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## MEMORANDUM

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**DATE:** June 1, 2023

**TO:** Marty Hohenberger, Director, Center for Economic Development & Community Resilience, *Ohio University Voinovich School of Public Affairs*

**FROM:** Kate Perani, Special Projects Manager RISE Ohio, *Buckeye Hills Regional Council*  
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**CC:** Samantha Miller, Development Director, *Buckeye Hills Regional Council*

**RE: RISE Ohio Project Proposal: Meigs County Riverfront Communities Planning Audit and Floodplain Guidance**

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### Overview

Located approximately twenty miles south of the City of Athens, along the Ohio River, the villages of Middleport, Pomeroy, Racine, and Syracuse have a long history of river-borne commerce, while remaining resilient against both economic downturns and natural disasters. Historically, the four riverfront villages' industrial base has centered on coal and salt mining. However, a robust commercial presence was also established due to the heavy river traffic and the railroads that transported the commodities to markets throughout the United States. The mayors of the four villages have worked together to develop a collaborative, inclusive planning group that focuses on the revitalization of communities both along the riverfront and into the interior of the county.

The Village of Middleport, so named because it is halfway between the ports of Cincinnati and Pittsburgh, is in the south-central portion of Meigs County, near the border with Gallia County. Middleport is the largest community in the county, with a 2020 population of 2,208. Three buildings within the village are on the National Register of Historic Places, offering tourists an opportunity to learn firsthand about the history of the region. The Village of Pomeroy is directly adjacent to Middleport and extends along the Big Bend region of the Ohio River. Pomeroy is the county seat of Meigs County. Founded in the mid-1800s as a coal mining town, salt deposits were discovered nearby, and the production of these commodities brought prosperity to the region. The 2020 population of 1,573 has been declining since the closure of the salt and coal mines near the village. Further east upriver lies the Village of Syracuse. Syracuse was founded as a coal mining town and once hosted Carleton College (not to be confused with the modern-day college in Minnesota). The village has maintained a steady population over the past century, with a 2020 count of 781. Continuing east lies the Village of Racine, a similarly sized municipality to Syracuse with a population of 683. Racine hosts a large riverfront park and has public access to a boat launch into the Ohio River for motorized and non-motorized watercraft. Racine is also the headquarters for Home National Bank, which has three branches within the county.

Elected officials and business owners are increasingly optimistic about the region's ability to reinvent itself into an economy based on tourism and outdoor recreation. Leveraging the navigable Ohio River, and the successful Pomeroy Sternwheel Regatta event, the riverfront villages want to capitalize on the burgeoning river cruise industry by offering a new stop along the river. A new quay would foster growth among the existing small businesses and would offer new opportunities for investment. Recognizing the challenges of new growth and redevelopment in the historic riverfront villages, a consortium made up of the four mayors and other stakeholders has determined that a preliminary look at existing development conditions would help each municipality determine the best course of action to guide development sustainably. These challenges include the need to develop the right incentive tools appropriate for the riverfront villages of Middleport, Pomeroy, Racine, and Syracuse, evaluate their surface infrastructure needs, and engage the communities on a vision for the future.

Thus, after consultation with the riverfront consortium, the technical assistance Buckeye Hills Regional Council proposes for American Structurepoint to provide for the riverfront villages a "planning and development audit" that will catalog achievements, assess new and/or emerging circumstances, and evaluate the consistency and adequacy of existing policy and regulation for development. The primary objective of this audit will be a review of the riverfront villages' current planning and regulatory documents. The identified elements included community assets, expected challenges, overall community goals, specific projects, and project funding sources. A secondary task will be the identification of available redress and funding opportunities to Meigs County's greatest obstacle inhibiting community growth and development, Ohio River flooding.

The assistance described herein will allow the riverfront villages of Meigs County to better position developable sites located within Opportunity Zone #9644 to investors/developers. Thus, this project achieves the goal of the RISE Ohio program by increasing Opportunity Zone investment opportunities within the Buckeye Hills Region.

### **Project Description**

American Structurepoint will deliver the following:

- A review of policy plans pertinent to the Villages of Middleport, Pomeroy, Racine, and Syracuse
- A review of external documents outlining initiatives pertinent to the Villages of Middleport, Pomeroy, Racine, and Syracuse. At a minimum, this is intended to include a list of recommended projects for the region, assembled by the Pomeroy (area) Merchants Association.
- A high-level review of the region's spatial structure, including its relationship to transportation networks and service provision.
- The publication and presentation of a "final report" document that will encompass the findings of these efforts. One (1) round of document review with the villages will be conducted to solicit comments and incorporate feedback.

American Structurepoint and Buckeye Hills Regional Council anticipate this project will require 3 to 6 months to complete from an authorization date of November 1, 2022. Ultimate project length will primarily depend upon the availability of existing data, the timeliness/availability of key community stakeholders to provide necessary feedback during the project period, and the ultimate extent of stakeholder outreach effort desired by the Villages of Middleport, Pomeroy, Racine, and Syracuse.

### **Scope of Work**

To complete the project, the American Structurepoint project team will perform the following:

- Collect pertinent planning and policy documents, as well as other data. Depending on their availability and geographic level (village or county), this may include the following:
  - Comprehensive Plans
  - Zoning Ordinance, Plan, and Map(s)
  - Economic Development Strategic Plans or equivalents
  - Tax Increment Finance District Plans or equivalents
  - Planned Unit Development Plans and Ordinances
  - Transportation/Thoroughfare Plans
  - Water and Sewer Master Plans
  - Business District Plans
  - Building permit filings
  - Variance requests
  - Development inquiries
  - Others as identified via staff discussion
- Conduct a review of the available information relative to the anticipated needs and goals of the riverfront consortium.
  - If desired by the riverfront consortium, conduct a goal-setting exercise with riverfront consortium officials and interested community stakeholders to set formal goals for the community.
- Produce a final report that will outline a short- to medium-term (1 to 3 years) workplan of activities for the riverfront consortium to implement. This includes a presentation of that report to the riverfront consortium, Buckeye Hills staff, and other stakeholders (by invitation only) at the conclusion of the project.

### **Budget**

It is anticipated that the services described above will be approximately **\$30,000.00**. Justification of this amount is based on American Structurepoint's projection of the hours necessary to complete this work for a building of this size. All time spent on the project will be billed using the standard hourly rates indicated in our master service agreement. Reimbursable expenses will be invoiced at cost.

Once project activities begin and should it arise that project costs may exceed \$30,000, Buckeye Hills Regional Council and American Structurepoint will justify the need for additional resources in writing.

# Meigs County Riverfront Communities Planning Audit & Flood Development Guide

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September 18, 2023

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# TABLE OF CONTENTS

- 1.0 Executive Summary..... 1**
- 2.0 Introduction ..... 2**
  - 2.1 Purpose ..... 2
  - 2.2 Scope of Work..... 2
- 3.0 Existing Conditions..... 4**
  - 3.1 Economic Base ..... 5
  - 3.2 Population ..... 6
  - 3.3 Broadband..... 8
- 4.0 Existing Document Review ..... 9**
  - 4.1 Comprehensive Plans..... 9
  - 4.2 Tax Increment Finance Plans ..... 9
  - 4.3 Enterprise Zones & Community Reinvestment Areas ..... 10
  - 4.4 Economic Development Plans ..... 10
- 5.0 Regulatory and Service Jurisdictions.....11**
  - 5.1 Economic Development, Redevelopment, & Reinvestment ..... 11
  - 5.2 Zoning and Subdivision Enforcement ..... 11
  - 5.3 Potable Water & Sanitary Sewer Service..... 12
  - 5.4 Public Service ..... 12
  - 5.5 Parks and Recreation ..... 13
  - 5.6 Historic Resources..... 13
- 6.0 Comparison Communities .....14**
  - 6.1 New Madrid, MO ..... 14
  - 6.2 Dover, TN ..... 14
  - 6.3 Summary ..... 14
- 7.0 Flood Hazard Areas .....16**
  - 7.1 Existing Flood Hazard Areas..... 16
  - 7.2 Flood Zone Development Best Practices ..... 24

## 1.0 Executive Summary

With available funding through the RISE Ohio program, the Meigs County riverfront consortium, and Buckeye Hills have partnered with American Structurepoint to conduct a planning and development audit as well as provide flood development guidance. The riverfront consortium communities are the villages of Pomeroy, Syracuse, Middleport, and Racine.

American Structurepoint was tasked with reviewing existing plans, regulations, and processes to identify opportunities to enhance community development and recommend best practices. The existing planning and development framework was also compared against active riverboat cruise communities, as developing the Pomeroy riverport was identified as a priority project. The study found that some community development best practices, such as accessible local codes, comprehensive plans, and place-based marketing/community branding, may bolster Meigs County community development efforts.

After an April 2023 meeting with the four villages, floodplain became apparent as the most significant challenge for these communities to rehabilitate and develop their downtowns. The lack of institutional capacity to address FEMA and other regulatory standards has stalled past community development efforts. Flood development guidance is provided as part of this study.

Both the audit and flood development guidance offer starting points for future community development efforts, particularly for each village's downtown.

## 2.0 Introduction

American Structurepoint staff met with the riverfront consortium and a key community stakeholder, the Pomeroy Merchants Association, on January 24, 2023. The following themes emerged to frame the planning audit:

- Shared service agreement opportunities
- Floodplain hazard identification
- Riverfront development and riverboat cruise port of call

### 2.1 Purpose

The Riverfront Communities Planning Audit & Flood Development Guide aims to analyze planning and other development framework in the Pomeroy, Middleport, Syracuse, and Racine downtown waterfront districts to inform future community development efforts.

