of Muscatine near campground – driving traffic and visitors
- Inflatable dome at soccer fields
- Mississippi River as important asset – City port like Dubuque?
 - River recreation
- WL as bedroom community to Iowa City



- People going to Iowa City to buy things is also an issue
- Long-term tax base
- Ring around city with new homes, trails, commercial/industrial park?
- Real estate development
- Similar opportunities around Wilton

Development

- Enhance small towns without being at the expense of good agricultural land
- Enhance development within buffer areas, less so in other areas
 - Better services are also available in these areas
- Hobby farms – difficult to purchase when most land bought up by large farmers
- Developers not wanting to take on much risk
- Wind turbines lowering property values
 - Solar preference over wind by some – less permanent foundation and fewer upfront carbon costs
- State rules allowing hog building over residential

Infrastructure

- More uniform signage through County on trails and at significant places

Natural resources

- Conservation areas/timber reserve
- Conserve farmland

Other

- How do small businesses generate enough money flow to do much better than break even?
- Need to help people bring in more household income to be owner instead of renter



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: June 27, 2024

FILED BY: Charlie Rice

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Brad Akers
Virginia Cooper
Mike Deahr
Michelle Roos
Carol Schlueter

Gena McCullough
Ricky Newcomb
Charlie Rice

This meeting was a follow-up to the April 17 visioning workshop that took place in the City of Muscatine. This April workshop included discussion about development initiatives, infrastructure improvements, natural resource conservation, and improvement of county services.

The first issue brought up by the Steering Committee on June 27 was the traffic around Deep Lakes Park. Deep Lakes Park is an old quarry, and heavy industry still exists around the park. This has resulted in large trucks and other industrial vehicles clogging traffic around the park. Not only are the large vehicles an issue, but Muscatine County has gotten complaints about unlicensed vehicles like forklifts driving down the public road. Possible solutions would be road widening or the construction of separate roads just for the industrial equipment. Of course, these solutions are costly.

Another issue that was raised was the fact that rural residents of Muscatine County have no drop-off location or curbside pickup services for recycling. Republic Services does curbside trash and recycling in Muscatine County, but does not reach the rural residents. This service gap was noted as part of the Steering Committee discussion.



Eric Furnas brought up the desire to use the Land Evaluation and Site Assessment (LESA). This system is a point-based rating of the relative importance of agricultural land resources. This would be very beneficial when it comes to making decisions on rezoning or annexation of agricultural land. If the parcel of land scores very high on the LESA system, it's too agriculturally important to be changed from agriculture to another land use.

Most of the Steering Committee also expressed the desire for Muscatine County's Future Land Use Map to include future land use within a two-mile bubble of each municipality. This represents the two-mile extraterritorial boundary that municipalities can legally plan for. Some committee members desired flexibility in the map, while some wanted to map out a one-mile bubble around the cities as a buffer to allow development opportunities and growth. This discussion was tied to where allowances should be considered for wind and solar energy fields.

Eric Furnas and the Steering Committee also expressed a desire to have language addressing sustainable development and renewable energy in the comprehensive plan. This language and commitment to these environmentally friendly practices will help Muscatine County receive grants that allow them build supporting infrastructure. West Liberty already has multiple companies with the desire to put in wind farms. Along with sustainable development and renewable energy, Eric Furnas and the committee members wanted to mention the Lower Cedar River Watershed Management Authority in the comprehensive plan to be a part of the commitment to environmental conservation.



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: August 22, 2024

FILED BY: Charlie Rice

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT

<u>COUNTY/COMMUNITY</u>	<u>BI-STATE</u>	<u>OTHERS</u>	<u>COPIES TO:</u>
Eric Furnas Brad Akers Virginia Cooper Mike Deahr Carol Schlueter Brandon Hatcher	Gena McCullough David Kovarik		

The topics discussed with the Steering Committee included feedback and direction on the future land use map, status of chapter development and associated mapping, and policies review.

While cities have the legal ability to plan for up to two miles from the existing city limits, it was noted that for county planning purposes, more emphasis will be placed on the 1-mile boundary from existing city limits when considering development proposals outside of existing city limits. There was interest expressed in showing forested areas, and staff was asked to research what other counties have done, as well as the Natural Resource Conservation Service related to wooded areas and the need to look as contiguous stands of trees for conservation. Slope areas were another to show where non-buildable ravines are located. For mapping purposes, existing land use anywhere in the county whether in a city or county should be shown unless that is superseded by future land use plans. Bi-State staff will draft a future land use map for committee review.

