

1.0 INTRODUCTION

Purpose

The purpose of the mitigation plan is to identify risks and vulnerabilities from hazards that affect Columbiana County, Ohio. With these risks and vulnerabilities identified, local officials can reduce losses of life, injuries, and to limit future damages by developing methods to mitigate or eliminate damages.

Scope

The *Columbiana County Hazard Mitigation Plan* follows a planning methodology that includes public involvement, a risk assessment for various identified hazards, an inventory of critical facilities and at-risk areas, a mitigation strategy for high-risk hazards, and a method to maintain and update the plan.

Plan Authority

The *Columbiana County Hazard Mitigation Plan* is “multi-jurisdictional,” meaning that it includes several jurisdictions. Columbiana County stakeholders prepared this plan per federal requirements outlined in the Disaster Mitigation Act of 2000 (DMA2K), which requires communities to formulate a hazard mitigation plan to be eligible for mitigation funds made available through the Federal Emergency Management Agency (FEMA). Section 322 of the Robert T. Stafford Act requires that local jurisdictions develop and submit plans meeting the criteria outlined in 44 CFR Parts 201.6.

When the content of this plan corresponds to a requirement of 44 CFR 201.6, it will include a description of the relevant guidance. The following table lists the requirements of 44 CFR 201.6 and identifies the sections of the plan fulfilling the guidance.

44 CFR 201.6 REQUIREMENTS IN THIS PLAN		
<i>Section</i>	<i>Description</i>	<i>Section in Plan</i>
§ 201.6	Local Mitigation Plans. The local mitigation plan is the representation of the jurisdiction's commitment to reduce risks from natural hazards, serving as a guide for decision makers as they commit resources to reducing the effects of natural hazards. Local plans will also serve as the basis for the state to provide technical assistance and to prioritize project funding.	Section 1.0 Introduction
§ 201.6(a)(4)	Multi-jurisdictional plans may be accepted, as appropriate, as long as each jurisdiction has participated in the process and has officially adopted the plan.	Section 1.1 The Planning Process

44 CFR 201.6 REQUIREMENTS IN THIS PLAN		
Section	Description	Section in Plan
§ 201.6(b)(1)	An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval	Section 1.1 The Planning Process Section 4.3 Continued Public Involvement
§ 201.6(b)(2)	An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process	Section 1.1 The Planning Process
§ 201.6(b)(3)	Review and incorporate, if appropriate, existing plans, studies, reports, and technical information	Section 1.3 Capabilities Section 1.4 Trends & Predictions Section 4.2 Implementation through Existing Programs
§ 201.6(c)(1)	Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved	Section 1.1 The Planning Process
§ 201.6(c)(2)	A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.	Section 2.0 Risk Assessment
§ 201.6(c)(2)(i)	The risk assessment shall include a description of the type, location, and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.	Section 2.1 Hazards Identification Section 2.3 Hazard Profiles
§ 201.6(c)(2)(ii)	The risk assessment shall include a description of the jurisdiction's vulnerability to the hazards described in paragraph (c)(2)(i) of this section. This description shall include an overall summary of each hazard and its impact on the community. All plans approved after October 1, 2008, must also address NFIP insured structures that have been repetitively damaged by floods.	Section 2.3 Hazard Profiles Section 2.4 Hazard Rankings
§ 201.6(c)(2)(ii)(A)	The plan should describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard areas;	Section 2.3 Hazard Profiles
§ 201.6(c)(2)(ii)(B)	The plan should describe vulnerability in terms of an estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(ii)(A) of this section and a description of the methodology used to prepare the estimate;	Section 2.3 Hazard Profiles
§ 201.6(c)(2)(ii)(c)	The risk assessment shall provide a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.	Section 1.4 Trends and Predictions
§ 201.6(c)(2)(iii)	For multi-jurisdictional plans, the risk assessment section must assess each jurisdiction's risks where they vary from the risks facing the entire planning area.	Section 2.3 Hazard Profiles
§ 201.6(c)(3)	A mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.	Section 3.0 Mitigation Strategy
§ 201.6(c)(3)(i)	This section shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.	Section 3.1 Mitigation Goals

44 CFR 201.6 REQUIREMENTS IN THIS PLAN		
Section	Description	Section in Plan
§ 201.6(c)(3)(ii)	This section shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the NFIP, and continued compliance with NFIP requirements, as appropriate.	Section 3.2 Mitigation Actions
§ 201.6(c)(3)(iii)	This section shall include an action plan describing how the actions identified in paragraph (c)(3)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost-benefit review of the proposed projects and their associated costs.	Section 3.2 Mitigation Actions
§ 201.6(c)(3)(iv)	For multi-jurisdictional plans, there must be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.	Section 3.2 Mitigation Actions
§ 201.6(c)(4)(i)	A plan maintenance process that includes a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.	Section 4.1 Monitoring, Evaluating and Updating the Plan
§ 201.6(c)(4)(ii)	A plan maintenance process that includes a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms such as comprehensive or capital improvement plans, when appropriate.	Section 4.2 Implementation through Existing Programs
§ 201.6(c)(4)(iii)	A plan maintenance process that includes discussion on how the community will continue public participation in the plan maintenance process.	Section 4.3 Continued Public Involvement
§ 201.6(c)(5)	Documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval of the plan (e.g., City Council, County Commission, Tribal Council). For multi-jurisdictional plans, each jurisdiction requesting approval of the plan must document that it has been formally adopted.	Section 5.0 Appendix 6
§ 201.6(d)(1)	Plans must be submitted to the State Hazard Mitigation Officer (SHMO) for initial review and coordination. The State will then send the plan to the appropriate FEMA Regional Office for formal review and approval. Where the State point of contact for the FMA program is different from the SHMO, the SHMO will be responsible for coordinating the local plan reviews between the FMA point of contact and FEMA.	Section 5.0 Appendix 6
§ 201.6(d)(3)	A local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within five years in order to continue to be eligible for mitigation project grant funding.	Section 3.1 Mitigation Goals Section 3.2 Mitigation Actions Section 5.0 Appendix 2

1.0 INTRODUCTION

1.1 Planning Process

§ 201.6(c)(1)	Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.
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Columbiana County, through the direction of the Columbiana County Emergency Management Agency (CEEMA) began the process to update this plan in September of 2018; the CEEMA contracted the services of JH Consulting, LLC, of West Virginia, (the consultant) to aid in the process. The consultant met with CEEMA to layout the process and timeline for the update and determine the agency, department, organization, and jurisdictional representatives who would serve as committee members.

1.1.1 Planning Committee

The following table outlines the committee members that actively participated in the update of this plan.

PLANNING COMMITTEE MEMBERS AND AFFILIATIONS		
<i>Agency/Affiliation</i>	<i>Name</i>	<i>Title</i>
Buckeye Water	Al DeAngelis	District Manager
Buckeye Water	Todd Brown	N/A
Columbiana County Development Department	Tad Herold	Director
Columbiana County Emergency Management Agency	Brian Rutledge	Deputy Director
Columbiana County Emergency Management Agency	Peggy Clark	Director
Columbiana County Engineer	Troy Graft	Chief Deputy Sanitation Engineer
Columbiana County Health District	Paula Cope	PHEP Program Director
Columbiana County Health District	Wes Vins	Health Commissioner
Columbiana County Port Authority	Penny Traina	Chief Executive Officer
Community Action Agency of Columbiana County	Deb Hill	N/A
East Liverpool Fire	Bill Jones	Fire Chief
Heritage Environmental Services	Raymond Wayne	N/A
National Association of Conservation Districts	Pete Conkle	N/A
Salem Regional Medical Center	Deanna Danner	N/A

The committee came together five times throughout the process. The first meeting was in person at the CCEMA conference room/emergency operations center (EOC) on November 1, 2018. The second meeting took place online via web conference on February 13, 2019. The third meeting was again in person at the CCEMA conference room on March 12, 2019. The next online committee meeting took place at the CCEMA conference room on April 23, 2019. The final in-person committee meeting also took place at the CCEMA conference room on June 11, 2019. See Appendix 1 for agendas, meeting minutes, etc. The CCEMA requested input from neighboring jurisdictions via email; see Appendix 1 for a copy of the email.

As noted in the table above, the CCEMA provided opportunities for local and regional planning agencies (e.g., Buckeye Water) and other partners (e.g., healthcare facilities) to participate. Additionally, the CCEMA invited the following agencies to ensure participation by those with the authority to guide or regulate development in several sectors within Columbiana County.

- Columbiana County Development Department (i.e., community and economic development)
- Columbiana County Engineer (i.e., transportation, water, and sewer infrastructure)
- Columbiana County Health District (i.e., public health)
- Columbiana County Port Authority (i.e., transportation infrastructure and economic development)
- Community Action Agency of Columbiana County (i.e., human services and vulnerable populations)
- Heritage Environmental Services (i.e., environmental considerations)
- National Association of Conservation Districts (i.e., environmental considerations)

Municipal participation was also important. The CCEMA staff and the county's consultant reached out directly to municipal officials to gauge their concerns about the hazards included in the plan, existing project status, and new projects. Several city, village, and township officials completed an online "capability survey." Finally, the sixth planning meeting specifically targeted municipal officials and provided an opportunity to share municipal concerns, project ideas, etc. It occurred on October 15, 2019, at the CCEMA conference room. See the table in Section 1.1.2 below for additional information.

The county's consultant made the draft plan available to committee members via a shared Google Drive. The consultant began loading narratives into the shared drive on October 31, 2019, and drafts remained available for review through the end of 2019.

Committee Meeting 1

The first committee meeting gave members the opportunity to familiarize themselves with each other and with the plan; many of the members had served as committee members on previous updates of this plan, and some members were new to the process. The consultant explained the requirements of the plan and the steps through which the update would occur. The consultant also laid out the expectations for the committee members for participation in the update.

This first meeting focused mainly on getting reacquainted with the plan and reviewing the projects and goals from the previous update in 2013. The committee members discussed the key items that are important in creating a mitigation strategy; they discussed the problems they face as a county and in their jurisdictions, and they presented ideal solutions that would feed into the overall goals for this updated plan. For further information on the goals and the process by which the committee updated the goals, refer to Section 3.1: Mitigation Goals.

Committee members also discussed the public involvement requirement of the plan; they approved (with minor changes) a survey that the consultant had presented as an example to garner public input.

Committee Meeting 2

The second committee meeting was online via a web conference. There were two main agenda items for this meeting: discussion and approval of the goals and discussion of hazards included in the plan. The consultant presented the eight goals that the committee had discussed changing from hazard-driven to comprehensive in the first meeting; they approved them with minor changes to wording. Then, the discussion turned to updating the hazard list for the plan. The committee decided to keep all of the hazards they included in the previous plan updates but expand the list. The extreme heat profile will now be under the heading of 'extreme temperatures' so it can include cold. A new hazard was added under the 'public health emergency' heading. The modifications bring the total number of hazards profiled in the plan to ten.

Committee Meeting 3

The third committee meeting was an in-person meeting. The consultant distributed the current results of the public survey, and the committee discussed those results. Based on public feedback, the committee felt as if the hazard list was appropriate and that its initial ideas as to

possible projects were valid. The committee then discussed the project list in-depth and decided to significantly revise it, effectively right-sizing the project list and removing vague, redundant, or unfeasible projects. To conclude the meeting, the committee began formulating a plan maintenance process.

Committee Meeting 4

The fourth committee meeting was an online meeting. The consultant distributed the current results of the public outreach efforts. Following a review of survey results, the committee discussed in-person public involvement. To conclude the meeting, members discussed the asset inventory and the plan maintenance process.

Committee Meeting 5

The fifth committee meeting was an in-person meeting. The consultant presented the plan maintenance process developed during Meeting 4, and the committee requested a few minor changes. The consultant then presented the final results of the public outreach surveys. The bulk of the time in Meeting 5 consisted of project prioritization. Committee members updated the project list throughout the meeting.

Planning Meeting (i.e., Meeting 6)

EMA Director Clark provided attendees with an overview of the hazard mitigation planning process and formally offered municipalities the opportunity to continue as a partner to the county's plan. All in attendance agreed to do so. The majority of the rest of the meeting served as an open floor for attendees to share hazard concerns from the perspectives of their jurisdictions. Attendees also shared ideas about projects that could reduce risks in their jurisdictions.

To conclude the meeting, Columbiana County's consultant shared with attendees the final set of "next steps." All in attendance, as well as the remaining municipalities that wish to be a party to the updated plan, should complete a municipal capabilities survey. That survey asks about local ordinances, plans, staffing capabilities, and the like with the intent of gauging local governments' abilities to implement and administer mitigation projects. The consultant had paper copies for those that wished to complete it by hand, and he noted that he would forward a web link to Director Clark for those that would like to complete the survey online (via Survey Monkey). Director Clark forwarded that link via email on Monday, October 21st.

1.1.2 Jurisdictional Involvement

All of the jurisdictions within Columbiana County participated in the update to this plan. All cities, villages, townships, and the county had the opportunity to provide input for the plan in the following ways.

- Attending meetings
- Completing the online capabilities survey
- Updating their mitigation project lists (which could include updating status of existing projects or adding new projects)
- Providing information for the plan to CCEMA or the consultant via phone or email

The following table identifies what activities jurisdictions completed.

COLUMBIANA COUNTY HMP JURISDICTIONAL TASKS								
Community		Attended Planning Meetings	Online Capability Survey	Projects Update	Added New Projects	Provided Info to CCEMA or Consult.	Promoted Public Involve.	Overall Participation Assessment
Columbiana County	County	YES	YES	YES	YES	YES	YES	YES
Columbiana	City	YES		YES	YES			YES
East Liverpool	City	YES		YES	YES			YES
East Palestine	Village	YES	YES	YES	YES	YES		YES
Leetonia	Village			YES	YES	YES		YES
Lisbon	Village		YES	YES				YES
New Waterford	Village		YES	YES	YES			YES
Rogers	Village			YES	YES	YES		YES
Salem	City	YES	YES	YES	YES			YES
Salineville	Village	YES	YES	YES	YES			YES
Summitville	Village			YES	YES	YES		YES
Washingtonville	Village			YES	YES			YES
Wellsville	Village	YES	YES	YES				YES

1.1.3 Public Involvement

The committee approached the public involvement component in two ways to garner input for the plan: online and in-person. Online, partners promoted a survey that asked residents about their views on hazards, their support for various mitigation actions, and their level of personal preparedness. The committee and CCEMA began posting the survey in mid-February 2019; the survey was open until July 31, 2019. In total, 70 individuals completed the survey. The

public felt most concerned about hazardous materials incidents (50 respondents reported feeling either “concerned” or “very concerned”). Residents also reported concern over weather events, with 43 selecting “concerned” or “very concerned” about severe winter storms and 41 respondents selecting those options for wind and tornado. Residents were the least concerned about dam failures and earthquakes.

Fifty-four (54) of the 70 survey respondents answered a question about mitigation actions they had undertaken at their homes. Of those respondents, 88.89% reported maintaining or removing trees on their property, while 75.93% reported repairing or replacing their roofs. When asked about specific mitigation projects they would support, most respondents selected “upgrading the water and sewer systems” and “planting trees to prevent erosion and promote cooler micro-climates” (73.68% of 57 respondents for each). Survey respondents showed the least support for “buying out properties, relocating homes, or elevating structures that are prone to repetitive flooding” (22.81% of 57 respondents).

The committee utilized the survey data in a number of ways throughout the project. First, as it considered the hazards to include in the plan, members reviewed the hazards that posed concerns to residents. When updating project lists, committee members and participating jurisdictions referenced the types of projects the general public might support based on survey responses.

To garner additional public comment, the CCEMA presented the mitigation planning process at a school preparedness workshop and a Sky Warn training. At these events, the director distributed a condensed public survey and provided education to residents about the hazard mitigation plan. There were 67 responses from these two events. Three questions targeted mitigation and preparedness at the household level.

- Do you have a 72-hour emergency kit in your home? (YES-35 [52.24%], NO-30 [44.78%], I DON'T KNOW-2 [2.99%])
- Do you live in a special flood hazard zone? (YES-2 [2.99%], NO-59 [88.06%], I DON'T KNOW-6 [8.96%])
- If you have homeowner's or renter's insurance, does it include flood insurance? (YES-13 [19.40%], NO-35 [52.24%], I DON'T KNOW-15 [22.39%], I DON'T HAVE INSURANCE-4 [5.97%])

The following table presents the results of a question asking those taking the mini-survey their thoughts on the biggest risk facing Columbiana County. Some respondents marked multiple hazards; for this question, percentages stem from 101 responses.

Risk	Number of Respondents Showing Concern	Percent of Respondents Showing Concern
Hazardous Materials	18	26.87%
Tornado	18	26.87%
Flooding	14	20.90%
Severe Weather	14	20.90%
Wind	10	14.93%
Severe Thunderstorm	8	11.94%
Railroad	4	5.97%
Winter Storm	3	4.48%
Fire	2	2.99%
Public Health	1	1.49%
Radiological	1	1.49%
DID NOT ANSWER	8	11.94%

The CCEMA also asked whether respondents would support the following types of mitigation projects. The numerals indicate the number of respondents that indicated they would support the initiative.