### 2.2 Scope of Work

The scope of this assessment is to:

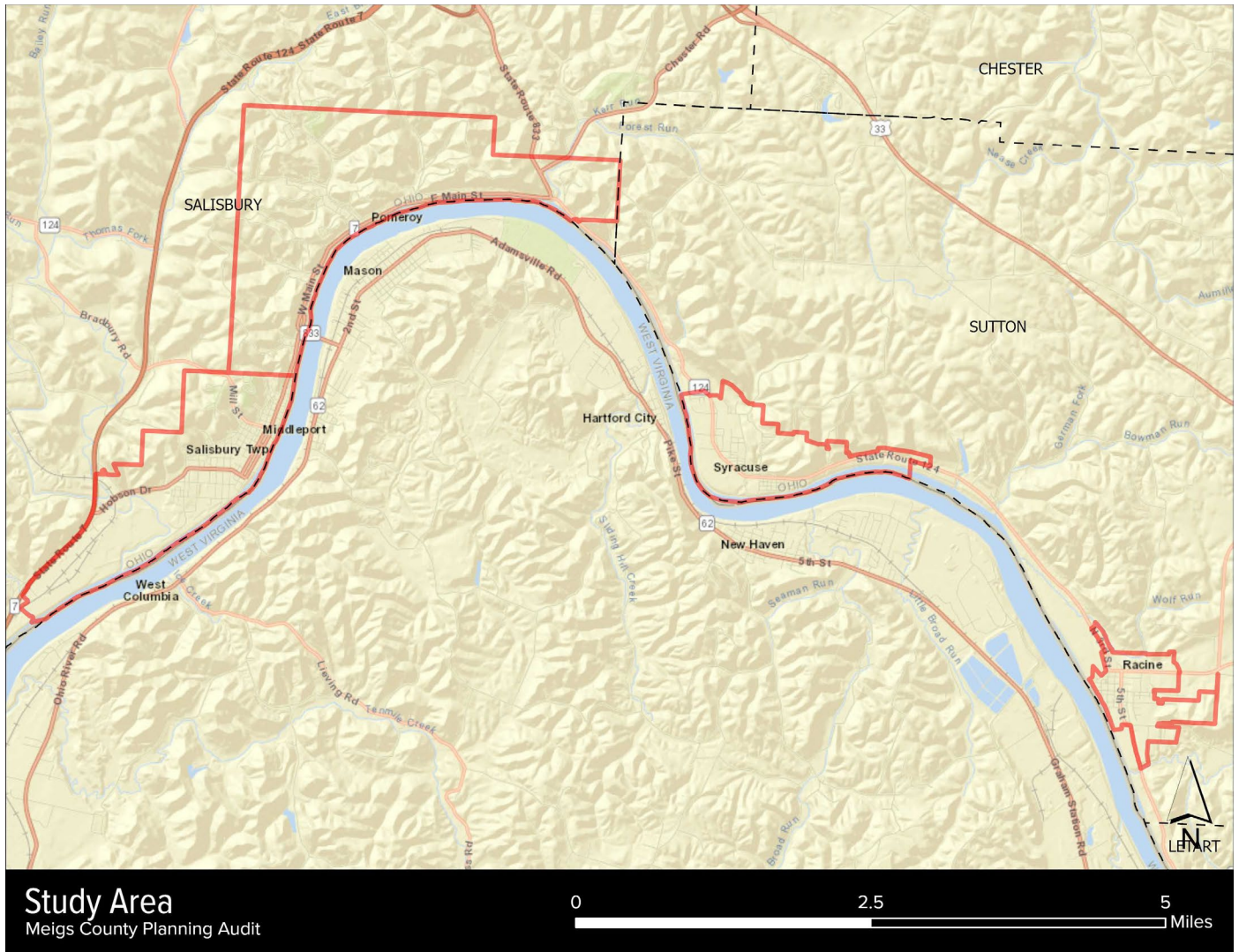
- Collect pertinent planning and policy documents and other data to create an existing conditions inventory of the four incorporated riverfront communities in the county.
- Conduct a review of the available information relative to the anticipated needs and goals of the riverfront consortium. This is accomplished by comparing the inventory to existing riverport communities.
- Provide floodplain development guidance.

The following villages were included as part of this study and are henceforth known as the “riverfront consortium”:

- Pomeroy
- Racine
- Middleport
- Syracuse



Figure 1: Riverfront communities study area.



**Study Area**  
Meigs County Planning Audit

0 2.5 5 Miles



## 3.0 Existing Conditions

An analysis of the planning area's current conditions was carried out to help guide the planning process and provide the necessary background information to develop project and policy recommendations. Topics considered in the analysis included community demographics, current market conditions, resident amenities, transportation elements, community infrastructure, and the natural environment.

Data used in this analysis was pulled primarily from the US Census Bureau via the following sources:

- American Community Survey, US Census  
In addition to the decennial census, the US Census Bureau conducts dozens of other censuses and surveys, including the American Community Survey. The American Community Survey is an ongoing effort that gathers information from a community through a small sample rather than the extensive 10-year survey with which most people are familiar.
- ESRI Business Analyst  
ESRI Business Analyst is a powerful tool for analyzing data within a specific geographic location. ESRI allows data to be observed at a very local level and compared with surrounding groups.

Data from the US 2010 and 2020 Census, American Community Surveys (ACS), and Bureau of Labor Statistics (BLS) were used.

### 3.1 Economic Base

Below are the top industries in each community based on the NAICS 2022 Economic Base Based on the Number of Employees data.

- County
  - Retail – 11.8%
  - Educational Services – 16.2%
  - Health Care/Social Assistance – 12.9%
  - Public Administration – 16.5%
- Village of Pomeroy
  - Retail – 13.1%
  - Finance & Insurance – 11.6%
  - Accommodation & Food Service – 22.3%
  - Public Administration – 16.4%
- Village of Middleport
  - Health Care & Social Assistance – 33.9%
  - Public Administration – 29.0%
- Village of Syracuse
  - Educational Services – 38.5%
  - Public Administration – 27.4%
  - Manufacturing – 11.1%
- Village of Racine
  - Retail – 8.9%
  - Educational Services – 47.6%
  - Public Administration – 12.9%

### 3.2 Population

Like many Appalachian communities, Meigs County is experiencing a population decline due to the loss of industries, particularly mining. Total population in 2010 and 2020 for the four villages is shown in Figure 2. Figure 3 shows how Syracuse, Middleport, and Pomeroy saw the rate of decline only increase between 2010 and 2020. Racine was an exception to this trend, as a growth rate of 4.4 percent occurred. This growth exceeded the state’s population growth of the same period (2.3 percent).

In 2020, nearly 75 percent of the Meigs County resident workforce left the county for employment. The commuter shed and population decline emphasize the need for downtown rehabilitation to attract tourism to the beautiful Ohio riverfront and retain residents as part of the daytime population. Figure 4 also shows that 1,500 commuters came into the county for work. These commuters are potential future residents as the county develops.

Figure 2: Total population. Source: American Community Survey.

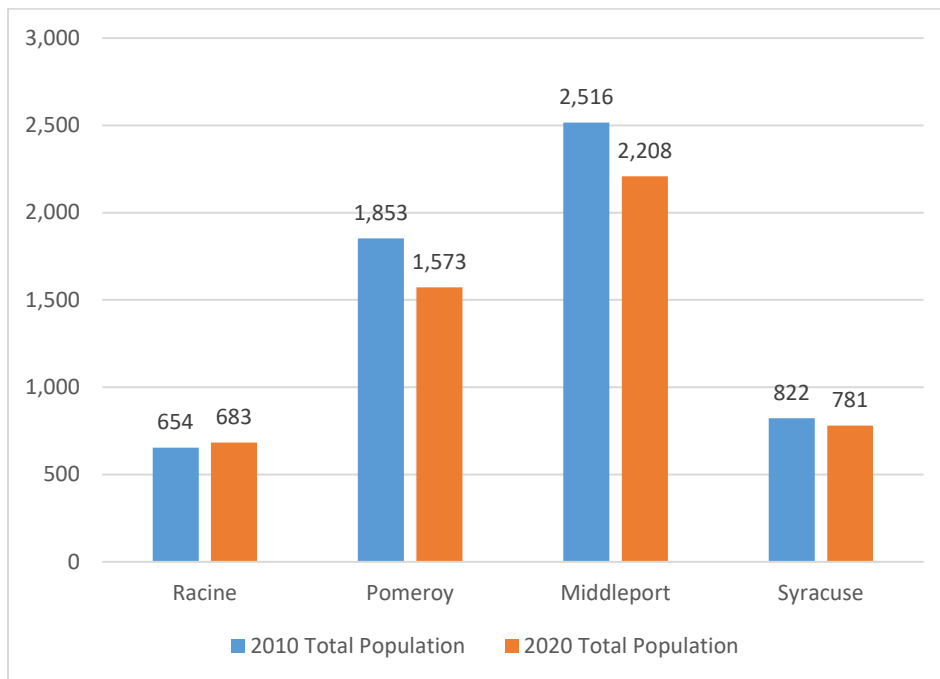


Figure 3: Population growth comparison. Source: American Community Survey.