Bi-State staff sent copies of initial draft county profile and county services chapters. Other chapters underway included the resources profile, recreation/conservation and transportation chapters. Steering Committee members were given copies at the meeting and asked to review for content and provide input through Eric Furnas to Bi-



State staff. The county profile chapter is a mix of sources including both decennial Census and American Community Survey (ACS) estimates. County Services shows service hours, but this may be too detailed as these change from time to time. It was noted that Fruitland is NOT on Muscatine Power and Water systems.

The last item for discussion was the plan policies which were included with the agenda for discussion. The County Vision is retained as it was written in the current plan. County Goals were revised slightly to address changes over time. The last area to discuss with the Steering Committee is the plan policies. Bi-State staff walked through these systematically by category and under the lens of Iowa's Smart Planning Principles, such as energy, resilience, and sustainable design. It was agreed that "Encouraged," "Desired," and "Suggested" as terms generally conveys similar meaning. Use of the word "Should" was a stronger meaning as compared to "Required."

There was greater interest by the Steering Committee in emphasizing development being on paved roads in the general development section. Forest preservation was also noted as a policy needing to be added, and well-defined.

Energy development was a new category to be added. At a minimum, there should be a 1-mile buffer from city limits in consultation with the affected city. The following was presented and discussed for Renewable Energy Development:

1. Encourage renewable energy development to locate outside the extraterritorial boundary identified by municipalities up to 2-miles from corporate limits
2. Steer renewable energy development to locate where transportation and utility network access is readily available or can be provided or extended if it is to be located in the unincorporated areas of the county
3. Favor renewable energy development that stimulates value-added activities that feed dollars into the local economy and improve the quality of life of Muscatine County residents
4. Encourage projects located in areas of less productive agricultural land, unless the project contains an agricultural component that is sustained throughout the life of the project
5. Give emphasis to development projects that include post-closure measures to return land to productive agriculture location.

Sustainable design was another new category for proposed policies. The following was presented and discussed for Sustainable Design, and the consensus was to focus on durable materials and resilient design. There were some questions about the authority to address indoor air quality, except through the building codes.



Determine where best to include? In General Growth & Development

Sustainable design principles aim to:

- Optimize site potential.
- Minimize non-renewable energy consumption and waste.
- Use environmentally preferable products.
- Protect and conserve water.
- Improve indoor air quality.
- Enhance operational and maintenance practices.
- Create healthy and productive environments.

Sustainable design is an integrated, holistic approach that positively impacts all phases of a building's life-cycle and encourages compromise and tradeoffs. (GSA.gov)

It was suggested to include forest conservation under the environmental health policies, reiterate the use of the LESA System that is already noted in the plan, and to recognize the Lower Cedar River Watershed Management Authority in the policies, and consult when appropriate. Strengthening the language on recycling by including a recycling policy line item was agreed on, as well as adding some language on how the natural resources support tourism through outdoor recreation. The last policies discussion item was related to coordination with cities in the 2-mile extraterritorial boundary.

Next steps will be to finalize chapters for a full draft in October, draft a revised future land use map from the input, and prepare for a discussion of the implementation strategies at the September meeting. The date was set for September 19, 2024 at 1:00 p.m. in the Muscatine County Administration Building.



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: September 19, 2024

FILED BY: David Kovarik

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT

COUNTY/COMMUNITY

BI-STATE

OTHERS

COPIES TO:

Eric Furnas
Brad Akers
Virginia Cooper
Curt Weiss

Gena McCullough
David Kovarik

The Steering Committee reviewed the changes to the future land use map. Overall, they were satisfied with the changes made and only had two requests. First, that the ravine slopes be better identified. Secondly, the extra-territorial area for cities should be cut off at the state and county lines.

David Kovarik then had an update on the chapters available for the Steering Committee to review, which include Chapters 5 to 9. Mr. Kovarik also sent the LESA instruction document. Eric Furnas asked if examples could be provided as well. After explaining the LESA more in detail, members liked that it provided a general set of circumstances to investigate, but looked at the projects individually.

Mr. Furnas spoke about how EMS providers in the county had raised concerns that there were not enough certified providers to reach all ambulance districts. He mentioned it would be a good idea to include language about ensuring emergency services could be properly provided.

Gena McCullough then started to speak on the implementation strategies that would be in the comprehensive plan. These strategies will help to ensure the goals and policies are met. In the growth and development section, members considered adding a strategy to “establish policy/ordinance on renewable energy development within unincorporated areas of the county that consider prime and state defined important farmland, and forested areas conservation.”