- Supporting educational campaigns aimed at preparing the population for a variety of hazards: 51
- Installing generators in critical facilities such as police and fire stations, hospitals, etc.: 47
- Upgrading the water and sewer systems: 39
- Building shelters for tornadoes and severe weather events: 31
- Promoting the collection and reuse of rainwater such as in rain gardens and green roofs: 22
- Buying out properties or relocating or elevating houses that are prone to repetitive flooding: 13

The CCEMA posted the full draft on its website and publicized its availability. The CCEMA regularly maintains a copy of the county's emergency operations plan and mitigation plan on its website (see <http://www.ccoema.org/links.html>).

1.1.4 Previous Versions

This section contains descriptions of the processes used to update previous versions of the plan (i.e., 2006 and 2015).

First Update (2015)

This 2015 updated version of the *Columbiana County Multi-Jurisdictional All-Hazard Mitigation Plan* was compiled by the CCEMA and its core planning committee (CPC), as well as JH Consulting, LLC of West Virginia. The process was similar to the process used to originally develop the document. In December 2010, the CCEMA, with assistance from the Soil Conservation District compiled a list of potential members for the CPC. The committee included primarily representatives from the county, cities, villages, and the emergency services organizations within the county (i.e., fire, police, etc.). Other organizations that were involved in the process included utility providers, and county engineering staff. In January 2011, the CCEMA hosted a hazard mitigation overview course conducted by the Ohio Emergency Management Agency (OEMA). This course outlined each of the requirements necessary for communities and businesses participating in updating the county Multi-Jurisdictional All-Hazard Mitigation Plan. In February 2011, the CPC met and collectively determined that revision to the existing plan was most appropriate. Stakeholders were to review existing strategies and goals and return updates/additions during follow-up meetings. In May 2011, additional mitigation strategies were added for the following communities; East Palestine, New Waterford, Leetonia, and Hanoverton.

The update process was completed between December, 2010, and February, 2015. It was facilitated through a stakeholders/public meeting. The “stakeholders” meeting were sessions with the CPC. The CCEMA utilized the services of a planning consultant to guide the update process. The consultant provided an objective perspective to ensure that the CPC was achieving the goals that the HMC had intended to achieve in 2006. CPC members consistently reported the actions of the project stakeholders back to the participating jurisdictions. As such, participating jurisdictions and the public were continually updated as to the status of the plan’s preparation.

Feedback received from the CPC and the public provided valuable in the development of the plan. All governmental jurisdictions in Columbiana County were polled in an effort to gather local opinion on prominent hazards and high-priority mitigative actions. As a result, the plan reflected Columbiana County’s specific needs, and proved to be a document county residents felt ownership of, and utilized to make educated decisions to reduce their vulnerability to hazards.

A CPC/public meeting was held during the updating process. The CPC/public meeting was held on September 7, 2012, at the CCEMA facility. The CCEMA invited members of the

CPC to this meeting via memorandum; this meeting was also publicized in the *Morning Journal*, and notice was openly posted at the CCEMA office. The primary topics of discussion were updating the hazard list, discussing any emergencies, or large-scale natural hazard events that had occurred since 2006, updating the asset inventory list, and addressing any new development trends that may have occurred since 2006. This meeting provided the public the opportunity to comment on the existing mitigation plan, as well as the proposed revisions to the document. The meeting was poorly attended by the general public.

Many of the same resources used for research during the original development of the plan were again utilized to update the plan. The Hazard Risk Assessment (HRA) phase of the mitigation plan update was completed using a variety of research techniques. Federal Emergency Management Agency (FEMA) GeoHazards, National Climatic Data Center (NCDC), Spatial Hazard Events and Losses Database for the United States (SHELDUS), and other Internet sites were searched for historical hazard event records. Representatives from JH Consulting, LLC conducted searches of local newspaper archives and existing reports and plans that were on file with the county EMA and participating jurisdictions to assist in the determination of hazard-susceptibility areas. Interviews and other discussions were conducted with numerous local officials, including first responders and other emergency services officials to ascertain the risks associated with particular hazards in specific areas of the county. After identifying the areas in which the hazards were most prominent, they were profiled and positioned into a base map of the county. This geographic information system (GIS)-based map contains several themes with information regarding the individual hazards. Assets (i.e., structures, utilities etc.) were inventoried and loss estimates were calculated for each of the inventoried assets with respect to the hazards profiled on the GIS-based maps. The consultant compiled all project documents and forwarded them to the CCEMA for draft distribution to CPC members. As such, the CPC could comment on the plan as it was being developed. Further, this allowed participating jurisdictions an on-going opportunity to be engaged as participants and to provide input to affect the plan's content, which expedited the adoption process.

During the initial stages of the updating process the CCEMA published an advertisement in the local newspaper inviting the public to review the original plan at the Columbiana County Emergency Operations Center (EOC) during regular business hours. A public comment form was developed and distributed by the CCEMA to any member of public that visited the EOC to review the original plan, allowing them to comment on improvements that could be made to the original plan during the update.

Following the compilation of the updated/revised plan, the CCEMA published an advertisement in the local newspaper inviting the public to review the revised plan at the Columbiana County EOC during regular business hours. Public comment forms were distributed for the revised/updated plan as well. Copies of the updated/revised plan were also made available for the public online at the CCEMA website.

Original Plan Development (2005)

The approach undertaken in the creation of the original mitigation plan for the county can be described as both comprehensive and collaborative. The comprehensive approach includes following the interim final rule guidelines enacted under the DMA2K and FEMA suggested guidelines for the creation of a mitigation plan. Any additional items that Columbiana County and the core group chose to address as part of the comprehensive analysis of their community were addressed as well.

The collaborative portion of creating the plan included working with the different agencies within Columbiana County and coordinating with all participating jurisdictions. The county could not have a comprehensive plan without the coordination of several other agencies. Information was collected from numerous agencies such as the CCEMA. Columbiana County has 10 incorporated areas within its borders. All 10 incorporated communities chose to participate in this planning effort. There were four core group meetings, and one community meeting for public comment on the draft mitigation plan.

The process to create the Mitigation Plan started with the creation of a “mitigation core group” (core group) of decision makers and implementers. In order to lead the planning efforts effectively and on a countywide basis, other representatives were added. The core group included individuals from the following departments and agencies.

The hazard risk assessment (HRA) phase of the original mitigation plan was completed using a variety of research techniques. Federal Emergency Management Agency (FEMA) GeoHazards, National Climatic Data Center (NCDC), and other Internet sites were searched for historical hazard event records. After identifying the areas in which the hazards were most prominent, they were profiled and positioned into a base map of the county. This geographic information system (GIS)-based map contains several themes with information regarding the individual hazards. Assets (i.e., structures, utilities etc.) were inventoried and loss estimates were calculated for each of the inventoried assets with respect to the hazards profiled on the GIS-based maps.

Following the completion of the HRA, the mitigation core group used information such as hazard profiles and loss estimates to formulate mitigation goals, objectives, and strategies. The baseline mitigation strategies were presented to the public at the public review sessions to ensure fair participation from all sectors of the county. However, the public meetings, which were publicized in the local newspaper, were not well attended.

The core group and the designated leaders of the group made sure that every community that participated in this planning effort was aware of their responsibilities as well as how they could represent their community the best. Some suggestions that were incorporated into the initial invitation to participate in the natural hazard mitigation planning effort included:

- Participate in the core group planning meetings representing your community's interests,
- Supply any historic information (background) on natural disasters for your community to the core group,
- Review and comment on the draft mitigation plan,
- Review and select mitigation activities developed by the core group for your community to implement, and
- Be an advocate for final adoption of the mitigation plan by your community.

The incorporated jurisdictions of the county, as well as other agencies that work within the county, were notified of the mitigation planning process. The Columbiana County Emergency Management Agency (CCEMA) created a master list of jurisdictions they felt necessary to participate in this planning effort. The comprehensive list was reviewed to ensure that all the appropriate agencies as well as jurisdictions would be invited to participate in this effort. A core group representing a wide array of political subdivisions, as well as agency and private businesses, was notified of the mitigation planning process.

Prior to commencing this planning process, in addition to contacting the core group, Columbiana County notified adjacent counties as well as the general public regarding this mitigation planning process. The CCEMA sent letters to adjacent counties with contact information for learning more about the planning effort. Columbiana County also issued a press release dated May 13, 2005 inviting concerned citizens in all jurisdictions of the county. The CCEMA Director was the contact source and his contact information was provided.

A final and critical step in the public involvement program was submittal of the plan to communities for review and adoption. Each community was asked to review the plan and formally adopt it. Because the approval represented an official action by their elected officials, communities notified citizens through postings of the meeting agenda at their respective

government centers when the plan was to be discussed and formally adopted. Copies of the plan were also made available at each community's governmental centers. As noted above, the plan was provided to communities in advance of the public meeting in case local officials had questions or wanted to learn more about the plan in advance of their taking action. The few questions that were raised in advance of the meetings to approve the plan were addressed by CCEMA staff.

Upon incorporation of all comments into the draft mitigation plan, the final mitigation plan will be prepared and submitted to Columbiana County in hard copy and digital form. Each incorporated jurisdiction, as well as any township choosing to adopt this mitigation plan as a separate entity from the county, will also receive a digital copy of the plan.

Each community that participates in this planning effort is responsible for administering the various aspects of the mitigation plan including how the plan will be implemented within their particular community. Implementation of the mitigation plan is crucial. The core group must strategize effectively to put the mitigation plan into action. Columbiana County must follow up to translate the goals and objectives, developed during the planning process, into action steps. It is recommended that a monitoring program be included in the mitigation plan.

1.0 INTRODUCTION

1.2 Description of the Planning Area

The description of the planning area contextualizes the remainder of this document. It provides background information on the areas impacted by various hazards and serves as a foundation for mitigation decisions.

1.2.1 Columbiana County Details

This first sub-section provides demographics and other details for Columbiana County. It includes both municipal and unincorporated areas.

Geography

Columbiana County is one of 88 counties in the State of Ohio; the county is located in the northeastern portion of the state and is considered part of the state's Appalachian Region. It is bordered by Mahoning County, OH on the north, Lawrence County, PA on the northeast, Beaver County, PA on the east, Hancock County, WV and the Ohio River on the southeast, and Jefferson County, OH on the south. Metropolitan cities located within close proximity to Columbiana County include Youngstown, OH (17 miles) and Pittsburgh, PA (50 miles).

According to the U.S. Census, the county has a total area of 532 square miles (mi²); Columbiana County varies in elevation from a low of 652 feet above sea level to a high of 1,447 feet above sea level at Round Knob in Madison Township, yielding a maximum relief of 795 feet. Columbiana County has two main watersheds Watershed: the Little Beaver Creek Watershed and the Yellow Creek Watershed, both of which are part of the Ohio River Tributary Watershed: North.

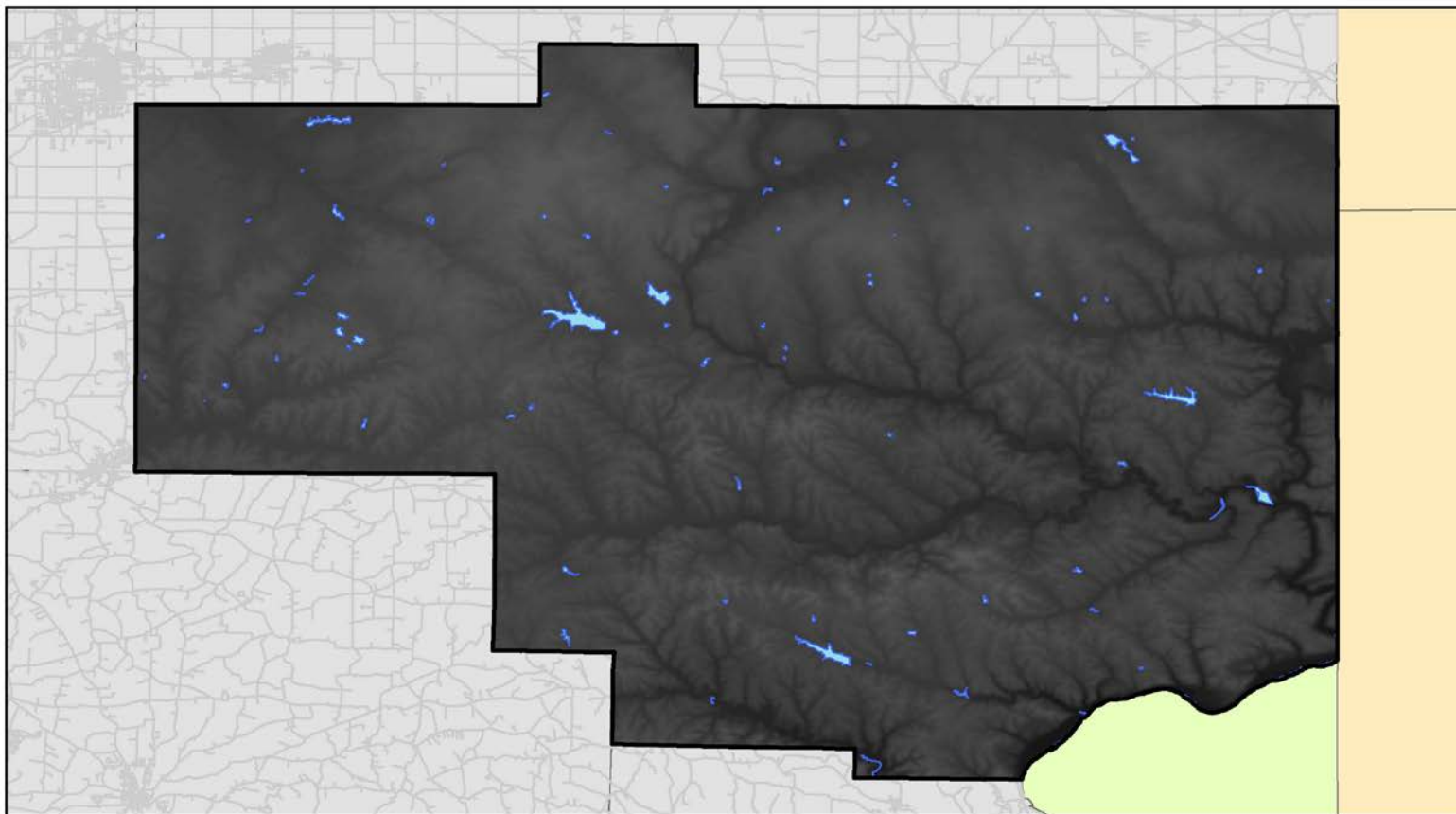
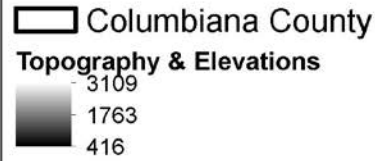
- The **Little Beaver Creek Watershed** comprises approximately 65% of the land area in Columbiana County. The total land of the watershed is 510 square miles, more than half of which is in Columbiana County.
- The **Yellow Creek Watershed** drains 484 square miles (239 from Yellow Creek and 45 from Little Yellow Creek). The Village of Salineville is the only population-dense municipality in the Yellow Creek Watershed.

COLUMBIANA COUNTY HAZARD MITIGATION PLAN

Columbiana County Rivers & Topography

Data Source(s):
ODNR, U.S. Census Bureau

DISCLAIMER: Data is meant for use as reference only. Some sources may be intended to be used at national or regional scales and are thus used beyond their original intent for demonstrative purposes.



Columbiana County’s topography is varied with the northern portion being flat and open, to gently sloping, offering limited protection against strong straight-line winds or tornadoes that may form and touchdown. The southern area of the county, with its rolling hills, has a somewhat higher degree of protection from these hazards.

Demographics

The table to the right presents population estimates for Columbiana County and the municipalities therein. The population density within the incorporated areas of Columbiana County is much higher than in the rural areas; however, unincorporated areas account for the majority of the county’s total population. The map below displays the population of Columbiana County by Census tract.