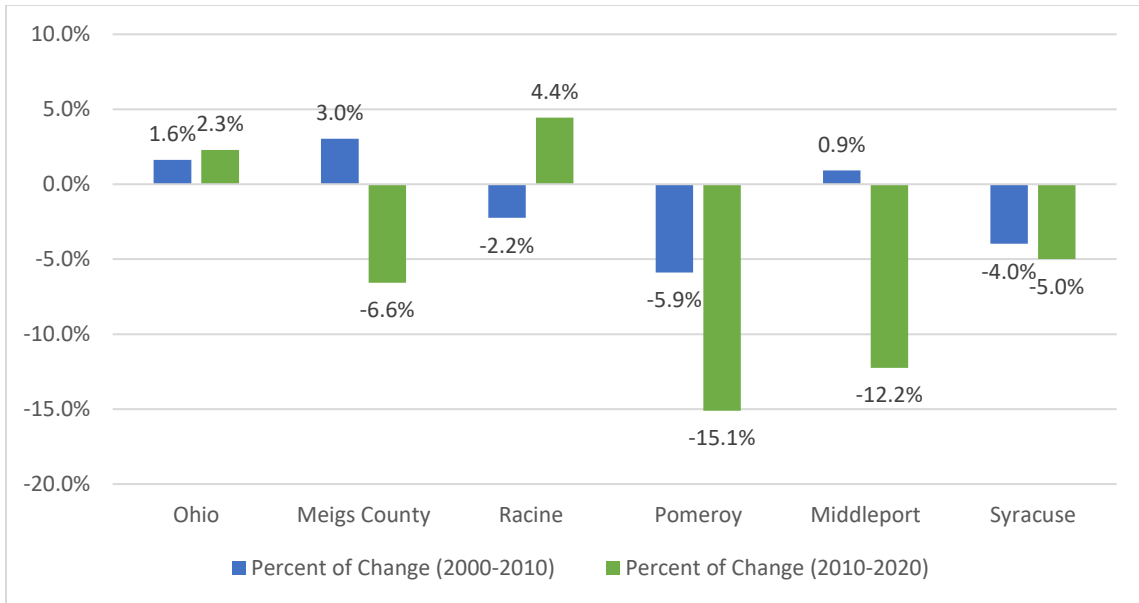
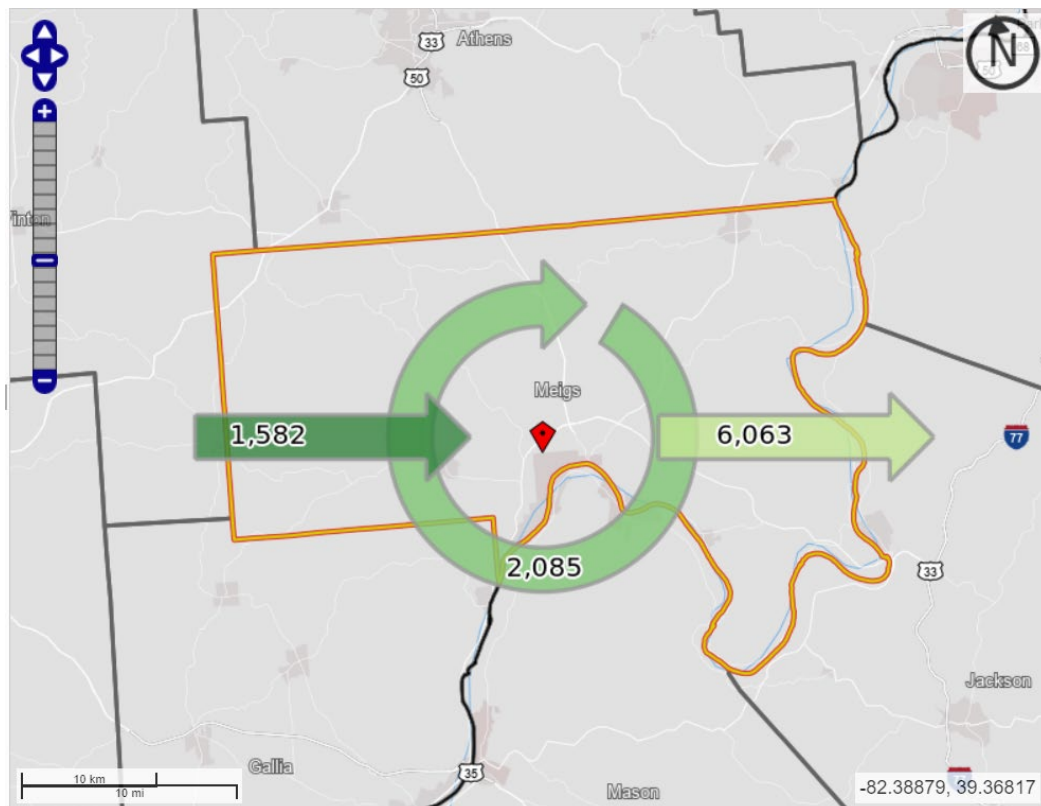


Figure 4: 2020 commuter shed. Source: On the Map.

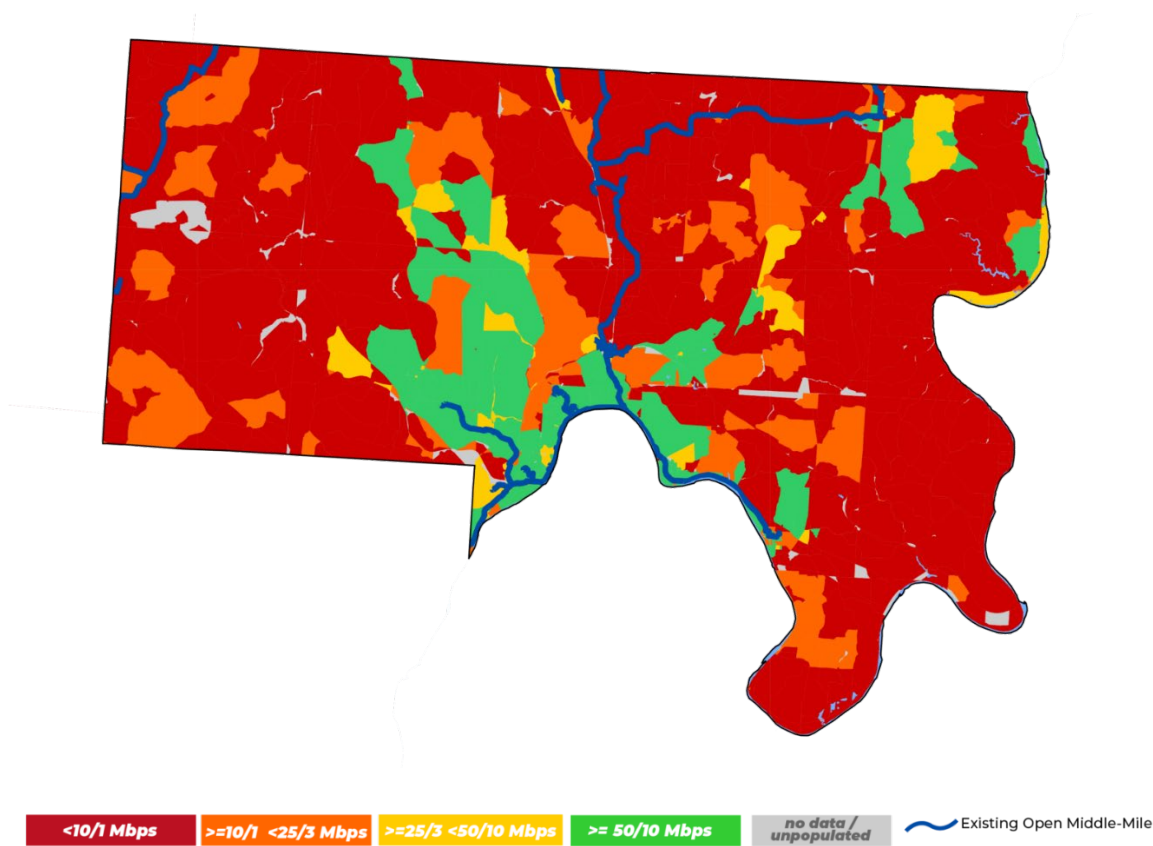


### 3.3 Broadband

With the increased reliability on broadband services, broadband communications planning is rapidly becoming necessary for various services. The recent Covid-19 pandemic exacerbated this need. Broadband has also become a public health matter, as it provides telemedicine access to otherwise remote areas. While the level of necessity varies by location, each business and household must have reliable broadband access to connect to the greater community. It attracts future residents and allows a community to grow its work-from-home population for economic development.

An important distinction here is internet vs. broadband. The Internet is a data network accessible through capable devices (e.g., computers, laptops, smartphones, etc.). Broadband is the technology used to connect those devices to the internet. While a cable or a Wi-Fi router had to be used in the past, broadband requires only an access point to provide high-speed Wi-Fi to nearby areas.

Figure 5: Broadband coverage and speeds.<sup>1</sup> Source: Connecting Appalachia.



<sup>1</sup> Coverage ratings are derived from Ookla Speedtest Intelligence® data from February 2020 through August 2021.

## **4.0 Existing Document Review**

### **4.1 Comprehensive Plans**

Comprehensive plans are a community development best practice. A comprehensive plan is a non-binding, strategic guide containing policy statements for effective decision-making in private development projects and community initiatives for the public good. The plan assists policy, land use, and infrastructure decisions, having gathered input from various sources to build consensus around the plan and its vision for the future.

A Planning Commission can adopt a comprehensive plan in the State of Ohio without obtaining the approval of a city government, township government, or county government. The Ohio Supreme Court has stated that a comprehensive plan is not a requisite to a zoning ordinance or land development regulation. Additionally, there is no requirement in state law that a local governing body must adopt a subsequent zoning ordinance or land development regulation.

No comprehensive plans were found for the study area. The comprehensive planning authority for the county and the riverfront consortium villages is also unclear. Middleport has a planning commission; however, village ordinances do not mention comprehensive plans.

### **4.2 Tax Increment Finance Plans**

Meigs County Economic Development reports no active TIF agreements. TIFs are project-based and can be enacted anywhere in the county with school district approval.

### **4.3 Enterprise Zones & Community Reinvestment Areas**

Enterprise Zones (EZ) are an economic development tool to offer tax incentives through tax exemptions to qualifying new investments within a defined area.

The study area lies within Enterprise Zone #283, which applies to the entire county and all incorporated areas. This full-authority enterprise zone is distress-based; eligibility is established based on the Ohio Development Services Agency (ODSA) criteria below.

- 125% of the state average unemployment during the most recent 12 months
- At least 10% population loss between 1980 and 2000
- Prevalence (minimum of 5%) of vacant or demolished commercial or industrial facilities
- 51% of the population is below 80% of the area's median income
- Specific vacant industrial facilities (zone applies to only those facilities)
- Income-weighted tax capacity of the school district is below 70% of the state average

According to ODSA, Enterprise Zones offer the exemption of real or personal property assessed values of up to 75% for up to 10 years or an average of 60% over the term of the agreement on new investments in buildings, machinery/equipment and inventory and improvements to existing land and buildings for a specific project. The percentage and term of exemption may be increased with local school district approval. The amount of exemption for the Meigs County EZ is unknown.

Additionally, the villages of Middleport and Racine are designated with school district approval as Community Reinvestment Areas to support housing beyond Section 8 housing efforts.

### **4.4 Economic Development Plans**

Meigs County Economic Development confirmed no economic development plans for the study area.



## 5.0 Regulatory and Service Jurisdictions

### 5.1 Economic Development, Redevelopment, & Reinvestment

#### 5.1.1 Meigs County Economic Development & Community Improvement Corporation

Meigs County Economic Development manages the Community Improvement Corporation (CIC). Since 1997, Meigs County CIC has been chartered for community improvement and capacity building for rural development<sup>2</sup>. The CIC is focused on industrial development, and notable projects include the Meigs County Industrial Park in Tupper Plains.