Additional strategies that were discussed include the strategy to “facilitate County development of “Right to Farm” or agricultural preservation ordinance to recognize that rural living has some degree of nuisances which may be incompatible with other development.” This could work with the existing strategy, which reads as “Review rural living guide and develop rural living contract to acknowledge that rural living has some degree of nuisances that may be incompatible with neighboring development. Investigate other "good neighbor policies" for applicability to the county.” It was suggested that new build construction residents have to sign a “rural living contract” or acknowledge that they have received a brochure on things that may not be expected in rural living.

For environmental health strategies, it was discussed including language that describes what size forested land counts as capable of being conserved. The Iowa Forest reserve law was brought up: “Forested area must be at least 2 continuous acres in size and not less than 66 ft wide. Cannot be used for leased hunting.” Members were agreeable to using that language when describing forested land that could be considered for conservation.

Ms. McCullough also reminded the Committee that the county had completed its hazard mitigation plan, and could now change the corresponding strategy to “Review hazard mitigation plan as part of zoning and development considerations.

Also added the strategy to “Participate in Lower Cedar River Watershed Management Authority to support water quality, flood mitigation and conservation goals for the Cedar River watershed.”

Under the category for emergency service in Community Services & Facilities, the strategy for maintaining the hazard mitigation plan was expanded to include “facilitate county-related mitigation strategies.”

A new strategy added under waste disposal is “Investigate drop-off recycling options in unincorporated areas? Pair with County Conservation Facility?” The Committee was in favor of this, but Curt Weiss believed that it would be better to have it worded as “County Facility” instead of specifying it being a conservation facility. This expands the number of options for placing a new facility. The other committee members agreed that this was a good change and it was implemented.

Another addition to strategies under Community services & facilities was to “Direct new development to locate on paved roads or create access to paved roads.”

There were several additions to related to education and efforts regarding education. There was mixed reaction from the committee. While education is a priority, that isn’t necessarily the county’s responsibility. Additionally, some of the language was vague, ie “create a high-tech training center.”



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SERVICE REPORT

COUNTY/COMMUNITY:

DATE: October 17, 2024

FILED BY: David Kovarik

MEETING: Muscatine County Comprehensive Plan Steering Committee

PRESENT

<u>COUNTY/COMMUNITY</u>	<u>BI-STATE</u>	<u>OTHERS</u>	<u>COPIES TO:</u>
Eric Furnas Virginia Cooper Curt Weiss	Gena McCullough David Kovarik		

This was a short meeting. Bi-State staff asked the committee members to go over the policies and implementation strategies if there were any glaring problems that they had thought about since the previous meeting. There were none. David Kovarik had provided the rough draft of the full comprehensive plan to Eric Furnas, who would print it off as needed to committee members. Bi-State asked that the Steering Committee review and provide their comments by November 8. It was decided that there would not be a steering committee meeting in November unless there were a lot of changes that needed to happen. The next steps would be presenting the edited draft to the Zoning board during a special night session so the public could come and comment as well. This is tentatively scheduled for the first week in December.



Resolution

**RESOLUTION #02-10-25-01
APPROVAL AND ADOPTION OF THE 2025 MUSCATINE COUNTY
COMPREHENSIVE PLAN**

WHEREAS, the Muscatine County Comprehensive Plan Steering Committee has prepared a revised Comprehensive Plan; and

WHEREAS, two Comprehensive Plan Visioning and Land Use workshops were held to solicit public input; and

WHEREAS, the revised Plan was prepared in accordance with feedback received from the visioning workshops and meetings of the Steering Committee; and

WHEREAS, following a public hearing by the Muscatine County Zoning Commission on January 3, 2025, the Commission recommends approval of the Plan; and

WHEREAS, the Muscatine County Board of Supervisors held a public hearing on the proposed plan at their February 3, 2025 meeting, and

WHEREAS, after careful consideration of public input received, the Muscatine County Board of Supervisors has determined that the 2025 Muscatine County Comprehensive Plan provides appropriate visions, goals and policies for future development within the County.

NOW, THEREFORE BE IT RESOLVED that the Muscatine County Board of Supervisors hereby approves and adopts the Muscatine County Comprehensive Plan.

PASSED AND APPROVED this 10th day of February, 2025.

ATTEST:



Shannon Steele
Administrative/Elections Clerk



Nathan Mather, Chairperson
Muscatine County Board of Supervisors