COLUMBIANA COUNTY POPULATION ESTIMATES	
<i>Municipality</i>	<i>Population (2018 est.)</i>
Columbiana County	105,665
Columbiana (City)	6,231
East Liverpool	10,713
Salem	11,715
East Palestine	4,466
Hanoverton	362
Leetonia	1,851
Lisbon	2,668
New Waterford	1,192
Rogers	226
Salineville	1,229
Summitville	124
Washingtonville	756
Wellsville	3,330

COLUMBIANA COUNTY HAZARD MITIGATION PLAN

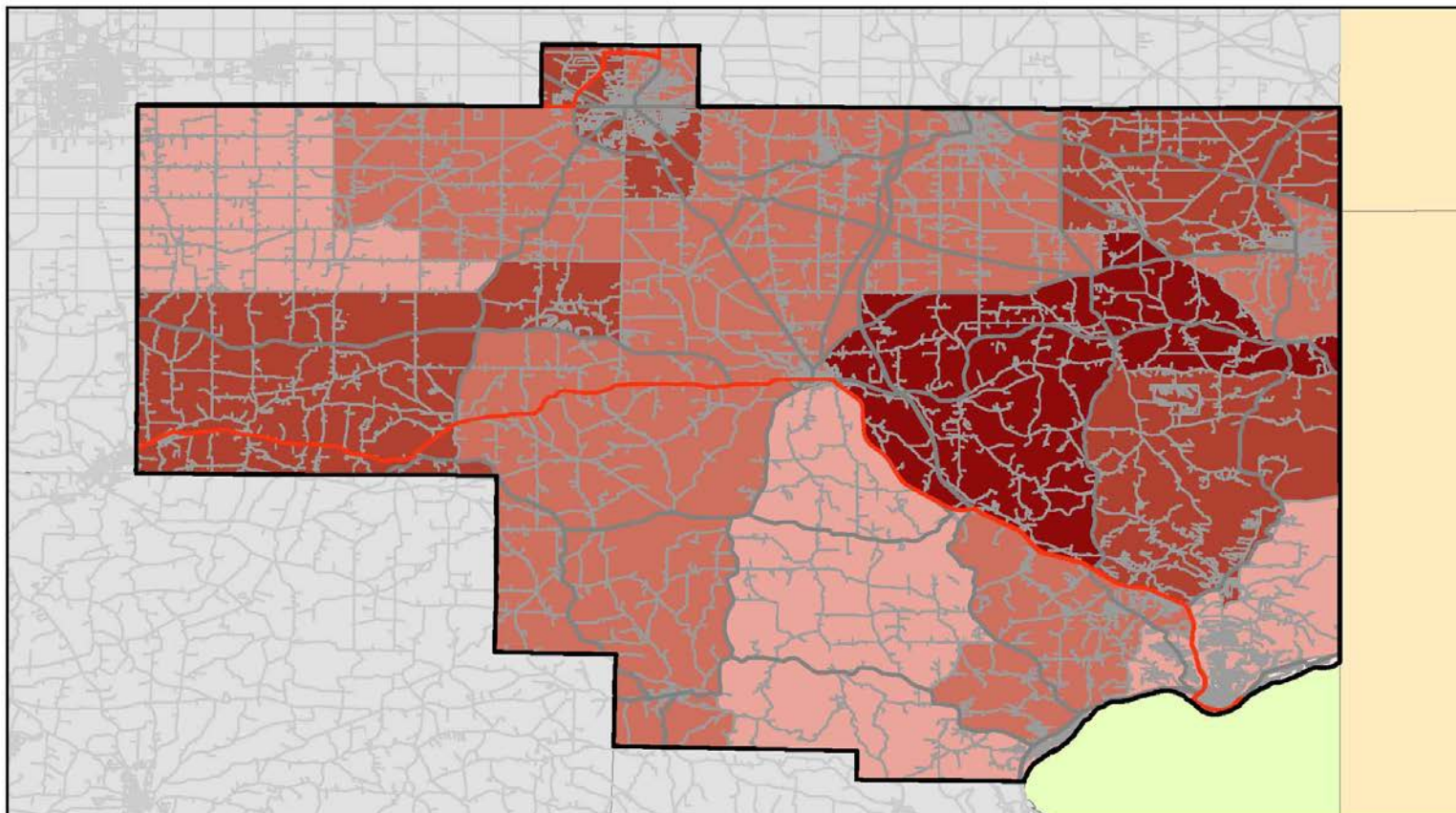
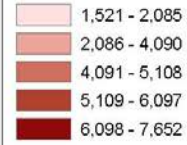
Columbiana County Population by Census Tract

Data Source(s):
U.S. Census Bureau

DISCLAIMER: Data is meant for use as reference only. Some sources may be intended to be used at national or regional scales and are thus used beyond their original intent for demonstrative purposes.



Persons per Census Tract (2010)

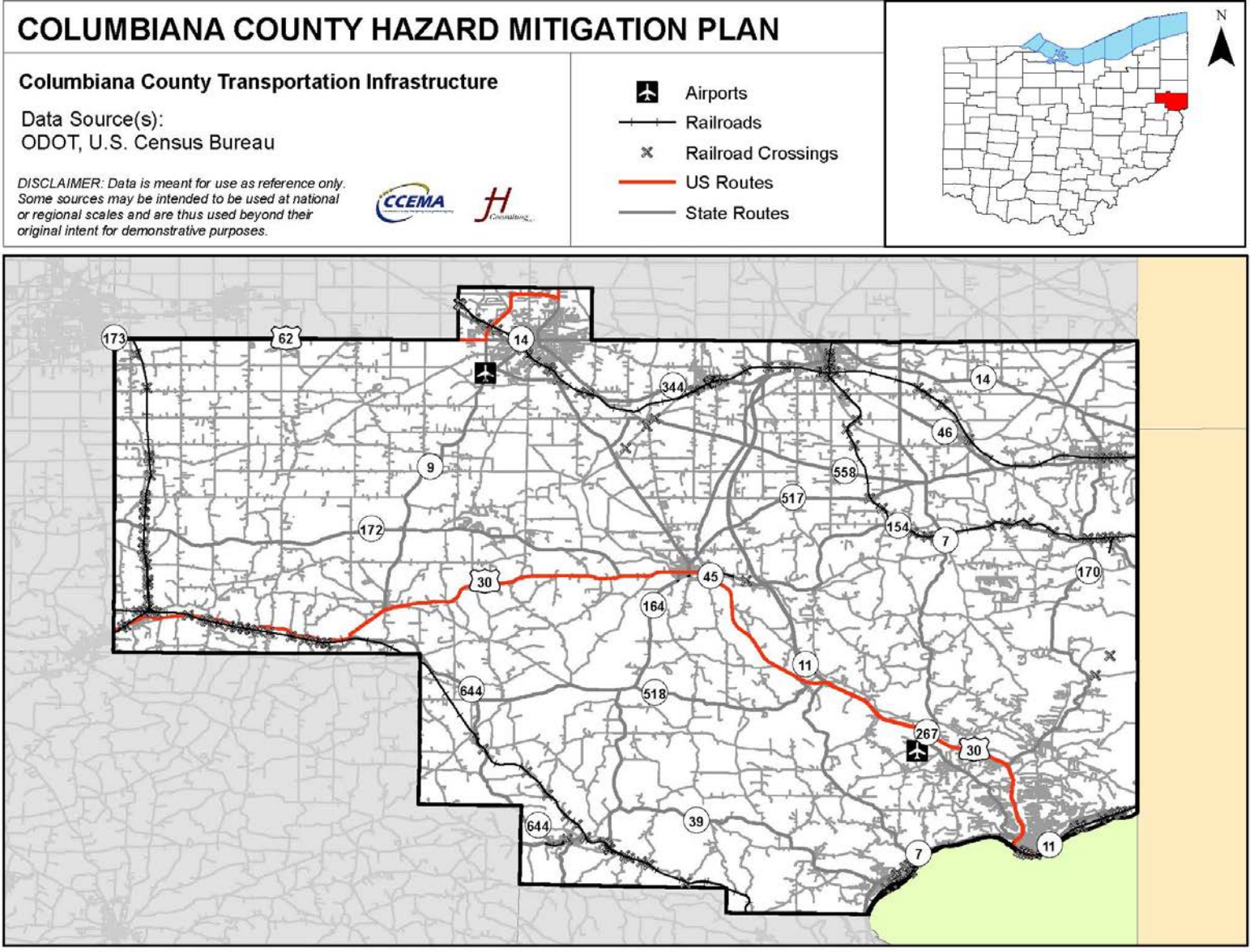


Transportation

Columbiana County's transportation infrastructure consists of highways, railways, and air elements. The county contains approximately 58 miles of U.S Highway and 252 miles of State Highway. U.S. Route 30 and Ohio State Route 11 are the major arterial routes through the county.

Railway lines are also a part of the county's transportation network. Norfolk Southern (NS), CSX Transportation, and Columbiana County's Port Authority's regional railroad (Youngstown and Southeastern) serve Columbiana County. These railways pass through or near the municipalities of Columbiana, East Liverpool, East Palestine, Leetonia, New Waterford, Rogers, Salem, Salineville, Summitville, and Wellsville.

Air travel is another component of Columbiana County's transportation system. The county is close to two airports that provide international service, Cleveland Hopkins International Airport (CLE) and Pittsburgh International Airport (PIT). There are two regional airports close to Columbiana County, including Youngstown-Warren Regional Airport (YNG), and Akron-Canton Regional Airport (CAK); they provide general and commercial aviation. The Columbiana County Airport, located between East Liverpool and Lisbon, is a limited-service public airport and home to 28 aircraft. There are also several small public and private airstrips throughout the county.



Economy

Columbiana County has a diverse employment sector. Total employment in the county is 45,200, with an estimated 2,900 persons (or 6.0%) unemployed. According to 2017 data from the Ohio Department of Development, the largest areas of employment are *manufacturing* (with an average employment of 6,036 and wages totaling \$252,732,398) and *trade, transportation and utilities* (with an average employment of 6,036 and wages totaling \$201,611,565). Between 2011 and 2017, the number of private-sector establishments declined by 4.8%. The largest decreases occurred in the *construction* (-12.6%) and *manufacturing* (-10.8%) sectors. The *information* sector experienced an increase of 16.7%, and the *natural resources and mining* sector jumped by 48.3%.

Columbiana County is the home of several tourist attractions, including Beaver Creek State Park, Guilford Lake State Park, Highlandtown Wildlife Area, Leetonia Coke Ovens, Museum of Ceramics, Sandy and Beaver Canal District, Scenic Vista Park, Sheepskin Hollow State Nature Preserve, Thompson House Museum, Yellow Creek State Forest, and Zeppernick Lake State Wildlife Area.

Education

The education system in Columbiana County consists of 37 public schools, at which 14,698 students attend and 963 teachers instruct, as well as three private schools at which another 493 students attend. There are two four-year public college branches in the county: Kent State University at East Liverpool and Kent State at Salem. The graduation rate is currently at 87.0%.

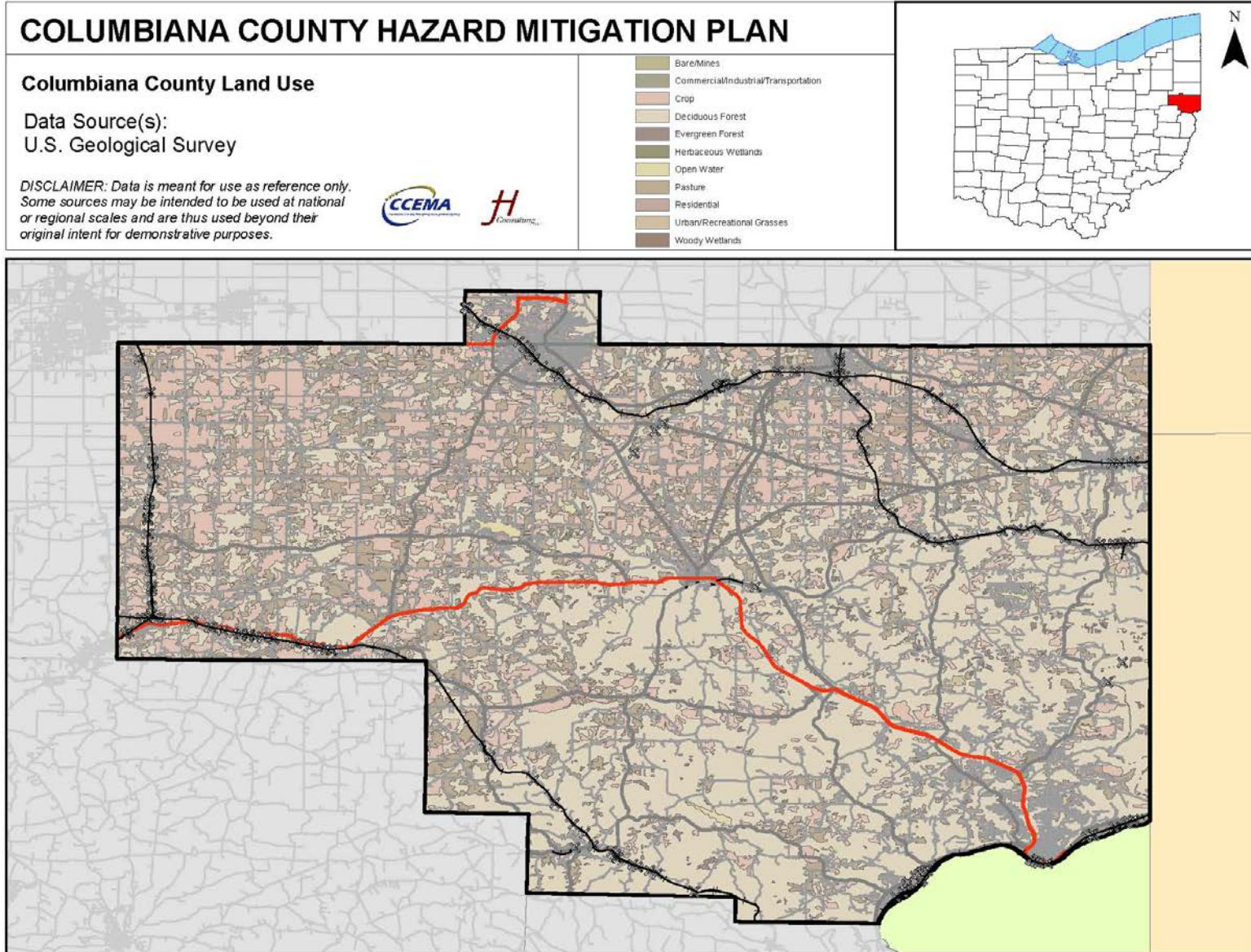
Healthcare

Several health care facilities are located in Columbiana County. Currently, there are two registered hospitals with 351 available beds, including Salem Regional Medical Center and East Liverpool City Hospital. There are also eight licensed residential care facilities with 392 available beds and 12 licensed nursing homes with 923 available beds. The Columbiana County Health District is a public health agency that serves most of the communities and townships in the county. The City of Salem re-established a local health department in 2009 to serve residents of its city.

Land Cover / Climate

The majority of Columbiana County's land area is forest (43.99%). Pasture and hay comprises 19.47% of land use, followed by cultivated crops (18.80%). There are approximately 1,045 individual farms operating in the county, with an average size of 122 acres per farm. Approximately 14% of the county is developed. The county also includes a small portion of shrub/grassland (2.08%), wetlands (0.36%), and open water (0.90%).

Columbiana County has a continental-type climate, predominantly influenced by air from the west. There is considerable variation in seasonal temperatures, with none of the temperatures being considered severe. The climate is seasonal in nature, with wet stormy springs, warm summers, colorful falls, and cold, snowy winters. The average temperature in January is 26°F; the July average temperature is 71°F, creating a mean average temperature of 49°F. Precipitation is distributed evenly throughout the year, with an annual average of approximately 39 inches (39"). Data from the National Weather Service (NWS) indicate that the area experiences approximately 30 inches of snowfall per year, usually during the November to April winter season.



1.2.2 Municipalities

This section provides demographic and other general details for each of the participating municipalities.

City of Columbiana

The City of Columbiana is a suburb of Youngstown in northern Columbiana County. A portion of the city also lies in southern Mahoning County. Columbiana is 17 miles east of Cleveland, 17 miles south of Youngstown, and 58 miles west of Pittsburgh. Major highways serving the city are State Routes 14, 46, and 164. The city has three public schools and one private school.

According to Census estimates in 2017, Columbiana City has a population of 6,363. The city has a land area of 6.0 square miles and a population density of 1,061.5 people per square mile. There are 3,132 housing units in the city, and the median household income is \$48,259.

City of East Liverpool

The City of East Liverpool sits where Ohio, Pennsylvania, and West Virginia meet, approximately 51 miles east of Canton, 47 miles south of Youngstown, and 39 miles west of Pittsburgh. The major highways serving East Liverpool are U.S. Route 30, State Routes 7, 11, 39, and 267. The Columbiana County Airport is nearby, and the city is only 23 miles from Pittsburgh International Airport (PIT). Three public schools, two private schools, and one online school serve the city.

Estimates from the Census indicate that the City of East Liverpool had a 2017 population of 10,817. The city has 4.56 square miles of land and a population density of 2,453.7 people per square mile. East Liverpool has the highest population density of any municipality in Columbiana County. There are 5,464 housing units in the city, and city residents have a median household income of \$30,430.