#### 5.1.2 Meigs County Metropolitan Housing Authority

Meigs Metropolitan Housing Authority provides affordable housing for low- and moderate-income households through its Section 8 Housing Choice Voucher (HCV) program. For eligible households, it also offers self-sufficiency and homeownership assistance.

### 5.2 Zoning and Subdivision Enforcement

No ordinances or code enforcement information was found for Racine, Syracuse, and Pomeroy.

The village website for Middleport contains ordinances and appropriate staff to contact. The Village of Middleport Planning and Zoning enforces neighborhood property standards, such as residential improvements (e.g., pools) and property maintenance code, as well as the planning and zoning code (Part Eleven of village ordinances).

A cursory review of Middleport's zoning ordinance revealed that a compliance update is necessary. The following sections of the Part Eleven, *Planning and Zoning Code*, contain provisions inconsistent with the U.S. Supreme Court ruling in *Reed v. Gilbert*.

- Sec. 1113.60, *Sign, Advertising*
- Sec. 1133.08, *Signs and Outdoor Advertising Structures*
- Sec. 1133.09, *Subdivision Signs*

There are likely more sections where this issue applies; however, a complete analysis would be required.

*Reed v. Gilbert* states that all sign code regulations must be "content-neutral," meaning that different content or types of messages cannot be regulated differently. Examples of content-based regulations that exist within the current code are "real estate signs" and "advertising signs."

Further, each specified land use does not have a definition. The term's interpretation is unclear without a specific definition for each land use. As staff and administration change, so can the term's interpretation. The best practice is to have a definition that removes this ambiguity.

Overall, the organization of the ordinance could be substantially improved. Specifically, a consolidated land use matrix does not exist, which would help the average citizen determine whether a specific land use is permitted within a zoning district.

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<sup>2</sup> <https://projects.propublica.org/nonprofits/organizations/311387651>

### 5.3 Potable Water & Sanitary Sewer Service

All four villages have municipal water and sewer service. The extent of existing and future infrastructure is unknown and should be inventoried as a community development best practice. Infrastructure availability is a critical factor in driving future development.

The Village of Syracuse and the Village of Middleport draw their water from groundwater wells. Water quality reports are actively promoted for all municipalities.

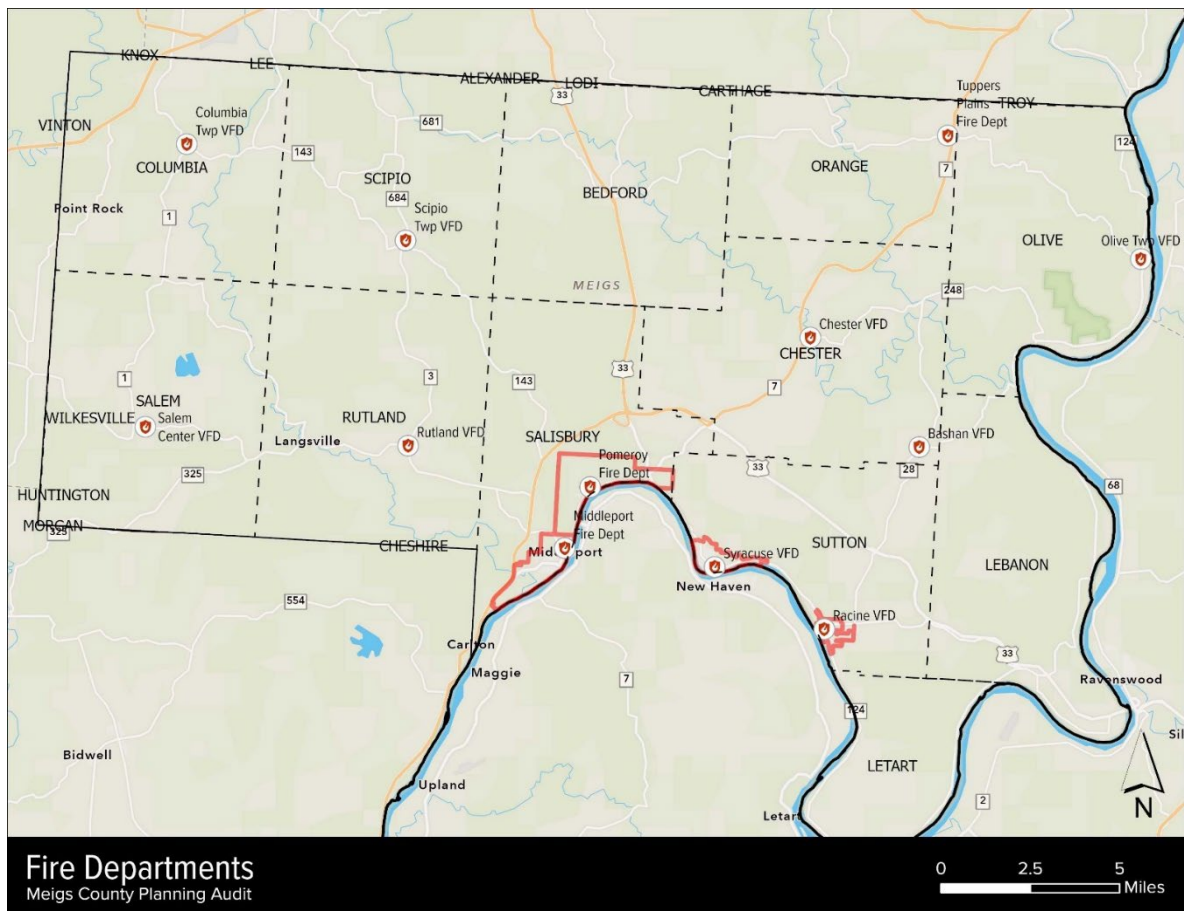
Village of Middleport received \$500,000 in H2Ohio funding to replace water mains, improve three wells, and remove lead service lines within the village. Middleport's water system is currently undersized and aging, leading to frequent boil orders.

### 5.4 Public Service

#### 5.4.1 Fire

Each village has a fire department. A minimum of two fire departments service Pomeroy, which is estimated to be one fire department per 572 people and per one square mile. The Pomeroy Fire Department has one fire station and 40 members, all volunteers. Scipio Township Volunteer Fire and Emergency Medical Services also services Pomeroy.

Figure 6: Fire departments.



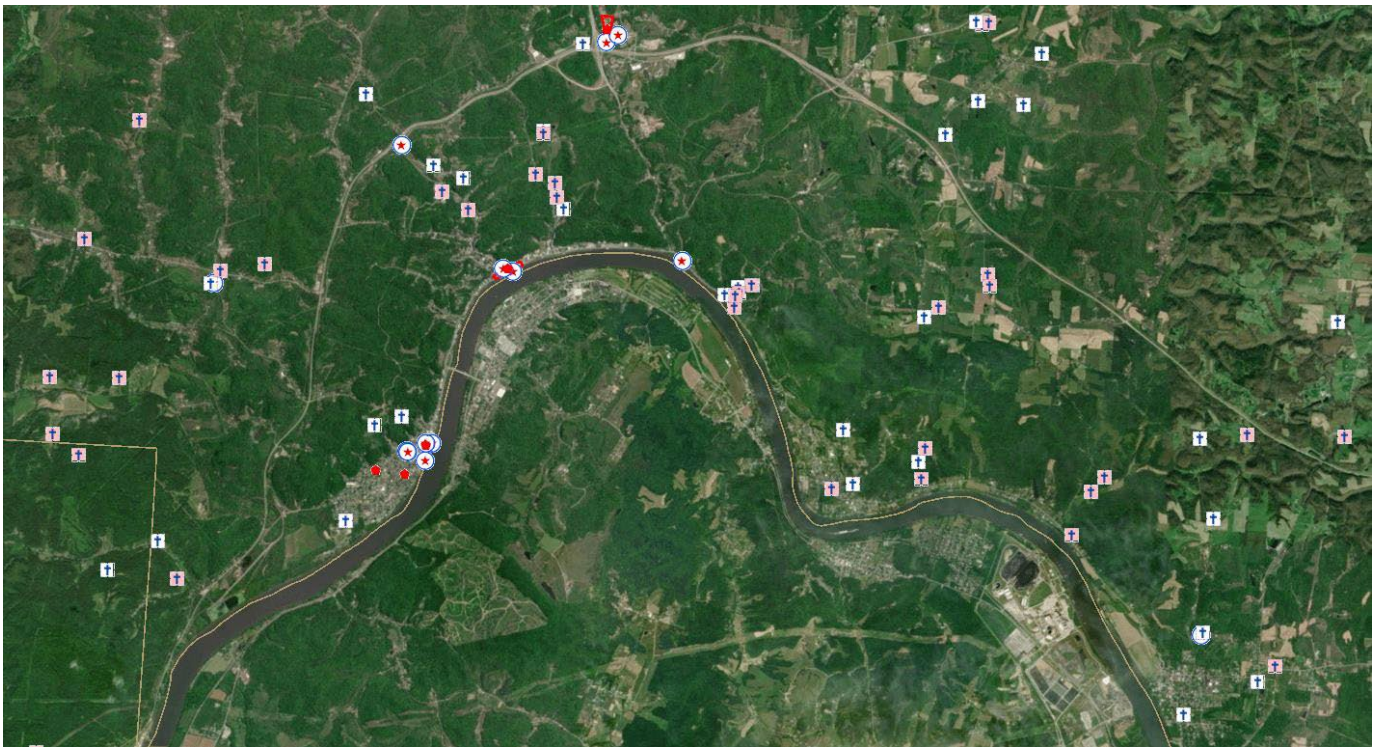
## 5.5 Parks and Recreation

The Meigs County Chamber of Commerce provides highlights of recreational amenities, both private and public. Further investigation would be required to provide a complete inventory of amenities. The COVID-19 pandemic resulted in a surge in outdoor recreation demand, such as hiking. No trail maps or other information relating to hiking and biking amenities were discovered during the audit. Creating a county Outdoor Recreation Plan may benefit the county's development.

## 5.6 Historic Resources

The study area is rich in historic resources, with many historical markers and sites identified by Ohio History Connection. No historic districts have been delineated for regulatory and redevelopment purposes.