City of Salem

The City of Salem is in the northern part of Columbiana County, with a small portion in Mahoning County. Salem is approximately 65 miles from both Pittsburgh and Cleveland. The city's main highways include U.S. Route 62 and State Routes 9, 14, 45, and 344. There are four public schools and one private school in the city, as well as a branch of Kent State University. Salem City contains a large portion of the city's industrial and commercial assets.

Salem has a population of 11,939, making it the most populated municipality in Columbiana County. The city encompasses 6.23 square miles of land area and has a population density of 1,975.9 people per square mile. Salem includes 5,662 housing units and a median household income of \$39,454.

Village of East Palestine

The Village of East Palestine is in the northeastern portion of Columbiana County in Unity Township. State Routes 170 and 558 are the main highways serving the area. There are three public schools in the village. East Palestine is close to two Class II dams: East Palestine River and Werner/Duncan Lake dams.

East Palestine Village has a land area of 2.8 square miles and a 2017 population of 4,565. The village has a land area of 3.15 square miles and a population density of 1,497.7 people per square mile. There are 1,993 housing units in East Palestine Village, and residents have a median household income of \$41,559.

Village of Hanoverton

The Village of Hanoverton is in southeastern Columbiana County. The village is accessible by State Route 9 and U.S. Route 30. Hanoverton has a land area of 0.70 square miles, a population of 362, and a population density of 517.1 people per square mile. There are 178 housing units in the village, and residents have a median household income of \$40,694.

Village of Leetonia

The Village of Leetonia is in north-central Columbiana County in Salem Township, just east of Salem City and adjoining the Village of Washingtonville. The village is accessible by State Route 344, and State Route 11 is nearby. Leetonia has a land area of 2.26 square miles and a population density of 1,671.8 people per square mile. The total population of the village is 2,192. There are 939 housing units in the village, and residents have a median household income of \$51,667.

Village of Lisbon

The Village of Lisbon, in Center Township, is the Columbiana County seat. Major highways serving the area include U.S. Route 30 and State Routes 11, 45, 154, 164, and 517. There are two public schools in the village. The land area of Lisbon Village is 1.11 square miles,

and the population is 2,709. The village's population density is 1,671.8 people per square mile. The village has 1,264 housing units and an estimated median household income of \$31,719.

Village of New Waterford

The Village of New Waterford is in Unity Township in the northeastern part of the county. New Waterford is five miles southeast of Columbiana and four miles northwest of East Palestine. State Route 46 provides access to the village. Bull Creek flows along New Waterford's entire eastern border.

According to 2017 Census estimates, New Waterford has a land area of 0.9 square miles and a population of 1,495. The population density is 1,611 people per square mile. Residents of New Waterford have a median household income of \$37,019.

Village of Rogers

The Village of Rogers is in east-central Columbiana County in Middleton Township, ten miles east of Lisbon. Rogers is accessible by State Routes 7 and 154. 2017 Census estimates indicate that Rogers has a population of 240 and a land area of 0.23 square miles. The population density is 104.2 people per square mile. There are 102 housing units in Rogers Village, and residents have a median household income of \$38,295.

Village of Salineville

The Village of Salineville is in the southern part of Columbiana County in Washington Township. Major highways include State Routes 39, 164, and 644. Yellow Creek flows through the northern portion of village, and Yellow Creek State Forest is just west of the village. There is one school serving the area.

Salineville has a population of 1,208 and a land area of 2.21 square miles. Its population density is 546.6 people per square mile. There are 576 housing units in the village, and residents have a median household income of \$31,815.

Village of Summitville

The Village of Summitville is in Franklin Township, 27 miles east of Canton, and 49 miles west of Pittsburgh. The village is conveniently inside the Youngstown–Warren–Boardman; OH-PA Metropolitan Statistical Area (MSA). The village is accessible utilizing State Route 644,

which runs north/south through the center of town. Brush Creek flows just to the north of the village.

Summitville has a land area of 0.9 square miles (mi²), and the general elevation of the village is 1,109 feet above sea level. According to the 2010 Census, the Village of Summitville has a total population of 135 and contains 55 total housing units, with an average of 2.65 persons per household. The village currently reports a median household income of \$44,617.

Village of Washingtonville

Washingtonville is in the north-central part of Columbiana County, co-located in Mahoning County, with Main Street serving as the border between the two. Washingtonville also borders the Village of Leetonia. The major road serving the village is State Route 14. The total land area of Washingtonville Village is 0.7 square miles, and the population is 872. There are 398 housing units in the village, and the median household income is \$39,034.

Village of Wellsville

The Village of Wellsville is in Yellow Creek Township along the Ohio River. State routes 7, 39, and 45 serve the village, as does a mainline Norfolk Southern Railroad and several river terminals. Wellsville is home to the largest river port in Ohio and recently a gas-to-liquids (GTL) facility. The Wellsville Reservoir, a large Class-I dam, is also near to the village, and a levee along the Ohio River protects areas of town. Wellsville has three public schools.

Wellsville has a population of 3,541 and a land area of 1.8 square miles. The population density is 1,965 people per square miles. The village has 1,743 housing units. Residents of Wellsville have a median household income of \$28,184, the lowest in Columbiana County.

1.2.3 Asset Inventory

This plan identifies potentially vulnerable community assets, such as critical facilities, critical infrastructure, historic properties, commercial/industrial facilities, etc. “Assets” contribute directly to the quality of life in the community as well as ensure its continued operation.

This plan characterizes “assets” under the following headings.

- **People:** Areas of greater population density as well as populations with unique vulnerabilities or diminished response and recovery capabilities. Examples include areas of concentrated populations, areas catering to tourists (i.e., visiting) populations, facilities housing or serving functional and access needs populations and facilities that provide health or social services.

- **Economy:** Important economic drivers specific to the community. Examples include major employers and commercial centers.
- **Built Environment:** Existing structures, infrastructure systems, critical facilities, and cultural resources. The following table includes examples of built environment categories.

BUILT ENVIRONMENT ASSETS			
<i>Existing Structures</i>	<i>Infrastructure</i>	<i>Critical Facilities</i>	<i>Cultural Resources</i>
<ul style="list-style-type: none"> • Commercial Buildings • Industrial buildings • Single & multi-family residential buildings 	<ul style="list-style-type: none"> • Water & wastewater • Power utilities • Transportation (roads, railways, waterways) • Communication systems/centers • Energy pipelines and storage 	<ul style="list-style-type: none"> • Hospitals and medical facilities • Police and fire stations • Emergency operations centers • Evacuation shelters • Schools • Airport/heliports <p>HIGH POTENTIAL LOSS FACILITIES</p> <ul style="list-style-type: none"> • Nuclear power plants • Dams • Military & civil defense installations • Locations housing hazardous materials 	<ul style="list-style-type: none"> • Historical assets • Museums • Unique geologic sites • Concert halls • Parks • Stadia

- **Natural Environment:** Resources that are important to the community identity and quality of life, as well as those that support the local economy through agriculture, tourism, and recreation. Examples include areas that can provide protective functions that reduce the magnitude of hazard events and critical habitat areas and other environmental features that are important to protect.

COLUMBIANA COUNTY ASSET INVENTORY					
Name or Description of Asset	Address and Jurisdictional Location	Built Environment	People	Economy	Natural Environment
GOVERNMENTAL FACILITIES					
Columbiana County Courthouse	203 South Market St., Lisbon, OH	X			
Columbiana City Hall	28 West Friend Street, Columbiana, OH	X			
East Liverpool City Hall	126 West Sixth St., East Liverpool, OH	X			
East Palestine Village Offices	144 North Market Street. East Palestine, OH	X			
Hanoverton Village Offices	Hanoverton, OH	X			
Salem City Hall	231 South Broadway Ave., Salem, OH	X			
Salineville Village Offices	34 Washington Street, Salineville, OH	X			
Wellsville Village Offices	1200 Main Street, Wellsville, OH	X			
Leetonia Village Offices	300 East Main Street, Leetonia, OH	X			
Lisbon Village Offices	203 North Market Street, Lisbon, OH	X			
New Waterford Village Offices	3760 Park Drive, New Waterford, OH	X			
Washingtonville Village Offices	415 South County Road, Washingtonville, OH	X			
Elkrun Township Hall	41725 State Route 154, Lisbon, OH	X			
Fairfield Township Hall	3062 Fairfield School Road, Columbiana, OH	X			
Madison Township Hall	13011 State Route 45, Lisbon, OH	X			
Salem Township Hall	37638 Old State Route 558, Leetonia, OH	X			
TRANSPORTATION INFRASTRUCTURE					
Bridges	Columbiana County	X			
Highways	Columbiana County	X			
Railroads	Columbiana County	X			
Columbiana County Airport	15606 County Airport Rd, East Liverpool, OH	X		X	
Columbiana County Port Authority	7860 Lincole Place, Lisbon, OH 44432	X		X	
PUBLIC UTILITIES					
East Liverpool Water Works	2220 Michigan Ave., East Liverpool, OH	X			
East Palestine Sewer and Water	166 Park Drive, East Palestine, OH	X			
Leetonia Water Board	300 Main St., Leetonia, OH	X			
Salem Sewage Plant	1600 Pennsylvania Ave., Salem, OH	X			
Salineville Water Plant	11271 Salineville Rd NE, Salineville, OH	X			
Washingtonville Water and Sewer	415 Boston St., Washingtonville, OH	X			
Wellsville Filtration Plant	17547 SR 45, Wellsville, OH	X			
Wellsville Sewage Disposal	100 16th St., Wellsville, OH	X			

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
Buckeye Water District	P.O. Box 105, Wellsville, OH 43968	X			
Columbiana City Water Works/Sewer Dept.	Lisbon, OH 44432	X			
Leetonia Sewage Plant	300 Main Street, Leetonia, OH 44431	X			
Lisbon Village Water Department	8077 State Route 164, Lisbon, OH 44432	X			
New Waterford Water / Waste Water Plant	P.O. Box 287, New Waterford, OH 44445	X			
Salineville Sewer Plant	39 State Street, Salineville, OH 43945	X			
EMERGENCY SERVICES					
Columbiana County Sheriff	8473 Countyhome Road, Lisbon, OH	X			
Columbiana County EMA	215 South Market Street, Lisbon, OH 44432	X			
Columbiana County 911 Center	105 South Market Street, Lisbon, OH 44432	X			
Columbiana PD	28 South Vine Street, Columbiana, OH	X			
East Liverpool PD	126 West Sixth Street, East Liverpool, OH	X			
East Palestine PD	75 East Main Street, East Palestine, OH	X			
Leetonia PD	300 East Main Street, Leetonia, OH	X			
Lisbon PD	203 North Market Street, Lisbon, OH	X			
Liverpool Township PD	353 Adam Avenue, East Liverpool, OH	X			
New Waterford PD	3700 Village Park Drive New Waterford, OH	X			
Ohio State Highway Patrol	9423 state Route 45, Lisbon, OH	X			
Perry Township PD	2198 North Ellsworth Avenue, Salem, OH	X			
Salem PD	397 Columbia Street, Salem, OH	X			
Salineville PD	34 Washington Street, Salineville, OH	X			
St. Clair Township PD	15442 Pugh Road Suite 1, Calcutta, OH	X			
Washingtonville PD	415 South County Road, Washingtonville, OH	X			
Wellsville PD	1200 Main Street, Wellsville, OH	X			
Calcutta FD	15455 Pugh Road, Calcutta, OH	X			
Columbiana FD	28 West Friend Street, Columbiana OH	X			
East Liverpool FD	626 St. Clair Ave., East Liverpool, OH	X			
East Palestine FD	67 East Clark Street, East Palestine, OH	X			
Franklin Township VFD	32046 Spruce Street, Summitville, OH	X			
Hanoverton VFD	Hanoverton, OH	X			

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
Guilford Lake FD	32120 Sunset Ave., Hanoverton, OH	X			
Highlandtown VFD	18371 Steubenville Pike Rd., Salineville, OH	X			
Homeworth VFD	4354 Middle Street, Homeworth, OH	X			
Leetonia FD	330 East Main Street, Leetonia, OH	X			
Lisbon FD	Lisbon, OH	X			
Dixonville FD	1181 Anderson Blvd., East Liverpool, OH	X			
Lacroft VFD	2360 Sherwood Ave., East Liverpool, OH	X			
Negley VFD/EMS	Negley, OH	X			
New Waterford FD	3766 East Main St., New Waterford, OH	X			
North Georgetown VFD	North Georgetown, OH	X			
Perry Township VFD	2198 North Ellsworth Avenue, Salem, OH	X			
Rogers Village FD	7580 Farr Street, Rogers, OH	X			
Salem FD	260 South Ellsworth Ave., Salem, OH	X			
Salineville VFD	34 Washington Street, Salineville, OH	X			
Wellsville VFD	1202 Main Street, Wellsville, OH	X			
West Point FD	West Point, OH	X			
Winona FD	Winona, OH	X			
Glenmoor VFD	16320 Annesley Rd., East Liverpool, OH	X			
Air Evac Lifeteam 81	15620 County Airport Rd., East Liverpool, OH	X			
EMT Ambulance	383 North Lincoln Ave., Salem, OH	X			
Lifeteam EMS Inc.	740A Dresden Ave., East Liverpool, OH	X			
KLG Ambulance / MICU	1516B South Lincoln Ave., Salem, OH	X			
North Star Critical Care	16356 SR 267, East Liverpool, OH	X			
Maple-Cotton Funeral Home and EMS	11009 SR 644, Kensington, OH	X			
Ambulance Service Inc.	231 Webber Way, East Liverpool, OH	X			
Columbiana EMS	28 West Friend Street, Columbiana, OH	X			
Leetonia EMS	300 Main Street, Leetonia, OH 44431	X			
New Waterford EMS	3766 West Main Street, New Waterford, OH 44445	X			
East Palestine EMS	67 East Clark Street, East Palestine, OH	X			
HOSPITALS AND NURSING HOMES					
East Liverpool City Hospital	East Liverpool, OH	X	X		
Salem Regional Medical Center	Salem, OH	X	X		

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
Parkside Healthcare Center	930 East Park Ave., Columbiana, OH		X		
Continuing Health Care Solutions	100 Vista Dr., Lisbon, OH		X		
Blossom Nursing and Rehab. Center	109 Blossom Ln., Salem, OH		X		
Calcutta Healthcare Center	48444 Bell School Rd, Calcutta, OH	X			
The Orchards of East Liverpool Convalescent Center	709 Armstrong Ln., East Liverpool, OH		X		
Valley Oaks Care Center	500 Selfridge St., East Liverpool, OH		X		
Salem West Health Care	2511 Bentley Dr., Salem, OH		X		
Salem East Health Care	250 Continental Dr., Salem, OH		X		
Salem North Health Care	230 Continental Dr., Salem, OH		X		
Auburn Skilled Nursing and Rehab	451 Valley Rd., Salem, OH		X		
Circle of Care	1985 East Pershing Street, Salem, OH		X		
Assisted Living Ministry Services	650 St. Clair Ave., East Liverpool, OH		X		
Crossroads at Beaver Creek	13280 Echo Dell Rd., East Liverpool, OH		X		
Grace Woods Senior Living	1166 Benton Rd., Salem, OH		X		
The Renaissance at Vista	100 Vista Dr., Lisbon, OH		X		
Brookdale Salem	1916 South Lincoln Ave., Salem, OH		X		
Whispering Pines Village	937 East Park Ave., Columbiana, OH		X		
St. Mary's Alzheimer's Center	1899 Garfield Road, Columbiana, OH 44408		X		
Great Trail Care Center	400 Carolyn Center, Minerva, OH 44657		X		
Twin Oaks Retirement Center	1166 Benton Road, Salem, OH 44460		X		
Covington Skilled Nursing & Rehab Center	100 Covington Drive, East Palestine, OH 44413		X		
American Health Care	107 Royal Birkdale Drive, Columbiana, OH 44408		X		
Harmony Village	901 S Main Street, Columbiana, OH 44408		X		
Courtyard at Lexington	2345 Lexington Ave., Salem, OH 44460		X		
Century House of Salem	1171 East State Street, Salem, OH 44460		X		
Columbiana County Mental Health	40722 State Route 154, Lisbon, OH 44432		X		
SCHOOLS AND EDUCATIONAL FACILITIES					
Beaver Local HS	46090 Bell School Rd., East Liverpool, OH 43920		X		
Beaver Local MS	46090 Bell School Rd., East Liverpool, OH 43920		X		
Buckeye ES	1200 Buckeye Ave., Salem, OH		X		

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
Beaver Local ES	46090 Bell School Rd., East Liverpool, OH 43920		X		
Columbiana Co. Career and Technical Center	9364 SR 45, Lisbon, OH		X		
Columbiana HS	700 Columbiana-Waterford Rd., Columbiana, OH		X		
Crestview ES	3407 Middleton Rd., Columbiana, OH		X		
Crestview MS/HS	44100 Crestview Rd., Columbiana, OH		X		
David Anderson Jr/Sr HS	260 West Pine St., Lisbon, OH		X		
DAW MS	929 Center Street, Wellsville, OH		X		
East ES	1417 Etruria Street, East Liverpool, OH		X		
East Liverpool Jr./Sr. HS	100 Maine Ave., East Liverpool, OH		X		
East Palestine ES	195 West Grant Street, East Palestine, OH		X		
East Palestine MS	320 West Grant Street, East Palestine, OH		X		
East Palestine HS	360 West Grant Street, East Palestine, OH		X		
Garfield ES	1600 Lincoln Ave., Wellsville, OH		X		
Joshua Dixon ES	333 North Middle St., Columbiana, OH		X		
Lacroft ES	2460 Boring Lane, East Liverpool, OH		X		
Leetonia K-12	450 Walnut Street, Leetonia, OH		X		
Mckinley ES	441 East Chestnut St., Lisbon, OH		X		
North ES	90 Maine Blvd., East Liverpool, OH		X		
Reilly ES	491 Reilly Ave., Salem, OH		X		
Salem Jr./Sr. HS	1200 East Sixth St., Salem, OH		X		
South Side MS	720 Columbiana-Waterford Rd., Columbiana, OH		X		
Southeast ES	2200 Merle Rd., Salem, OH		X		
Southern Local K-12	38095 SR 39, Salineville, OH		X		
United K-12	8143 SR 9, Hanoverton, OH		X		
Wellsville HS	1 Bengal Blvd., Wellsville, OH		X		
Westgate MS	810 West Eighth St., East Liverpool, OH		X		
Act 1 Education Center Jr. HS	9955 Union Ridge Rd., Rogers, OH		X		
East Liverpool Christian School	46682 Florence St., East Liverpool, OH		X		
Heartland Christian School K-12	28 Pittsburgh St., Columbiana, OH		X		
St. Aloysius ES	335 West Fifth St., East Liverpool, OH		X		
St. Paul ES	925 East State St., Salem, OH		X		

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
COMMERCIAL AND INDUSTRIAL					
American Standards Brands	605 South Ellsworth Ave., Salem, OH 44460			X	
Flex-N-Gate/Ventra Salem	Salem, OH 44460			X	
Fresh Mark, Inc.	1735 South Lincoln Ave., Salem, OH 44460			X	
Wal-Mart Stores, Inc.	16280 Dresden Ave., East Liverpool, OH 43920			X	
Pioneer Pottery Inc	761 Dresden Ave., East Liverpool, OH 43920			X	
Zarbana Industries	P.O. Box 46, Columbiana, OH 44408			X	
Miller Casting	1648 Lower Elkton Road, Columbiana, OH 44408			X	
Columbiana Foundry Company	Lisbon Road, Columbiana, OH 44408			X	
POST OFFICES					
Kensington PO	11011 SR 644, Kensington, OH	X			
Summitville PO	15521 SR 644, Summitville, OH	X			
Columbiana PO	149 South Main St. Ste. 2, Columbiana, OH	X			
New Waterford PO	3818 West Main St., New Waterford, OH	X			
Calcutta PO	15713 SR 170, East Liverpool, OH	X			
Winona PO	32036 Winona Rd., Winona, OH	X			
Homeworth PO	4434 Middle St., Homeworth, OH	X			
East Liverpool PO	700 Dresden Ave., East Liverpool, OH	X			
East Palestine PO	269 North Market St., East Palestine, OH	X			
East Rochester PO	24781 US 30, East Rochester, OH	X			
Hanoverton PO	29959 Market St., Hanoverton, OH	X			
Rogers PO	7529 Depot St., Rogers, OH	X			
Salem PO	275 Penn Ave., Salem, OH	X			
Salineville PO	37 West Main St., Salineville, OH	X			
Negley PO	7560 Commerce St., Negley, OH	X			
North Georgetown PO	27416 Main St., North Georgetown, OH	X			
Leetonia PO	235 Main St., Leetonia, OH	X			
Lisbon PO	7983 Dickey Dr., Lisbon, OH	X			
Elkton PO	42188 SR 154, Elkton, OH	X			
Washingtonville PO	195 East Main St., Washingtonville, OH	X			
Wellsville PO	1075 Main St., Wellsville, OH	X			

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
PUBLIC LIBRARIES					
Carnegie Public Library	219 East Fourth St., East Liverpool, OH	X			
Columbiana Public Library	322 North Middle St., Columbiana, OH	X			
East Palestine Memorial Public Library	309 North Market St., East Palestine, OH	X			
Leetonia Community Public Library	181 Walnut St., Leetonia, OH	X			
Lepper Library	303 East Lincoln Way, Lisbon, OH	X			
Salem Public Library	821 East State St., Salem, OH	X			
Wellsville Public Library	115 Ninth St., Wellsville, OH	X			
HISTORICAL FACILITIES					
Hiram Bell Farmstead	43628 State Route 517				X
Burchfield Homestead	867 E. 4th Street, Salem, OH				X
Richard L Cawood Residence	2600 St. Clair Ave., East Liverpool, OH				X
Cherry Valley Coke Ovens	Butcher Road, Leetonia, OH				X
Church Hill Road Covered Bridge	State Route 154				X
Diamond Historic District	Market & E. 6th Street, East Liverpool, OH				X
East Liverpool Historic District	East Liverpool, OH				X
East Liverpool Pottery	2nd and Market Street, East Liverpool				X
Nicholas Eckis House	High Street, Fairfield, OH				X
Elks Club	139 W. 5th Street, East Liverpool, OH				X
Sandy and Beaver Canal District	Beaver Creek State Forest				X
Godwin Knowles House	422 Broadway, East Liverpool, OH				X
Hanna-Kenty House	251 East High Street, Lisbon, OH				X
Hanoverton Canal Town District	U.S. Route 30, Hanoverton, OH				X
Franklin Harris Farmstead	3525 Depot Road, Salem, OH				X
Daniel Howell Hise House	1100 Franklin Ave., Salem, OH				X
Hostetter Inn	32901 State Route 172, Lisbon, OH				X
Ikirt House	200 6th Street, East Liverpool, OH				X
Homer Laughlin House	414 Broadway, East Liverpool, OH				X
Lisbon Historic District	U.S. Route 30, Lisbon, OH				X
Daniel McBean Farmstead	18709 Fife Coal Rd. Wellsville, OH				X
Odd Fellows Temple	120 W. 6th Street, East Liverpool, OH				X
Mary A. Patterson Memorial	E. 4th Street, East Liverpool, OH				X
Potters National Bank	Broadway and 4th St., East Liverpool, OH				X
Salem Downtown Historic District	Salem, OH				X
Charles Nelson Schmick House	110 Walnut Street, Leetonia, OH				X
John Street House	631 N. Ellsworth Ave., Salem, OH				X
Teegarden-Centennial Covered Bridge	Salem, OH				X

COLUMBIANA COUNTY ASSET INVENTORY					
<i>Name or Description of Asset</i>	<i>Address and Jurisdictional Location</i>	Built Environment	People	Economy	Natural Environment
Cassius Clark Thompson House	305 Walnut Street, East Liverpool, OH				X
Travelers Hotel	East Liverpool, OH				X
YMCA	Washington and 4th St., East Liverpool, OH				X

COLUMBIANA COUNTY HAZARD MITIGATION PLAN

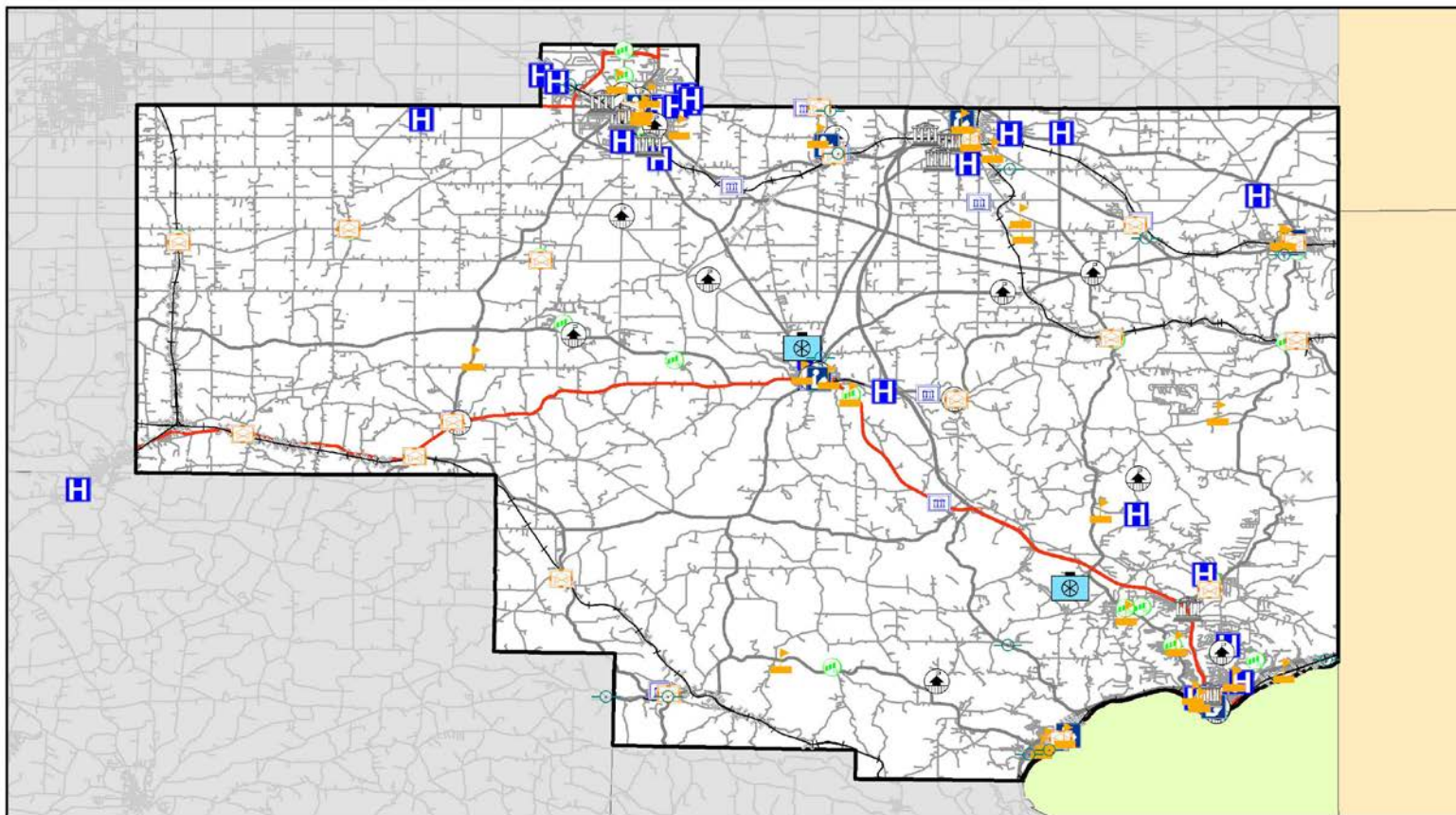
Columbiana County Asset Inventory

Data Source(s):
Planning Committee

DISCLAIMER: Data is meant for use as reference only. Some sources may be intended to be used at national or regional scales and are thus used beyond their original intent for demonstrative purposes.



- | | |
|-----------------------|----------------|
| Emergency Services | Private Sector |
| Governmental Facility | School |
| Healthcare | Transportation |
| Historical | Utility |
| Library | |
| Post Office | |



1.0 INTRODUCTION

1.3 Capabilities

§201.6(b)(3)	Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.
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This section examines the existing capabilities of Columbiana County and the participating jurisdictions. Specifically, this section looks at those capabilities that can support the implementation of hazard mitigation efforts. The county’s consultant hosted an online survey of jurisdictional representatives to complete a “capabilities assessment.” Representatives answered questions about various plans, codes, and ordinances from the perspectives of their home jurisdictions. The following table summarizes jurisdictional capabilities.

JURISDICTIONAL CAPABILITIES							
<i>Jurisdiction</i>	Comprehensive Plan	Building Codes	Subdivision or Land Use Ordinance	Zoning Ordinance	Participates in the NIFP	Capital Budget Funds for Mitigation Projects	Public Works Budget for Mitigation projects
Columbiana County	YES	YES	NO	YES	YES	NO ²	YES
Columbiana City	N/A	N/A	N/A	N/A	YES	N/A	N/A
East Liverpool City	N/A	N/A	N/A	N/A	YES	N/A	N/A
East Palestine Village	YES ¹	YES	UNK	YES	YES	NO ²	NO ²
Hanoverton Village	N/A	N/A	N/A	N/A	YES	N/A	N/A
Leetonia Village	N/A	N/A	N/A	N/A	YES	N/A	N/A
Lisbon Village	YES	YES	YES	YES	YES	NO	NO
New Waterford Village	N/A	YES	YES	YES	YES	NO ²	NO ²
Rogers Village	N/A	N/A	N/A	N/A	YES	N/A	N/A
Salem City	UNK	YES	YES	YES	YES	NO	NO
Salineville Village	UNK	NO	NO	NO	YES	NO	NO
Washingtonville Village	N/A	N/A	N/A	N/A	YES	N/A	N/A
Wellsville Village	UNK	UNK	UNK	YES	YES	NO ²	NO ²

UNK – Marked “unknown”
N/A - No answer / Skipped question

1.3.1 Existing Plans and Ordinances

Columbiana County itself and the municipalities therein have a number of capabilities that can support mitigation efforts, including comprehensive plans, building codes, subdivision

¹ Cited participation in the overall county plan.

² Marked “No, but my jurisdiction would be willing to consider it in future budgets.”

and land use ordinances, zoning ordinances, and floodplain regulations. In summary, Columbiana County and the municipalities therein appear to have a “moderate” planning and regulatory capability.

Comprehensive Plans

Comprehensive plans promote sound land use and regional cooperation among local governments to address planning issues. These plans serve as the official policy guide for influencing the location, type, and extent of future development by establishing the basic decision-making and review processes on zoning matters, subdivision and land development, land uses, public facilities, and housing needs over time.

Several jurisdictions in Columbiana County maintain comprehensive plans of some sort. Half of the 12 respondents reported the presence of a comprehensive plan. Only one of the remaining respondents answered “no” to the question; the other five respondents selected “unknown.” With local officials such as mayors, fiscal officers, and fire chiefs responding to the survey, this bevy of responses is interesting. Additionally, the Ohio Mid-Eastern Governments Association (OMEGA) serves as a regional planning and development council representing the governments in Columbiana and other surrounding counties. OMEGA supports a variety of community, economic, and transportation development planning efforts.

Building Codes

Building codes regulate construction standards for new construction and substantially renovated buildings. Standards can require resistant or resilient building design practices to address hazard impacts common to a given community. Four (33.3%) of the jurisdictional respondents reported having building codes in place, while six (50.0%) did not. Two respondents (16.7%) did not know about the status of building codes in their jurisdiction. Responding township jurisdictions provided mixed answers, with some noting the presence of building codes and others marking “no.”

Building codes can contribute substantially to hazard mitigation, even if a jurisdiction only adopts codes to the level of the recommended International Building Code (IBC). As the CCEMA manages the next update cycle (i.e., through annual meetings and a formal update), an effort to educate local officials on the connections between minor building regulations and hazard mitigation would be beneficial.

Subdivision and Land Use Development Ordinances

Subdivision and land development ordinances (SALDOs) regulate the development of housing, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Within these ordinances, guidelines on how to divide land, the placement and size of roads, and the location of infrastructure can reduce exposure of development to hazard events. Three respondents (25.0%) indicated their jurisdiction maintains SALDOs, while five (41.7%) indicated their jurisdictions do not. Four respondents (33.3%) selected “unknown.”

Zoning Ordinances

Zoning ordinances allow for local communities to regulate the use of land in order to protect the interests and safety of the general public. Zoning ordinances can address unique conditions or concerns within a given community. They may be used to create buffers between structures and high-risk areas, limit the type or density of development, or require land development to consider specific hazard vulnerabilities. Half of the responding jurisdictions in Columbiana County reported having zoning ordinances in place.

National Flood Insurance Program (NFIP) Participation and Floodplain Management Ordinances

Through administration of floodplain ordinances, local governments can ensure that all new construction or substantial improvements to existing structures located in the floodplain are flood-proofed, dry-floodproofed, or built above anticipated flood elevations. Floodplain ordinances may also prohibit development in certain areas altogether. The NFIP establishes minimum ordinance requirements in order for that community to participate in the program. However, a community is permitted and encouraged to adopt standards which exceed NFIP requirements.

FEMA’s *Community Status Book* indicates that all 13 jurisdictions in Columbiana County participate in the NFIP. Participants manage their participation in the program in similar ways. They maintain access to copies of flood insurance rate maps (FIRMs) by directing residents to websites or to the appropriate local government offices (e.g., village halls, private insurance agents, etc.) for information. Participants support requests for map updates by referring requestors to the appropriate department or agency (e.g., the county engineer’s office). In most cases, municipal zoning offices are in charge of issuing permits for development in special flood hazard areas (SFHAs), though in some instances, a village administrator issues permits.