*Figure 7: Historic resources. Source: Ohio History Connection.*



## 6.0 Comparison Communities

Two comparable communities were selected to serve as riverport case studies and highlight best practices to guide future development. Both communities were selected based on similar population size as Middleport and Pomeroy and are existing ports of call for river cruise lines. The local examples of Gallipolis, OH, and Point Pleasant, WV, were not selected as they may compete directly with the riverfront consortium villages for tourism and recreation dollars.

### 6.1 New Madrid, MO

New Madrid, Missouri, is a riverboat city on the Mississippi River. The city is famous for lying in the New Madrid Seismic Zone, and the city has centered its branding on the prevalence of earthquakes and its historic resources. The New Madrid Chamber of Commerce manages tourism marketing and development for the city, including the relationship with the riverboat cruise lines. Riverboat stop schedules are actively posted on the city event calendar,

### 6.2 Dover, TN

Dover, Tennessee, is the county seat of Stewart County and a long-time riverboat community that lies along the Cumberland River. The city's relationship with riverboat tourism started when the city expressed interest in providing tours of the Civil War battlefield at Ft. Donelson National Cemetery. The Stewart County Chamber of Commerce now manages the relationship with the riverboat.

### 6.3 Summary

Common themes emerged from the American Structurepoint interviews of the comparison communities for the consideration of the riverfront consortium.

#### 6.3.1 Branding and Marketing

Both communities have robust marketing efforts with high online visibility through municipal and chamber of commerce websites. The comparison communities landed the riverboat stop through effective community branding and noted that the riverboat operators were attracted to their unique historic resources and "small town feel." Each community drives the narrative using guided tours developed by the community and offers promotions to local attractions targeted at riverboat passengers.

The Meigs County Chamber of Commerce has an attractive, accessible, and informative website to advertise amenities and attractions in the study area and beyond. By comparison, municipal websites appear outdated, are fragmented, and, in the case of Pomeroy, are non-existent. Expanding community branding and visibility will be crucial to leverage the proposed riverboat stop fully.



### 6.3.2 Walkability

Most daytime riverboat stops are four hours. The comparison communities provide guided activities that can be easily accessible by pedestrians of all mobility abilities within the allotted timeframe (New Madrid), or the municipality provides bus services for those activities (Dover). For riverboat attraction and general community development, walkability should be prioritized. Below is the average 2022 National Walkability Index for each community. The Walkability Index is a census block scoring system that looks at various factors, such as sidewalk condition. Scoring is 1 to 20, with 20 being the most walkable. Some areas in each community may be more walkable than the score; however, each index provides a reasonable benchmark for this study. The last sidewalk study found was conducted by Buckeye Hills in 2014. Future community development efforts should inventory sidewalk conditions. Communities should assess connectivity and barriers to accessibility.

Pomeroy	Racine	Syracuse	Middleport
<ul style="list-style-type: none"> <li>• 7.83</li> <li>• Below Average</li> </ul>	<ul style="list-style-type: none"> <li>• 8.50</li> <li>• Below Average</li> </ul>	<ul style="list-style-type: none"> <li>• 6.00</li> <li>• Below Average</li> </ul>	<ul style="list-style-type: none"> <li>• 12.17</li> <li>• Above Average</li> </ul>

### 6.3.3 Refuse and Potable Water Service

In addition to meeting the specifications to accommodate a +400' boat, riverports must have refuse and potable water service to attract a riverboat. Riverboats in the comparison communities paid usage surcharges for both services.

A water study for the study area is highly encouraged to provide an inventory of infrastructure needs for all villages and to ensure Pomeroy has adequate service for the proposed riverboat stop. Refuse service will also be a critical design consideration.

## 7.0 Flood Hazard Areas

The Ohio River is Meigs County’s greatest asset and most significant hazard. According to the 2023 Meigs County Hazard Mitigation Plan, Pomeroy has suffered the most damage of the riverfront consortium due to extensive development within the floodplain. Over the last 20 years, Meigs County has experienced 12 Presidential Declared flooding or flash flooding disasters with over \$13.2 million in damages. Addressing development in the floodplain is critical for public safety and community vitality. All future community and economic development efforts must factor in floodplain development regulation as compliance is required and can be expensive and lengthy. However, not complying with floodplain development regulations can result in losing life, property, grant funding, and financing opportunities.

### 7.1 Existing Flood Hazard Areas

The Federal Emergency Management Agency (FEMA) provides flood insurance for properties in flood-prone areas through the National Flood Insurance Program (NFIP). Communities must opt into the NFIP and adopt a local floodplain management ordinance that meets the minimum criteria set by FEMA. The floodplain management program sets regulations on new development and alterations to existing properties that intend to reduce “comprehensive flood risk,” including promoting public safety, reducing property damage from floods, and reducing the costs associated with recovery from a flood event. In addition to Meigs County, the Villages of Middleport, Pomeroy, Racine, and Syracuse all participate in the NFIP.

FEMA has developed Flood Insurance Rate Maps (FIRMs) with their accompanying Flood Insurance Studies (FISs) throughout the United States to identify flood risk zones. The specific focus relevant to community floodplain management programs is the Special Flood Hazard Area (SFHA), which is defined as the flood risk zone that is expected to flood from the “100-year flood” event and is shown as flood zones that start with the letter A on FIRMs. That is, properties within the SFHA have a 1 percent risk of flooding in any given year. See the figures below for SFHA mapping for each of the four villages. Properties within the SFHA have a 26 percent risk of flooding at least once during the lifetime of a typical 30-year mortgage. The “500-year flood,” or 0.2% annual chance flood zone, has less risk than the floodplain; however, it is not hazard-free and, therefore, has regulation implications. Any construction or development within the SFHA must be coordinated with the local floodplain administrator for compliance with the local floodplain management program.

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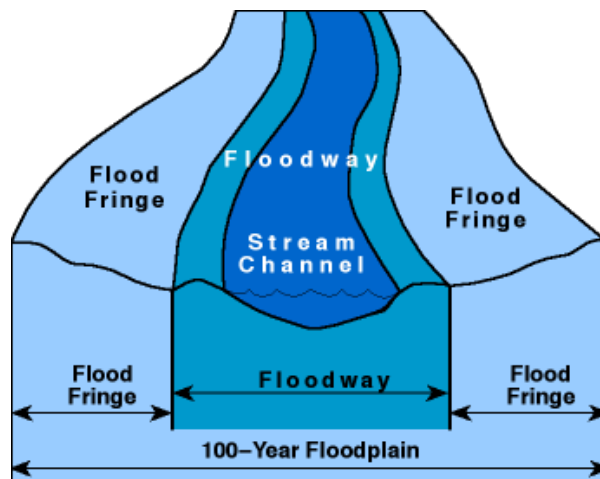
*Mapped extents of the SFHA are shown on the FIRM panels developed by FEMA. Convenient yet approximate identification of a property’s location relative to the SFHA is available via the “FIRMette” web tool available on FEMA’s website (<https://msc.fema.gov/portal/home>). The web tool identifies the corresponding FIRM panel and provides for electronic download to allow more accurate mapping.*

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Properties within the SFHA are identified based on the Base Flood Elevation (BFE) or the expected elevation of the water surface resulting from the 100-year flood. Therefore, the depth of expected flooding at a property can be established by subtracting the ground elevation from the BFE. All land with a ground elevation below the BFE is within the SFHA and must comply with the local floodplain management program. See the figures below for SFHA mapping for each of the four villages.

As shown in Figure 8, FIRMs further distinguish the interior zone within the SFHA as a regulatory floodway from the exterior zone or flood fringe. The floodway is considered the minimum land area required to maintain the flow of the 100-year flood. The deepest and fastest-flowing floodwaters are expected to be encountered within the floodway, and they will have the most potential to carry larger debris, making it the most hazardous part of the flood zone. The boundaries of regulatory floodways have been established by hydraulic analyses that consider the shape of the landscape and any structures in place at the time of the FIRM development. Any new construction or landscape alterations within the regulatory floodway have the potential to restrict floodwater's ability to discharge from the region, consequently resulting in deeper flooding. The impact of development within the regulatory floodway can be calculated as a corresponding rise in the BFE, and the local floodplain management program will have designated a limit on the allowable rise that a project may cause. Compensatory storage will be required to be provided.

Figure 8: Floodplain diagram. Source: [Floodplains](#).





The BFE is the reference point for establishing criteria guiding new construction within the SFHA. An additional safety margin above the BFE referred to as “freeboard”, is used to control for uncertainty in the actual flood depth that could occur. Required freeboard is one foot for most properties, except for some facilities with functions critical to public wellbeing. Furthermore, some communities may adopt increased freeboard requirements in their local ordinances. The BFE plus the freeboard is the Flood Protection Grade (FPG).

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### *Can the FIRM be incorrect?*

*While FIRMs are scalable maps, sometimes a parcel may have been inadvertently mapped as being in the floodplain. On-site conditions may reveal that the property is not in the SFHA. To confirm, elevation shots need to be taken by a professional surveyor to confirm that the existing natural grade is higher than the BFE and/or flood protection grade. The property owner should file a Letter of Map Amendment (LOMA) if confirmed.*

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Figure 9: Pomeroy flood hazard areas. Source: FEMA.