Currently, no jurisdictions in Columbiana County participate in the Community Rating System (CRS).

Interestingly, a collection of agencies review and utilize base flood elevation data for a variety of projects. Zoning officers, particularly in instances where the zoning official issues permits, are one example. Local fire departments have also used the data in their outreach to the communities they serve. Other jurisdictions reported the municipal council as active participants in considering the data for their areas. This survey response is a promising indicator that myriad local officials have a desire to reduce risks from flooding. Respondents noted designing/locating structures away from SFHAs as the preferred method of minimizing damage to future structures, and designing or locating utilities and services in such ways as to prevent water damage as the preferred method of ensuring substantially-improved construction stays reasonably safe from flood damage.

1.3.2 Capability Assessment

All jurisdictions in the county (i.e., the county, municipalities, and townships) had an opportunity to complete a “capability self-assessment” via an online survey. Representative members of 12 jurisdictions completed a self-assessment for their jurisdiction. In response to the survey questionnaire, local officials classified each of the capabilities as high, moderate, or limited.

Administrative and Technical Capability

Administrative capability is an adequacy of departmental and personnel resources for the implementation of mitigation-related activities. Technical capability relates to an adequacy of knowledge and technical expertise of local government employees or the ability to contract outside resources for this expertise to effectively execute mitigation activities.

Fiscal Capability

The decision and capacity to implement mitigation-related activities is often strongly dependent on the presence of local financial resources. While some mitigation actions are less costly than others, it is important that money is available locally to implement policies and projects. The table above identifies which jurisdictions currently budget funds for mitigation projects. East Palestine, New Waterford, and Wellsville indicated a willingness to consider inclusion of funds in future budgets. Financial resources are particularly important if communities are trying to take advantage of state or federal mitigation grant funding

opportunities that require local-match contributions. Federal programs which may provide financial support for mitigation activities include, but are not limited to:

- Community Development Block Grant (CDBG),
- Disaster Housing Program,
- Emergency Conservation Program,
- Emergency Management Performance Grants (EMPG),
- Emergency Watershed Protection Program,
- Hazard Mitigation Grant Program (HMGP),
- Flood Mitigation Assistance Program,
- Non-Insured Crop Disaster Assistance Program,
- Pre-Disaster Mitigation Program,
- Repetitive Flood Claims Program (RFC),
- Section 108 Loan Guarantee Programs,
- Severe Repetitive Loss (SRL) Program, and
- Weatherization Assistance Program.

State programs that may support mitigation include (but are not limited to):

- Ohio Department of Development (job-ready sites and CDBG funds for economic development),
- Ohio Department of Natural Resources (land and water conservation efforts),
- Ohio Environmental Protection Agency (loans and capital improvements), and
- Ohio Emergency Management Agency (funds to support emergency preparedness, response, and overall resilience).

Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to mitigate hazard events. The adoption of hazard mitigation measures may be seen as an impediment to growth and economic development. In many cases, mitigation may not generate interest among local officials when compared with competing priorities. Therefore, the local political climate must be considered when designing mitigation strategies, as it could be the most difficult hurdle to overcome in accomplishing the adoption or implementation of specific actions.

The following table summarizes the results of the self-assessment survey as a percentage of the responses received.

CAPABILITY SELF-ASSESSMENT			
<i>Capability</i>	<i>High</i>	<i>Moderate</i>	<i>Limited</i>
Planning & Regulatory	0	1	2
Administrative & Technical	0	1	11
Fiscal	1	1	10
Political	0	6	6

The 2019 self-assessment also included four questions to gauge community receptiveness to several types of mitigation strategies. The following table details the results.

SELF-ASSESSMENT: PROJECT CONSIDERATIONS					
<i>Sample Mitigation Strategy</i>	<i>Very Willing</i>	<i>Willing</i>	<i>Neutral</i>	<i>Unwilling</i>	<i>Very Much Unwilling</i>
XYZ community guides development away from known hazard areas.	0.0%	33.3%	58.3%	0.0%	8.3%
XYZ community restricts public investments or capital improvements within hazard areas.	0.0%	50.0%	50.0%	0.0%	0.0%
XYZ community enforces local development standards (e.g., building codes, floodplain management ordinances, etc.) that go beyond minimum state or federal requirements.	0.0%	16.7%	66.7%	16.7%	0.0%
XYZ community offers financial incentives (e.g., through property tax credits) to individuals and businesses that employ resilient construction techniques (e.g., voluntarily elevate structures, employ landscape designs that establish buffers, install green infrastructure elements, etc.).	0.0%	33.3%	41.7%	16.7%	8.3%

1.3.3 Studies, Reports, and Technical Information

The research conducted for the development of this plan included data from federal, state, and higher education studies, reports, and technical information. Specific sources relative to individual hazards appear in Appendix 5: Citations. Columbiana County's consultant reviewed a number of existing plans and reports to (a) identify any obvious inconsistencies between other development and mitigation efforts, (b) as baseline information for such sections as trends and predictions, and (c) to support discussions surrounding mitigation projects. Those documents included the following.

REFERENCED DOCUMENTS		
<i>Document Type</i>	<i>Document Citation</i>	<i>How Incorporated into Plan</i>
Technical Information	ODNR Division of Soil and Water Conservation. (2014). <i>Rainwater and land development: Ohio's standards for stormwater management land development and urban stream protection</i> , 3 rd Ed. State Government: Columbus, OH.	Used to support discussions of site-specific flood mitigation.
Technical Information	USDHS FEMA. (2013) <i>Mitigation Ideas</i> . Federal Government: Washington, DC	Used as general guidance for stakeholders and jurisdictions on mitigation ideas
Technical Information	USDHS FEMA. (2016). <i>National Mitigation Framework</i> . Federal Government: Washington, DC	Used as general guidance on mitigation planning.
Technical Information	USDHS FEMA. (2005). <i>Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning</i> . Federal Government: Washington, D.C.	Used as general guidance for incorporating historical property and cultural protection.
Technical Information	USDHS FEMA. (2013). <i>Local mitigation planning handbook</i> . Federal Government: Washington, D.C.	Used as general guidance on revised mitigation planning process
Technical Information	USDHS FEMA. (2013). <i>Integrating Hazard Mitigation Into Local Planning</i> . Federal Government: Washington, D.C.	Used as general guidance on existing plan integration for hazard mitigation
Technical Information	USEPA. (2018). <i>Storm smart cities: Integrating green infrastructure into local hazard mitigation plans</i> . Federal Government: Philadelphia, PA.	Outlines ways low-impact development and green infrastructure can support mitigation planning.
Plan	State of Ohio (2019). <i>Enhanced hazard mitigation plan</i> . State Government: Columbus, OH.	Used as general guidance on existing plan integration for hazard mitigation
Plan	CCEMA. (n.d.). <i>Columbiana County emergency operations plan</i> . Local Government: Lisbon, OH.	Used as general guidance on existing plan integration for hazard mitigation.
Plan	CCHD. (2015). <i>Columbiana County Health Department emergency operations plan/emergency response plan</i> . Local Government: Lisbon, OH.	Used as general guidance on existing plan integration for hazard mitigation.
Plan	CCHD. (2015). <i>Columbiana County Health Department strategic plan, January 2017-December 2021</i> . Local Government: Lisbon, OH.	Used as general guidance on existing plan integration for hazard mitigation.
Plan	Columbiana County Health Partners (a steering committee made up of senior representatives from East Liverpool City Hospital and Salem Regional Medical Center as well as representatives from local health departments, health and social service organizations, school districts, and county government). (2016). <i>Columbiana County community health improvement plan (CHIP)</i> . Local Government: Lisbon, OH.	Used for informing potential human and social impacts from the hazards identified by the plan.
Plan	(The) Community Action Agency of Columbiana County (CAA). (2015). <i>Columbiana County coordinated public transit-human services transportation plan</i> . Local Government: Lisbon, OH.	Used to identify development trends, available resources, and usage data within the transportation sector (and specifically public transit).
Plan	Ohio Department of Transportation, Division of Planning. (2019). <i>2021-2024 construction projects COLUMBIANA County</i> . State Government: Columbus, OH.	Used to identify development trends within the transportation sector.
Plan	Ohio Mid-Eastern Governments Association (OMEGA). (2017). <i>Regional Transportation Improvement Program (RTIP), SFY 2018 to 2021</i> . Local Government: Cambridge, OH.	Used to identify development trends within the transportation sector.

REFERENCED DOCUMENTS		
<i>Document Type</i>	<i>Document Citation</i>	<i>How Incorporated into Plan</i>
Assessment	Columbiana County Health Partners (a steering committee made up of senior representatives from East Liverpool City Hospital and Salem Regional Medical Center as well as representatives from local health departments, health and social service organizations, school districts, and county government). (2016). <i>Columbiana County community health needs assessment</i> . Local Government: Lisbon, OH.	Used for informing potential human and social impacts from the hazards identified by the plan.
Assessment	Ohio Mid-Eastern Governments Association (OMEGA). (2018). <i>2018 CEDS annual report</i> . Local Government: Cambridge, OH.	Used to identify community and economic development trends.
Assessment	USDA Natural Resources Conservation Service. (n.d.). <i>Soil survey of Columbiana County, Ohio</i> . Federal Government: Washington, DC.	Used to support consideration of subsidence and other geologic hazards.

1.0 INTRODUCTION

1.4 Trends and Predictions

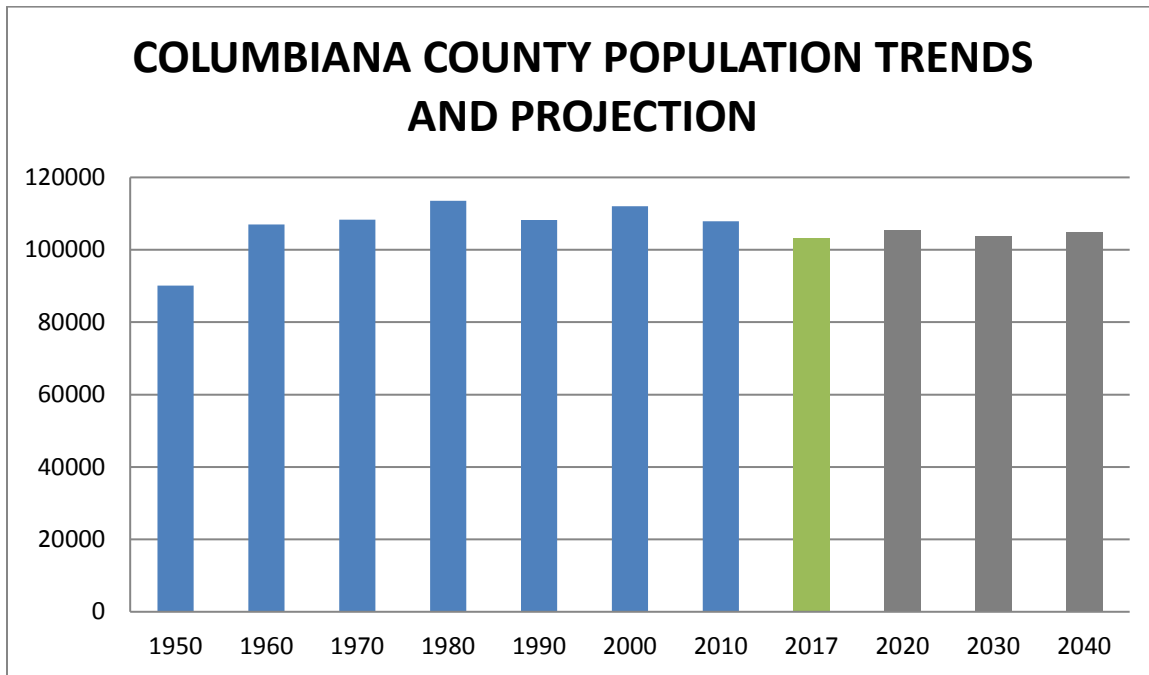
§ 201.6(c)(2)(ii)(c) Providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land-use decisions.

This section examines various demographic and other development trends in Columbiana County to contextualize future risk to the hazards identified later in this plan.

Population

Hazard Mitigation Relevance: People are some of the most important assets in a community. Understanding population trends and concentrations assists in describing current and future vulnerability, as well as in the design of outreach and to target preparedness, response, and mitigation actions. Also, understanding where people reside or visit in a community informs the appropriate locations for mitigation projects (FEMA, 2013).

Columbiana County's population has fluctuated since the mid-1900s. As the graphic below indicates, the population grew steadily (per decennial Census data) between 1950 and 1960. Since then, the population has oscillated with each census. Projections for 2020, 2030, and 2040 show the population remaining relatively consistent.



Source: Columbiana County Profile prepared by the Ohio Development Services Agency, Office of Research, <https://development.ohio.gov/files/research/C1016.pdf>

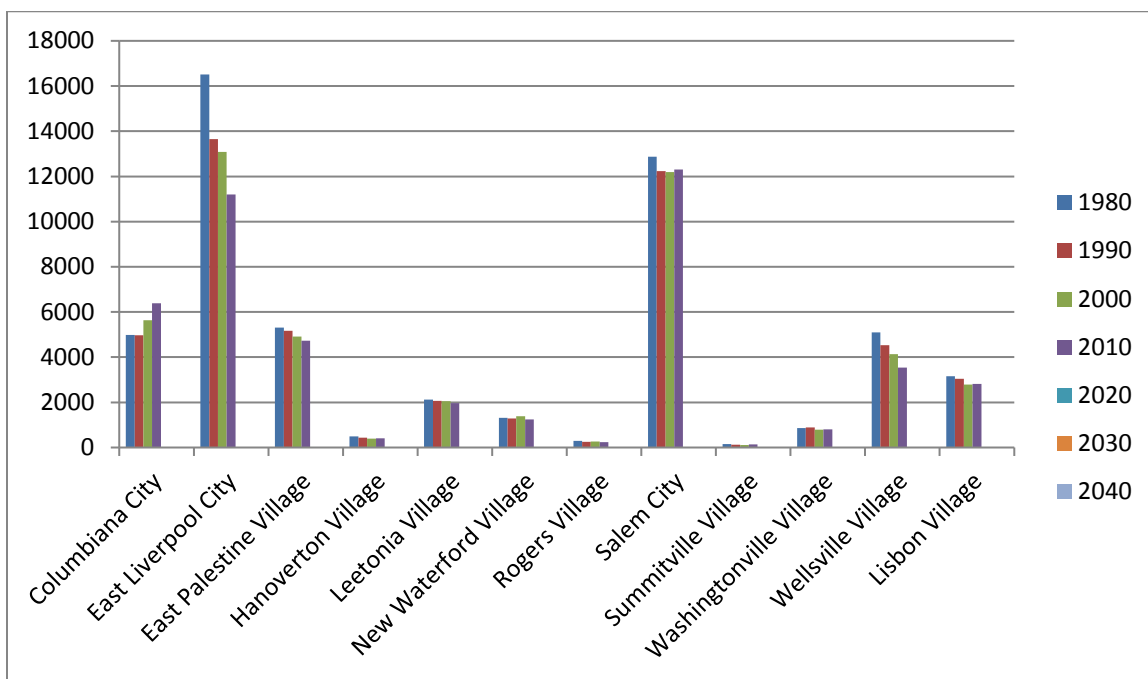
The following table assigns figures to the bars on the above graph.

COLUMBIANA COUNTY POPULATION CHANGE, 1950-2040											
<i>Jurisdiction</i>	1950	1960	1970	1980	1990	2000	2010	2017	2020	2030	2040
Columbiana County	90,121	107,004	108,310	113,572	108,276	112,075	107,841	103,077	105,380	103,870	104,710

It is also helpful to consider population trends in the population clusters throughout Columbiana County. The Ohio Development Services Agency identifies the following as the “largest places” (2018) in Columbiana County.

POPULATION CHANGE, LARGEST PLACES			
Place	2010 Pop.	Est. 2017	% Change
East Liverpool City	11,195	10,817	-3.38%
East Palestine Village	4,721	4,565	-3.30%
Glenmoor	1,987	2,041	2.72%
Hanoverton Village	408	360	-11.76%
La Croft	1,141	1,313	15.07%
Leetonia Village	1,959	2,192	11.89%
Minerva	3,720	3,486	-6.29%
New Waterford Village	1,238	1,495	20.76%
Rogers Village	237	240	1.27%
Salem City	12,303	11,939	-2.96%
Salineville Village	1,311	1,208	-7.86%
Summitville Village	135	122	-9.63%
Washingtonville Village	801	872	8.86%
Wellsville Village	3,541	3,406	-3.81%

As shown in the above table, the 2017 estimated populations of eight places declined from the 2010 Census estimate, while six places saw population growth. For the following graphic, the populations of all villages consist of 2010 estimates decreased or increased by the 2020, 2030, and 2040 population estimates shown.



Sources:

- 1980, 1990, 2000, and 2010 Census

Residential construction has remained largely steady in Columbiana County. According to the Ohio Development Services Agency, residential construction averaged 66.5 units annually between 2013 and 2017. The following table presents the residential construction data.

RESIDENTIAL CONSTRUCTION 2013-2017					
Criterion	2013	2014	2015	2016	2017
Total Units	30	16	50	90	80
Total Valuation	\$4,840	\$2,311	\$6,721	\$11,417	\$10,879
Single-Unit Buildings	28	16	27	32	28
Avg. Cost per Single Unit Building	\$165,713	\$144,409	\$177,879	\$180,290	\$200,054
Multi-Unit Buildings	2	0	23	58	52
Avg. Cost per Multi-Unit Bldg.	\$100,000	%0	\$83,391	\$97,367	\$101,496

Understanding trends associated with populations corresponding with various social vulnerability indicators can inform hazard mitigation decision-making. For instance, in areas with a low median household income, households may not be able to afford mitigation measures on their own. Populations living under the poverty line may have difficulty recovering; thus, a community can lessen the indirect losses those families incur by strengthening capabilities to support those populations (e.g., assisting with access to FEMA and other governmental agencies accepting requests for disaster assistance, considering all options for structural mitigation projects to protect areas where clusters of those populations live, etc.). Phillips, Thomas, Fothergill, and Blinn-Pike (2010) provide a series of social vulnerability indicators. The following indicators¹ correspond to data that are available to the Columbiana County planning committee.

- **Age:** Senior citizens are reluctant to secure aid after a disaster out of concern they may lose their independence. (Proxy Data per Census: Under 18, 65+)
- **Class:** Lower-income families and households tend to live in housing that suffers disproportionately during disasters. (Proxy Data per Census: Median household income, Poverty %)
- **Gender:** Women tend to be the ones most likely to secure relief aid for the family, yet they are under-represented and under-used in recovery efforts. (Proxy Data per Census: Female population)
- **Literacy:** Few options exist to inform and prepare people with low reading levels. (Proxy Data per Census: No diploma)

¹ Definitions are quotes from the Phillips et al. text. See p. 3 of the first edition.

- **Race & Ethnicity:** Warning messages tend to be issued in the dominant language with an expectation that people will take the recommended action immediately. Research indicates that culture influences how people may receive and interpret warnings and how they may respond. (Proxy Data per Census: White, Black/African American, Two or more races, Language other than English spoken in the home)

The following table presents these indicators and the corresponding demographics.

SOCIAL VULNERABILITY INDICATORS																									
Jurisdiction	AGE										CLASS										GENDER				
	Under 18					65+					Median Household Income					Poverty%					Female Population				
	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017
Columbiana County	27,268	-13.51%	23,584	-7.76%	21,754	16,843	5.64%	17,793	1004.95%	196,604	\$34,226.00	43.01%	\$48,948.00	-7.05%	\$45,498.00	11.5	39.13%	16	-3.75%	15.4	56,373	-4.82%	53,656	-3.09%	51,998
Columbiana City	1,070	4.67%	1,120	-9.20%	1,017	1,426	22.65%	1,749	17.61%	2,057	\$34,560.00	5.51%	\$36,464.00	32.35%	\$48,259.00	25.2	-32.54%	17	-41.76%	9.9	3,406	-3.05%	3,302	2.15%	3,373
East Liverpool City	3,546	-19.94%	2,839	-4.72%	2,705	2,100	-22.19%	1,634	-3.24%	1,581	\$23,138.00	44.48%	\$33,429.00	-8.97%	\$30,430.00	25.2	9.92%	27.7	-4.33%	26.5	7,019	-16.36%	5,871	-1.96%	5,756
East Palestine City	1,330	-17.97%	1,091	2.93%	1,123	820	-5.24%	777	7.08%	832	\$35,738.00	16.53%	\$41,646.00	-0.21%	\$41,559.00	10	38.00%	13.8	-16.67%	11.5	2,545	-5.46%	2,406	2.49%	2,466
Hanoverton Village	96	1.04%	97	-17.53%	80	77	-18.18%	63	1.59%	64	\$36,538.00	8.11%	\$39,500.00	4.43%	\$41,250.00	3.2	128.13%	7.3	135.62%	17.2	207	3.86%	215	-13.02%	187
Leetonia Village	587	-12.95%	511	-2.74%	497	245	6.53%	261	41.76%	370	\$37,714.00	12.31%	\$42,358.00	21.98%	\$51,667.00	7	152.86%	17.7	-36.16%	11.3	1,025	-2.54%	999	13.01%	1,129
New Waterford Village	354	-16.10%	297	23.23%	366	193	2.59%	198	19.19%	236	\$35,000.00	19.29%	\$41,750.00	-11.33%	\$37,019.00	9.5	17.89%	11.2	133.93%	26.2	722	-9.28%	655	30.08%	852
Rogers Village	82	-39.02%	50	-38.00%	31	25	8.00%	27	48.15%	40	\$31,250.00	-4.80%	\$29,750.00	31.51%	\$39,125.00	14.7	247.62%	51.1	-75.54%	12.5	126	-1.59%	124	-6.45%	116
Salem City	2,780	-6.29%	2,605	39.85%	3,643	2,451	-4.20%	2,348	-8.35%	2,152	\$30,006.00	13.11%	\$33,939.00	16.25%	\$39,454.00	11.7	77.78%	20.8	-2.88%	20.2	6,596	-2.73%	6,416	-4.82%	6,107
Washingtonville Village	205	-3.41%	198	-5.56%	187	100	10.00%	110	35.45%	149	\$29,219.00	35.79%	\$39,676.00	14.77%	\$45,536.00	19.9	24.12%	24.7	2.43%	25.3	407	0.98%	411	10.22%	453
Lisbon Village	694	-6.05%	652	0.61%	656	443	-1.58%	436	4.36%	455	\$27,841.00	6.00%	\$29,512.00	7.48%	\$31,719.00	14.1	-7.80%	13	141.54%	31.4	1,120	32.77%	1,487	2.22%	1,520
Jurisdiction	LITERACY					RACE & ETHNICITY																			
	No Diploma					White					Black/African American					Two or More Races					Other than English				
	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017	2000	%	2010	%	2017
Columbiana County	16,983	-24.07%	12,895	-15.65%	10,877	108,071	-4.73%	102,959	-3.52%	99,332	2,468	-2.55%	2,405	-2.33%	2,349	885	59.32%	1,410	28.51%	1,812	3,728	-42.17%	2,156	-9.18%	1,958
Columbiana City	N/A	N/A	729	-53.50%	339	6,239	0.83%	6,291	-0.16%	6,281	38	-5.26%	36	-27.78%	26	50	-16.00%	42	-7.14%	39	N/A	N/A	42	95.24%	82
East Liverpool City	2,501	-27.67%	1,809	-15.70%	1,525	12,153	-15.49%	10,270	-5.74%	9,681	630	-18.89%	511	29.55%	662	231	43.29%	331	4.23%	345	244	-52.05%	117	-29.91%	82
East Palestine City	N/A	N/A	537	-20.67%	426	4,842	-4.23%	4,637	-5.48%	4,383	18	-38.89%	11	681.82%	86	34	-2.94%	33	-27.27%	24	177	-44.07%	99	10.10%	109
Hanoverton Village	48	-31.25%	33	9.09%	36	381	7.09%	408	-19.36%	329	1	-100.00%	-	0.00%	-	4	-100.00%	-	0.00%	24	15	-53.33%	7	71.43%	12
Leetonia Village	253	-5.93%	238	-21.85%	186	2,021	-5.24%	1,915	11.59%	2,137	6	-33.33%	4	75.00%	7	8	262.50%	29	24.14%	36	51	-9.80%	46	-52.17%	22
New Waterford Village	159	-25.16%	119	42.86%	170	1,376	-11.70%	1,215	18.85%	1,444	1	100.00%	2	850.00%	19	15	-26.67%	11	118.18%	24	27	-70.37%	8	-25.00%	6
Rogers Village	44	0.00%	44	-2.27%	43	264	-11.74%	233	2.15%	238	-	0.00%	1	-100.00%	-	2	-50.00%	1	100.00%	2	11	-100.00%	0	0.00%	0
Salem City	1,705	-25.57%	1,269	1.73%	1,291	11,996	-1.68%	11,795	-3.71%	11,357	63	33.33%	84	97.62%	166	72	101.39%	145	31.03%	190	332	-15.66%	280	25.71%	352
Washingtonville Village	110	42.73%	157	-35.67%	101	775	1.42%	786	5.47%	829	1	600.00%	7	-42.86%	4	8	-37.50%	5	-80.00%	1	13	-84.62%	2	11.50%	25
Lisbon Village	464	-44.83%	256	39.45%	357	2,725	0.81%	2,747	-3.82%	2,642	25	28.00%	32	15.63%	37	17	52.94%	26	7.69%	28	103	16.50%	120	0.00%	55

Economic and Business Development

Hazard Mitigation Relevance: Describing economic and business development trends helps to assess dependencies between economic sectors and the infrastructure needed to support them (FEMA, 2013).

The Office of Research within Ohio’s Development Services Agency noted changes in the number of establishments and employment between 2011 and 2016. The following table presents that data.

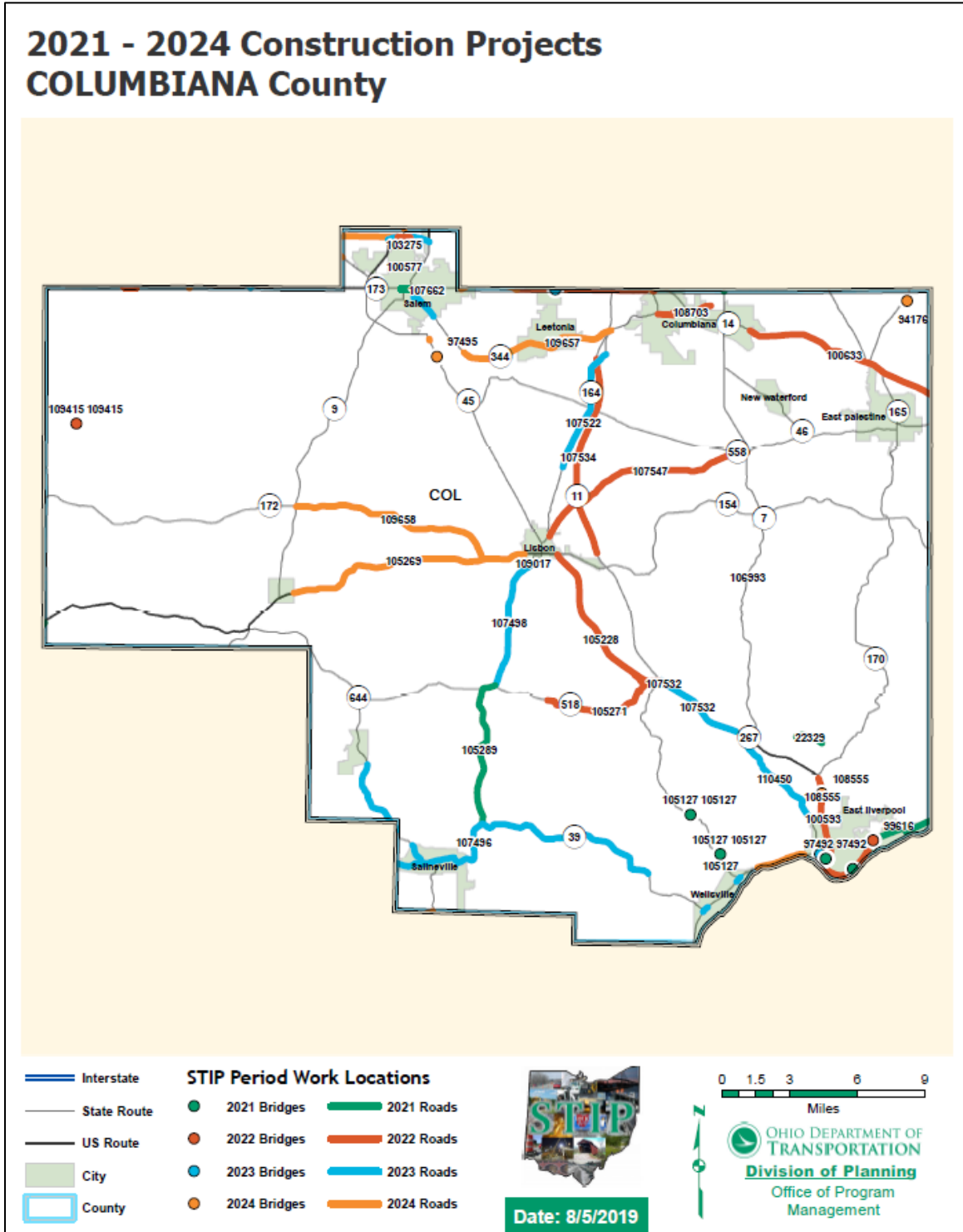
ESTABLISHMENTS, EMPLOYMENT, AND WAGES BY SECTOR, 2011 AND 2016 COMPARISON								
Sector	Number of Establishments		Average Employment		Total Wages		Average Weekly Wage	
	Since 2011 (%)	2016	Since 2011 (%)	2016	Since 2011 (%)	2016 (\$)	Since 2011 (%)	2016 (\$)
Private Sector	-4.8%	1,957	0.3	24,812	12.3%	\$848,506,312	12.1%	\$658
Goods-Producing	-7.8%	404	10.4	7,379	20.1%	\$309,412,943	8.6%	\$806
Natural Resources & Mining	48.3%	43	16.6	379	-2.4%	\$12,351,858	-16.2%	\$327
Construction	-12.6%	188	0.0	964	29.7%	\$44,328,687	29.6%	\$884
Manufacturing	-10.8%	173	11.9	6036	19.9%	\$252,732,398	7.0%	\$805
Service-Producing	-4.0%	1,553	-3.5	1,7433	8.3%	\$539,093,369	12.3%	\$595
Trade, Transportation & Utilities	-6.1%	512	-0.6	6036	7.6%	\$201,611,565	8.3%	\$642
Information	16.7%	21	16.3	1,157	31.7%	\$6,899,923	13.4%	\$845
Financial Services	-1.8%	160	-14.9	720	6.7%	\$28,331,708	25.3%	\$757
Professional & Business Services	-6.0%	234	-6.4	1,720	15.5%	\$63,105,992	23.4%	\$706
Education & Health Services	-2.3%	255	-7.2	5,139	4.7%	\$178,084,572	12.7%	\$666
Leisure & Hospitality	-7.1%	182	2.9	2,679	14.9%	\$32,888,409	11.8%	\$236
Other Services	-0.5%	186	-4.0	977	12.2%	\$28,012,989	16.7%	\$551
Federal Government			3.6	606	6.3%	\$39,187,271	2.6%	\$1,244
State Government			-10.7	326	-10.6%	\$16,961,527	0.2%	\$1,001
Local Government			-2.2	3,881	8.2%	\$143,688,978	10.7%	\$712

Transportation

Hazard Mitigation Relevance: The transportation infrastructure is a key community asset, particularly in the response and recovery phases. Ensuring open arterial routes helps with emergency response, the movement of life-saving (or sustaining) supplies, etc. Identifying key transportation assets and understanding their potential vulnerabilities can inform projects designed to support their continuity in emergency situations.

Information regarding future transportation projects comes from the Ohio Mid-Eastern Governments Association’s (OMEGA’s) long-range transportation plan as well as the Ohio

Department of Transportation's (ODOT's) planned road and bridge projects from 2021 through 2024. According to ODOT, most transportation projects will occur in the central and eastern areas of the county (per the figure below).



OMEGA's long-range transportation plan lists 12 projects for Columbiana County, four of which are within the corporate limits of the City of Salem.

- Planning study for US 30 Ohio's Energy Corridor (in progress as of 2015), estimated cost \$750,000
- SR 7 and TR 1131 Bell School Road Intersection Upgrade for Beaver Local Schools (funded for design as of 2015)
- Calcutta/Smith Ferry Road (CR 430) Improvements, programmed for construction in 2017, estimated cost \$4.29M
- McGuffy Drive Improvements
- Completion of Columbia Drive Extension in St. Clair Township, estimated cost \$2.11M
- Complete lake to river pedestrian/bicycle trail
- SR 39 improvements in East Liverpool
- US 62/SR 45 Bypass Connection in Salem
- Overpass on South Lincoln to SR 45 in Salem
- SR 14 Traffic Flow (east side of City, SRMC) in Salem
- Bicycle lanes to reach Greenway Trail in Salem
- 16 school road improvements in Wellsville/Yellow Creek Township to new 500-acre development near SR 7 and the Wellsville Intermodal Facility

Land Use

Hazard Mitigation Relevance: Land use descriptions inform discussions of risk and vulnerability. For example, flooding may exist as a high risk, but may not correlate with high vulnerability in open or unpopulated forested areas. Further, understanding land use may identify valuable areas where natural features can provide protective functions that reduce the magnitude of hazard events (FEMA, 2013). *Proposed* land uses can inform discussions about the types of assets that future hazard occurrences could impact.