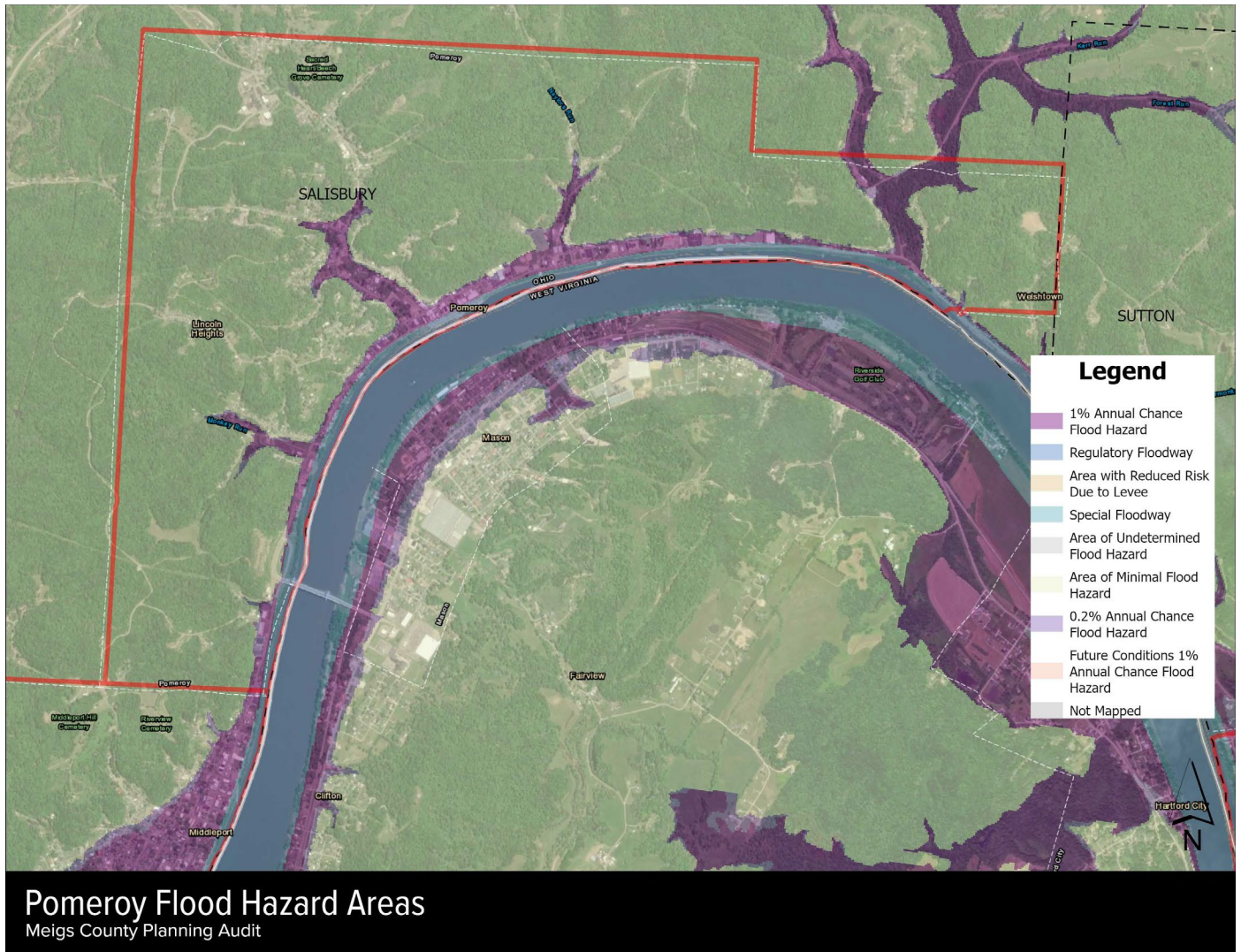


Figure 10: Pomeroy riverport flood areas. Source: FEMA.

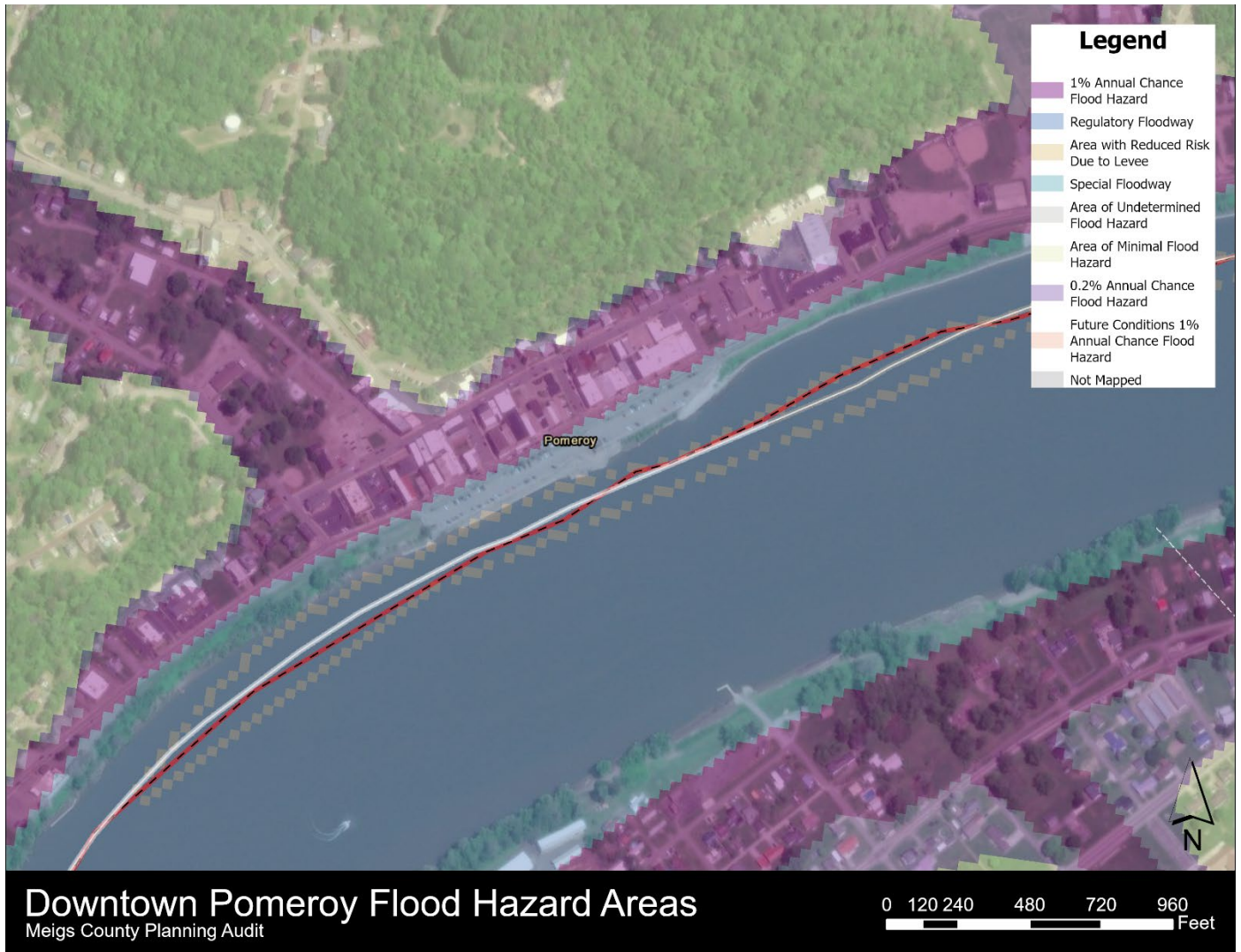




Figure 11: Middleport flood hazard areas. Source: FEMA.

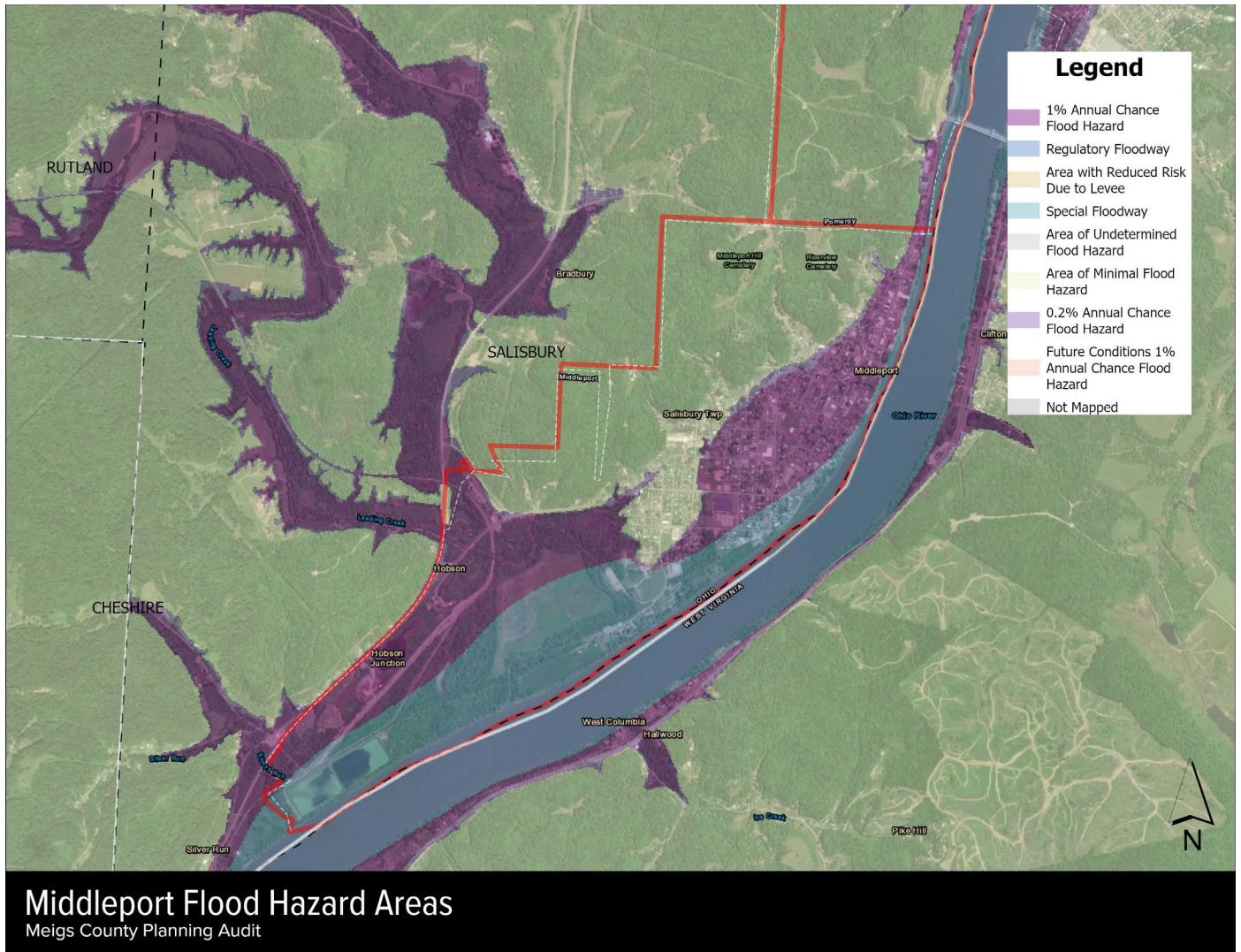


Figure 12: Syracuse flood hazard areas. Source: FEMA.