The following graphic highlights land use identified as “commercial/industrial/transportation” and “residential.”

COLUMBIANA COUNTY HAZARD MITIGATION PLAN

Columbiana County Selected Land Uses

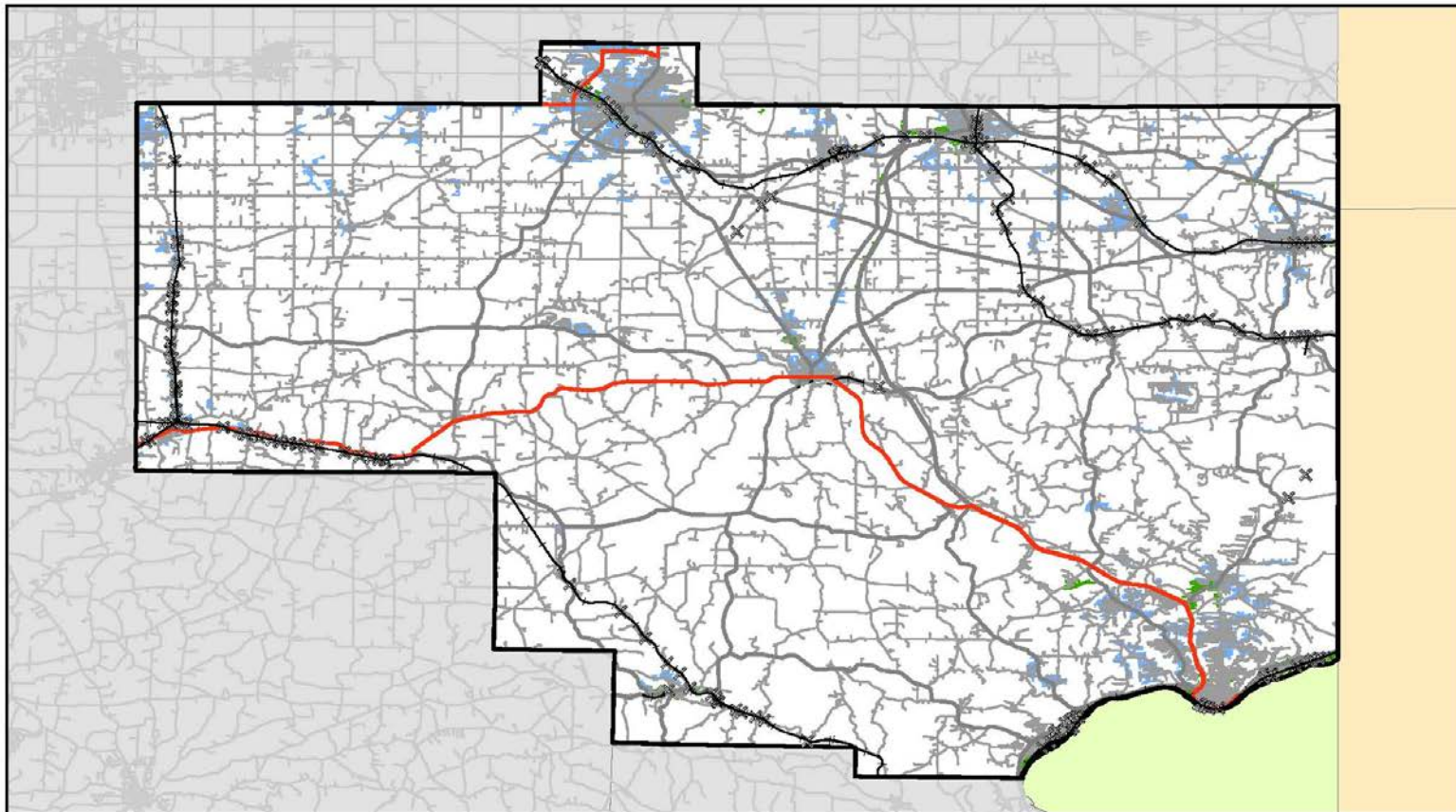
Data Source(s):
U.S. Geological Survey

DISCLAIMER: Data is meant for use as reference only. Some sources may be intended to be used at national or regional scales and are thus used beyond their original intent for demonstrative purposes.



Selected Land Uses

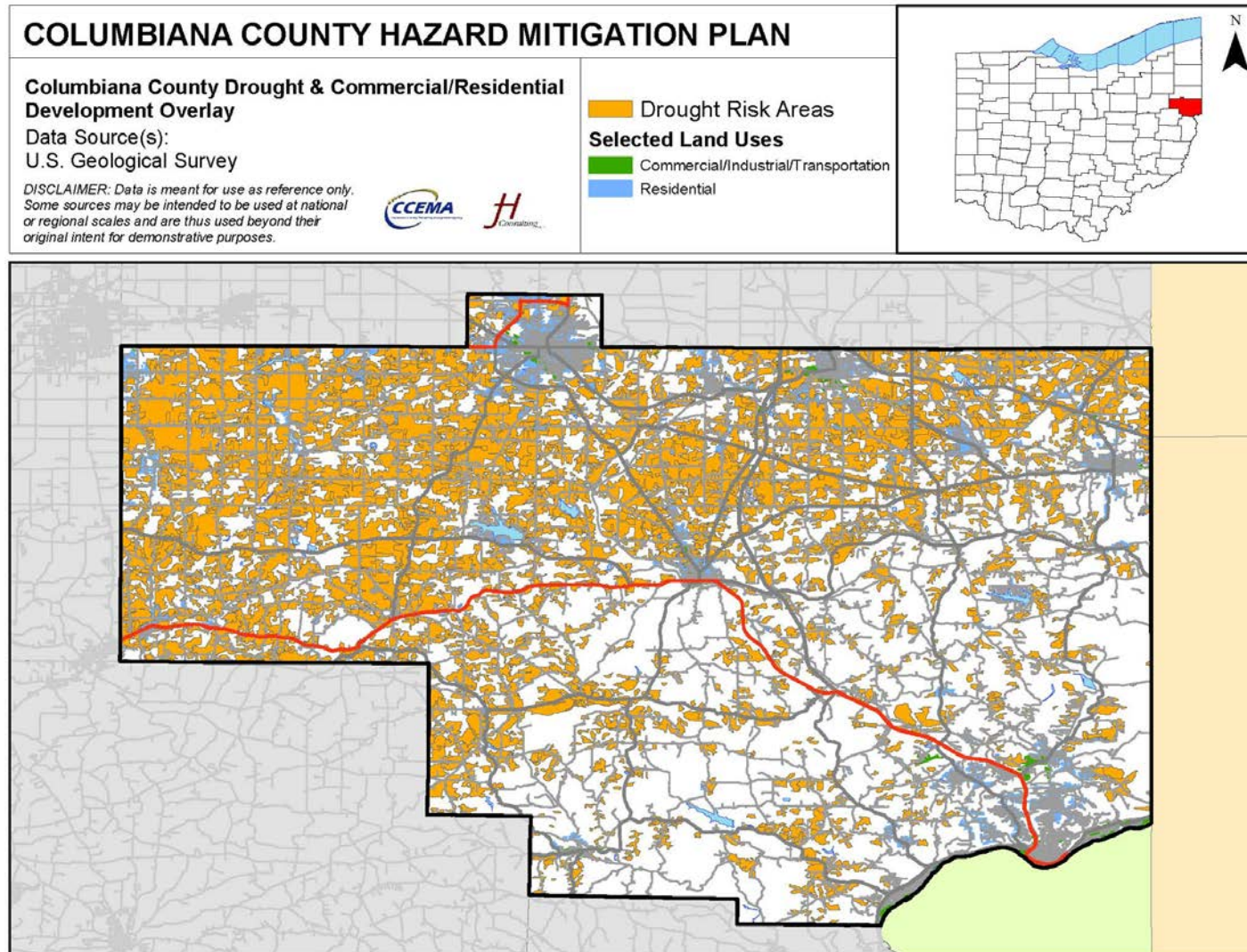
- Commercial/Industrial/Transportation
- Residential



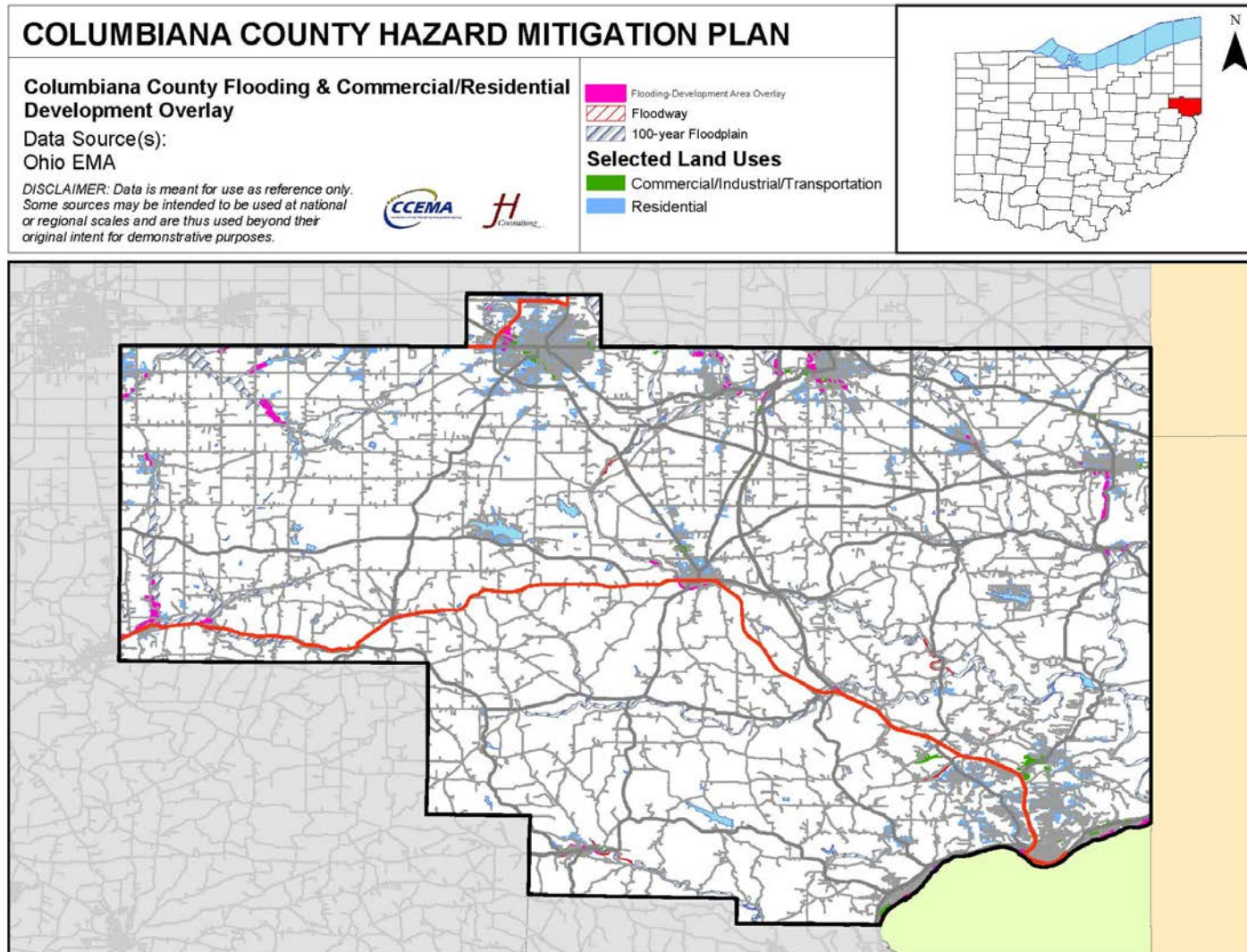
Planned Development and Hazard Areas

When planning for new development, this plan suggests that it is vital to consider areas where new development avoids damages from future hazardous events. In Columbiana County, local officials plan to develop transportation assets and commercial and residential areas. The following map identifies areas targeted for development cross-referenced with various risk areas per the risk assessment in Section 2.0.

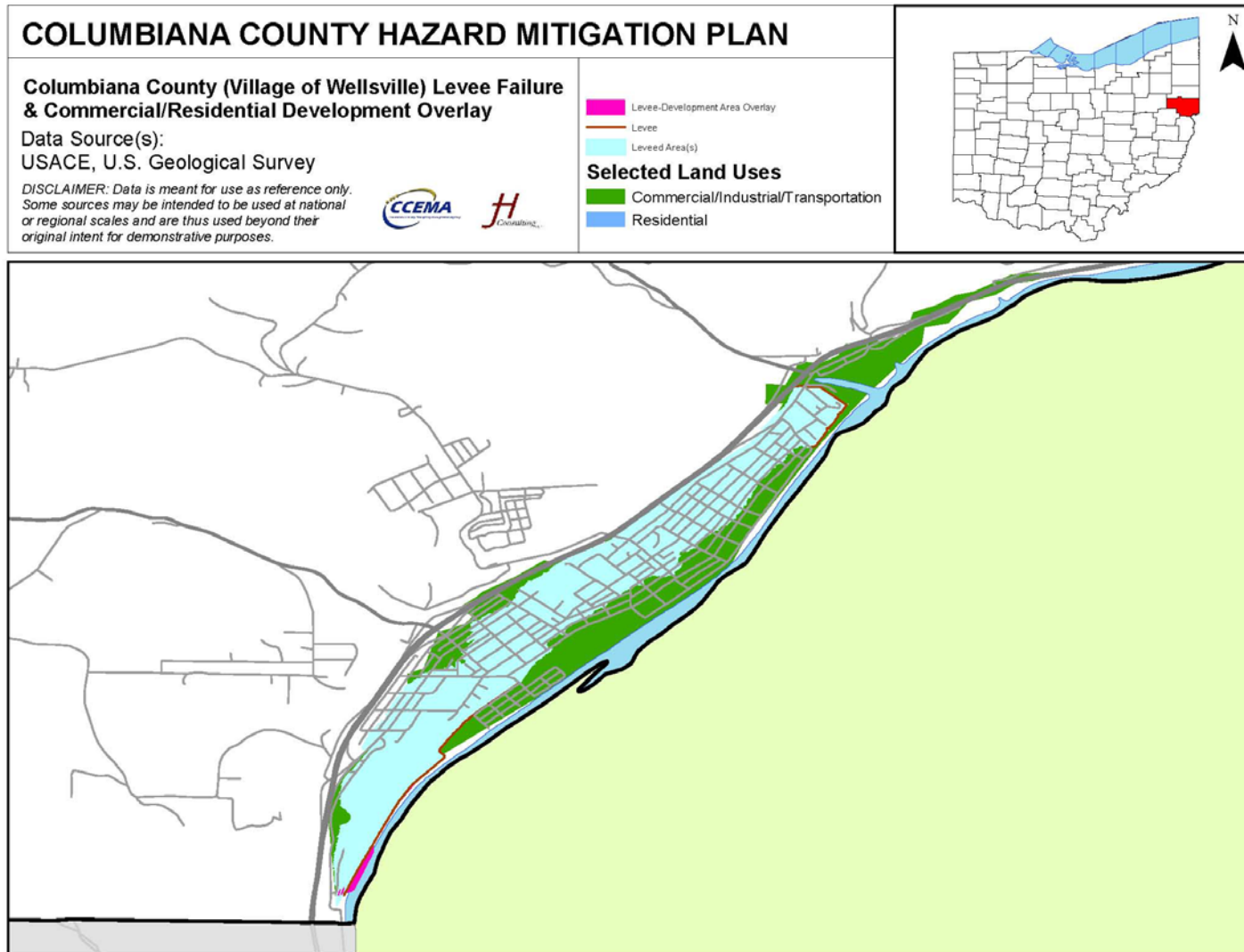
The following graphic shows drought risk areas alongside areas targeted for residential as well as commercial/industrial/transportation development. None of these areas overlap. Drought conditions would not likely impact structures on adjacent properties.



The following graphic shows flooding risk areas alongside areas targeted for residential as well as commercial/industrial/transportation development. Local officials should avoid development in these areas. However, if development occurs, consider elevating structures (or service connections) above the base flood elevation, etc.



The following graphic shows areas in Wellsville protected by the levee alongside areas targeted for residential as well as commercial/industrial/transportation development.



The following graphic shows hazardous materials risk areas alongside areas targeted for residential as well as commercial/industrial/transportation development. Local officials should ensure facilities developed in these areas have shelter-in-place capabilities, to include master switches to shut off fresh air intake, supplies on-hand, etc. Local officials may also reach out to new residents in these areas to ensure they have access to the mass notification system and know the importance of a household emergency plan.