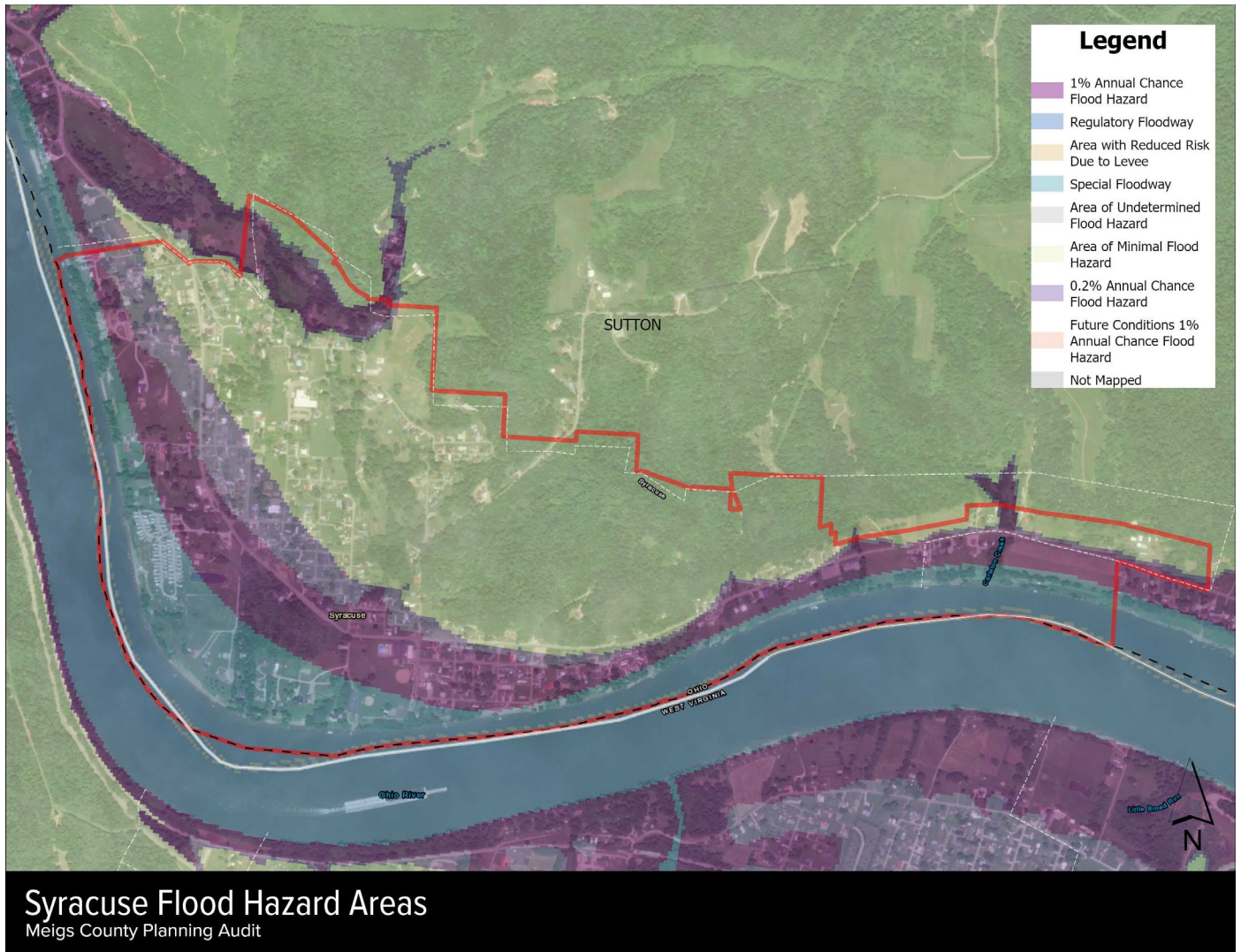
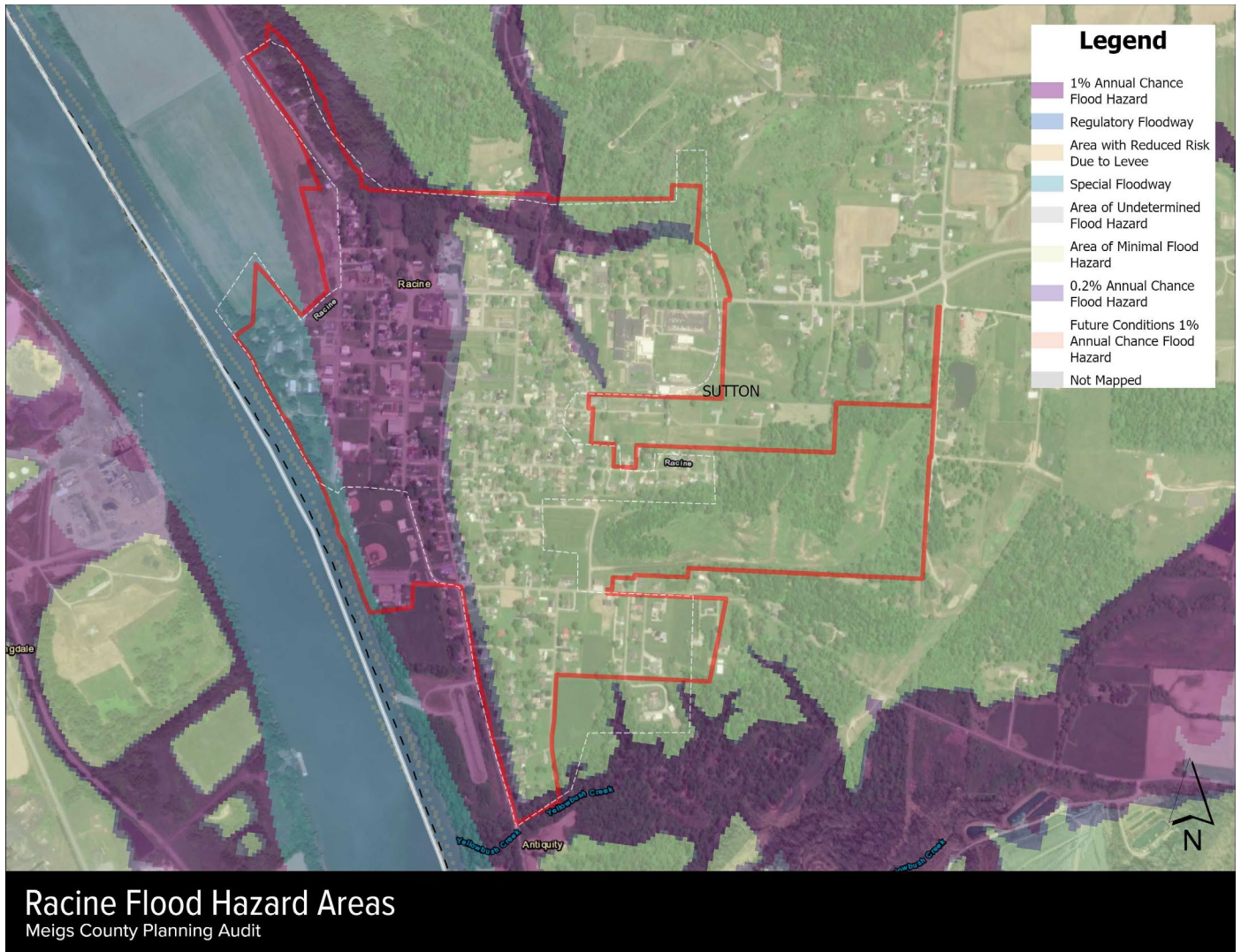




Figure 13: Racine flood hazard areas. Source: FEMA.



## 7.2 Flood Zone Development Best Practices

Flood zone development regulations can be divided by type of project, alterations to existing structures versus new construction, and location, whether within a floodway, flood fringe, or the Ohio River. Some requirements, such as no new basements, apply to all types and locations.

### 7.2.1 Retrofitting Existing Structures

The riverfront villages of Meigs County have downtowns with beautiful historic structures, many of which need rehabilitation. Existing properties built before the local adoption of NFIP standards are not subject to the same requirements as new construction. Upgrading/retrofitting these older properties to be more resilient regarding flooding is incentivized by FEMA via NFIP insurance rate discounts for certain types of retrofits. However, it should be noted that some retrofit methods will not qualify for NFIP rate discounts. Some of these “non-qualifying” retrofit methods are described herein to present a complete array of available options. Despite not achieving a rate discount, some such methods may be desirable for other reasons and will still help reduce risks associated with flooding. Significant property redevelopment may constitute a “substantial improvement” that would subject the property to more stringent requirements.

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*“Substantial improvement” is defined by the local floodplain management ordinances, but **typically is triggered when total construction costs equal or exceed 50% of the property value.** In general, floodplain management ordinances will prohibit the same retrofit approaches for substantially upgraded properties as those which do not qualify for NFIP rate reductions.*

*For more information about how this rule is applied, see [FEMA’s Substantial Improvement/Damage document](#).*

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The best practices described herein for retrofit of existing structures in a flood zone are based on NFIP requirements (which will have been adopted by local ordinances as criteria for admission to the NFIP), as well as recommendations contained within ASCE 24 – Flood Resistant Design and Construction which may or may not be requirements adopted by the local ordinances.

The general goals of all retrofit approaches are to prevent floodwater from reaching occupied spaces or critical building systems (electrical, mechanical, etc.) and prevent damage to the building structure from the forces/loads imparted by the flood. Most standards rely on the 100-year flood BFE; however, elevating critical building systems is held to the 500-year flood BFE per Executive Order 11998.



### ***A. Retrofit Approach 1: Elevate***

The entire building can be lifted so the lowest floor is above the BFE by at least the required freeboard. The process typically detaches the structure from the foundation, raises it on hydraulic jacks, and provides temporary shoring/cribbing while permanent supports are constructed. Permanent supports may be continuous walls, individual piers/columns, or piles, and may require the installation of new foundations or strengthening/adding to the existing foundations.

An alternative approach can be pursued to elevate only the lowest floor in some buildings when the required increase in height is relatively small. The existing floor can be removed and rebuilt at a higher elevation on the existing walls without raising the rest of the enclosed structure (walls, upper floors, and roof). However, the applicability of this approach is limited by the available headroom between the first and second floors. It requires verification that the floor can be adequately supported at the raised location on the walls. As a workaround, the upper floors and roof could likewise be elevated within the building to maintain adequate headroom.

Another approach in the “Elevate” category would be to construct new levels of the building above the existing roof and abandon occupied use of the levels of the building below the BFE, using them only for storage purposes and either “wet floodproofing” or “dry floodproofing” them (see following sections for more detail).

### ***B. Retrofit Approach 2: Wet Floodproofing***

Wet floodproofing is appropriate for structures with only non-occupied spaces below the BFE. Non-occupied areas include garages, crawlspaces, and unfinished basements. The process of wet floodproofing involves modifying these unoccupied spaces to allow floodwater to enter without causing damage to the rest of the building (typically by creating holes in walls through which floodwater can flow). Any building materials in these spaces should consist of flood-resistant materials that can withstand being submerged for an extended period.

Wet floodproofing is a relatively low-cost retrofit option, but additional considerations must be considered. It will not protect any contents stored in the areas that get flooded, and adequate warning time to an impending flood would be required to remove those contents to areas that will remain dry. Furthermore, extensive post-flood cleanup would be required, including pumping water out of the flooded space.

Floodproofed nonresidential structures require the applicant to submit a statement from a registered professional engineer or architect certifying that the proposed construction meets NFIP standards. After construction, the design professional must also submit an as-built certification letter.

### ***C. Retrofit Approach 3: Dry Floodproofing***

Dry floodproofing prevents entry of floodwater into the building by making all parts of the building below the BFE watertight. This approach works best with masonry or concrete buildings. Wood-framed construction is generally not feasible due to the difficulty of making the framed walls watertight and their lack of adequate strength to resist hydrostatic forces (the weight/pressure of floodwater pushing inward on the watertight walls). Depending on the expected flood depth at the site, the walls may require strengthening against hydrostatic forces, regardless of the construction type/material.

Dry floodproofing strategies must typically include deployable flood barriers placed or raised when a warning of imminent flooding is received. These barriers can be used to block entry of water as well as prevent damage from hydrostatic pressure and are most deployed to protect windows and doors of street-facing storefronts. Many sizes and types of barriers are available, including some that can deploy automatically as floodwaters rise. Most, however, require varying degrees of human intervention and effort to put in place when a warning of an impending flood is received. The effectiveness of some types of deployable barrier systems may be compromised when floodwaters are swift or carry large debris (which could knock the barriers out of place). Therefore, the effectiveness of dry floodproofing may be lessened for buildings located within a regulatory floodway or another flood zone where floodwaters are expected to be relatively deep or fast-flowing.

It is recommended that dry floodproofing strategies only be used when the expected warning time for a flood exceeds the time required to prepare the dry floodproofing systems. Dry floodproofing would likely be appropriate for many flood-prone sites in Meigs County along the Ohio River since “riverine” flooding typically involves a slow, steady rise of the river water level with long warning times. Dry floodproofing would be less appropriate for areas with “flash flood” hazards, such as smaller creeks and ravines’ low-lying areas.

When a dry floodproofing retrofit strategy is pursued, at least one exit door is recommended to be located above the BFE to facilitate the evacuation of the building after floodwaters have risen. Maintaining a flood emergency plan for the building is also recommended, and a summary of its key elements and actions should be posted in at least two conspicuous locations.

Floodproofed nonresidential structures require the applicant to submit a statement from a registered professional engineer or architect certifying that the proposed construction meets NFIP standards. After construction, the design professional must also submit an as-built certification letter.

The NFIP does not grant insurance rate reductions for residential buildings that employ a dry-floodproofing retrofit strategy, nor will dry floodproofing comply with floodplain management ordinances for “substantially improved” residential structures. Rate reductions are available for commercial and mixed-use buildings, provided only non-residential areas are dry floodproofed. These non-residential applications would also comply with floodplain management ordinances for “substantially improved” structures.

#### ***D. Retrofit Approach 4: Levees or Floodwalls***

Levees and floodwalls are similar types of barriers that enclose an area of land and block floodwaters from entering. Levees are typically earthen embankments, whereas floodwalls are concrete or masonry structures. Historically, these were popular flood-protection measures at the community level and were built around entire neighborhoods or alongside extensive stretches of rivers. Since the 1970s, however, the construction of new levees and floodwalls for flood protection has been discouraged due to the severe consequences when these systems fail and the high environmental impact, among other factors.

Floodwater can enter the enclosed area via groundwater seepage, and a pump system inside the encircling barrier is necessary. This pump system will also remove rainwater trapped within the enclosed area. Openings are required to allow access to the area enclosed by a levee or flood wall. Such openings can be protected by deployable barrier systems like those used in a dry floodproofing strategy and, therefore, have the same use limitations. Shorter flood warning times and deeper/faster floodwaters make these systems less effective.

Neither levees nor floodwalls added to an individual property will qualify for NFIP rate reduction, nor will they comply with floodplain management ordinances for “substantially improved” structures.

#### ***E. Retrofit Approach 5: Relocation***

Buildings can be detached from their foundation, placed on a vehicle, and moved to a higher elevation, either on the same or a new property. Feasibility and cost can vary significantly, depending on the size and construction type of the building. Larger buildings can be split up and moved into separate segments as required. The foundation cannot typically be moved, so the construction of a new foundation at the relocation site is necessary, as is the demolition of the old foundation and remediation of the old site.

Relocation may be an appropriate retrofit approach when a property is difficult to adequately protect or when located within the floodway. Relocation can be used to preserve historic structures and avoid making significant modifications.

#### ***F. Retrofit Approach 6: Demolition***

Demolition may be appropriate for some buildings with high flood risks if they are in poor condition or when no other retrofit options are practical. Demolition is also appropriate for abandoned structures in the floodplain that could become flood-borne debris that may damage other properties.

### ***G. Additional Retrofit Considerations***

Regardless of the at-large retrofit method, additional recommendations to make buildings located within the SFHA more flood-resilient include:

- Critical building systems, including but not limited to electrical boxes, furnaces, washer/dryer, and hot water tanks, should be placed above the 500-year BFE (plus freeboard). It may be feasible and effective to encapsulate some such systems in water-tight enclosures rather than relocating them. However, this approach will not qualify for NFIP rate reductions.
- All drains and sewer lines below the BFE should have backflow protection valves.
- Exterior stairs and ramps below the BFE should be designed to resist flood loads with minimal transfer of forces to the building or building foundation.
- Storage tanks (fuel, gas, water, etc.) below the BFE, including in-ground tanks, should be positively anchored to a foundation with adequate capacity to resist calculated buoyant forces, with a recommended safety factor of at least 1.5.
- Elevator cabs that could descend below the BFE must have sensors to prevent descent into floodwaters.
- Fuel supply lines should have float-activated shutoff valves.
- In-ground and above-ground pools require special considerations/design for flood loads.
- No new basements are permitted.

### ***H. Historic Structures<sup>3</sup>***

Historic structures are exempt from the substantial improvement rule either administratively or by variance, depending on local floodplain management ordinances. If the building meets the criteria below, it is not required to be elevated or floodproofed. If the building pre-dates the NFIP, it can also be “grandfathered” and keep a pre-FIRM flood insurance rating status.

1. The building must be an actual “historic structure.”<sup>4</sup> “Historic structures” are those listed in the National Register of Historic Places or the State Inventory of Historic Places or are in a historic district.
2. The building must maintain its historic status. Any changes made to the structure must not destroy or alter the characteristics that made it a historic building. A certified local historic board or the state historic preservation officer must review and approve any alterations before granting a variance.
3. Mitigation measures that must be taken, such as elevating an air conditioner or using flood-resistant materials, are still required.

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<sup>3</sup> [Unit 8 – Substantial Improvement and Substantial Damage.](#)

<sup>4</sup> [Unit 7 – Ordinance Administration.](#)

### 7.2.2 New Construction

New construction within the flood fringe and does not require fill requires a permit through each village's floodplain manager and must meet local floodplain development standards. An exception to local flood ordinances is when federal grant monies are used for a project, in which case FEMA's federal floodplain development standards apply.

New construction in the four villages will likely require fill or floodway encroachment. For new construction within the floodway or that proposes fill in the floodplain, a Letter of Map Revision (LOMR) or Conditional Letter of Map Revision (CLOMR-F) must be submitted to FEMA. Before a CLOMR is submitted, an Endangered Species Act (ESA) report must be filed. Afterward, both application types require the following to be prepared by a professional engineer: hydrologic and hydraulic computations, an as-built survey, and design plans. The biggest challenge construction faces in the floodplain is proving that the proposed project will not result in a BFE increase. There can be no rise for projects in the floodway, and for projects in the flood fringe (Zone AE), the rise cannot exceed 1 foot. If a rise is determined, a professional engineer must evaluate alternatives to the proposed project that would not result in a BFE increase and justify why those alternatives are not feasible.

Part of the CLOMR process is public notification of all impacted property owners. Given the immense reach of the Ohio River, many property owners are expected to be impacted. Impacted property owners have the right to appeal projects.

LOMR application fees are between \$6,500 and \$9,250. Once received by FEMA, a complete application requires six to eight weeks of processing. Engineering costs and timeframe to prepare the required application items vary by scope.

Additionally, certain development activities, such as constructing piles in the river, require permits through the Huntington District of the US Army Corps of Engineers (USACE). The USACE has jurisdiction over the Ohio River, the lock and dam at Racine, and any delineated wetlands. Most projects will fall under the Nationwide Programs (NWP). For a complete list of current Ohio NWPs valid until March 2026, see the [USACE 2022 Public Notice on NWPs](#). Based on community development priority projects expressed at the meeting in April 2023, the following NWPs are likely to be of most interest to the riverfront consortium:

- NWP 42 – Recreational Facilities
- NWP 36 – Boat Ramps

NWPs generally will require full construction drawings and fees based on acreage. Review can take up to 12 months for review. The application could be submitted at the same time as any required LOMRs.