

Borough of Ambridge Pennsylvania

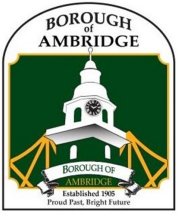


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Community Resilience Building Workshop

Summary of Findings

June 2021



Borough of Ambridge, Pennsylvania

Community Resilience Building Workshop

Summary of Findings

Overview

The need for municipalities, county and regional planning and response organizations, states, and federal agencies to increase resilience and adapt to extreme weather events and a changing climate is strikingly evident amongst the communities across the state of Pennsylvania. Recent events such as Tropical Storm Irene and Super Storm Sandy have reinforced this urgency and compelled leading communities like the Borough of Ambridge to proactively collaborate on planning and mitigating risks. Ultimately, this type of leadership is to be commended because it will reduce the vulnerability and reinforce the strengths of people, infrastructure, and ecosystems and serve as a model for other communities in southwestern Pennsylvania, the Mid-Atlantic, and the Nation.

Recently, the Borough of Ambridge embarked on a pilot program lead through a partnership between The Nature Conservancy, Pennsylvania Municipal League, and Sustainable Pittsburgh. At the pilot program's core, this partnership provided the Borough with a voluntary process to conduct an assessment of climate change impacts and develop and prioritize solutions. In June 2021, a municipal-based core team organized a Community Resilience Building Workshop facilitated by the Nature Conservancy and the partners. The core directive of this pilot program was the engagement with and between community members to define strengths and vulnerabilities and the development of priority resilience actions for the Borough of Ambridge.

The Borough of Ambridge Community Resilience Building Workshop's central objectives were to:

- Define top local, natural, and climate-related hazards of concern;
- Identify existing and future strengths and vulnerabilities;
- Identify and prioritize actions for the Borough;
- Identify opportunities to collaboratively advance actions to increase resilience alongside organizations from across the Borough, and beyond.

The Borough of Ambridge benefited from a unique “anywhere at any scale”, community-driven process called Community Resilience Building (CRB) (www.CommunityResilienceBuilding.org). The CRB’s tools, other relevant planning documents, and local maps were integrated into the workshop process to provide both decision-support and visualization around shared issues and existing priorities across the Borough of Ambridge. The Beaver County Hazard Mitigation Plan (2016) and the Beaver County Comprehensive Plan (2010) were particularly instructive. Using the CRB process, rich with information, experience, and dialogue, the participants produced the findings presented in this summary report including an overview of the top hazards, current concerns and challenges, existing strengths, and proposed actions to improve resilience to hazards and climate change today and in the future.

The summary of findings transcribed in this report, like any that concern the evolving nature of risk assessment and associated action, are proffered for comments, corrections and updates from workshop attendees and other stakeholders alike. The leadership displayed by the Borough of Ambridge on community resilience building will benefit from the continuous and expanding participation of all those concerned.

Summary of Findings

Top Hazards and Vulnerable Areas for the Community

Prior to the CRB Workshop, the Borough of Ambridge Core Project Team identified the top hazards for the Borough and region. The hazards of greatest concern included flooding from the Ohio River and stormwater runoff, tornados, excessively heavy snowfall during winter blizzards, and severe droughts. Additional hazards mentioned and discussed during the workshop included more intense and longer duration heat waves. These hazards have direct and increasing impacts on the Borough’s infrastructure, residents, and environment including neighborhoods, natural/open areas (stream, parks), roads, bridges, stormwater rainage systems, drinking water systems, businesses, municipal facilities, health care network, NGOs, churches, social support services and other critical infrastructure and community assets.

Top Hazards and Areas of Concern for the Community

Top Hazards

- Flooding (Riverine and Stormwater Runoff)
- Tornados
- Excessively Heavy Snowfall - Winter Blizzards
- Severe Droughts

Areas of Concern in Borough of Ambridge* - Several categories and locations were identified as being particularly vulnerable by workshop participants including:

Infrastructure: Port of Ambridge, Industrial Park (along Ohio River), Beaver County Transit, Wastewater Treatment Plant, Rail Line & Facilities, Ambridge Water Authority Reservoir System.

Ecosystems/Parks/Open Space: Ohio River, Big Sewickley Creek (flooding, ice jams).

Roads, Bridges, and Road Network: Ambridge Aliquippa Bridge, 8th and Merchant Street, Route 989 (8th to 23rd), Route 65.

Vulnerable Populations: Elderly, Low/Moderate Income Residents, Homeless Population, Business Owners, Non-English Speakers.

*Information from workshop participants augmented via review of the Beaver County HMP (2016) and the Beaver County Comprehensive Plan (2010). *See Appendix A for list of mitigation/adaptation actions from the Borough of Ambridge and Appendix B for map resources from both of these documents..*

Current Concerns and Challenges Presented by Hazards

The Borough of Ambridge has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, the Borough of Ambridge has experienced a series of highly disruptive and damaging weather events including August 2011 floods, Super Storm Sandy (October 2012), Tropical Storm Andrea (October 2013), major winter storm (December 2016), and other less impactful but more frequent events. Impacts from Sandy caused some wind and tree damage across portions of the Borough of Ambridge. The other major storms of record dropped heavy rainfall amounts resulting in flash flooding or excessive snowfall amounts coupled with high winds knocking out power and isolating residents and neighborhoods due to extended road closures. The magnitude and intensity of these events and others across Pennsylvania has increased awareness of natural hazards and climate change, while motivating communities such as the Borough of Ambridge to proactively and comprehensively improve their resilience.

This series of extreme weather events highlights that the impacts from hazards are diverse: ranging from riverine flash flooding of critical infrastructure, bridges, roads, and low-lying areas; localized flooding from stormwater runoff during intense storms and heavy precipitation events; property damage from trees, wind, snow, and ice. Longer periods of elevated heat, particularly in July and August, have raised concerns about vulnerable segments of the population including elderly, disabled, and/or isolated residents. The combination of these issues presents a challenge to preparedness and mitigation priorities and requires comprehensive, yet tailored actions for particular locations and/or areas across the Borough of Ambridge.

The workshop participants were generally in agreement that the Borough of Ambridge is experiencing more intense and frequent storm events and heat waves. Additionally, there was a general concern about the increasing challenges of being prepared for the worst case scenarios (i.e. major disasters and storms) throughout the year, but particularly in the fall/winter months due to more intense snow and ice storms coupled with colder weather. The impact of the current Covid-19 pandemic was raised several times by workshop participants.



(Credit: Ambridge Connect)



(Credit: oldeconomyvillage.org)



(Credit: alleghenylandturst.org)

Specific Categories of Concerns and Challenges

As in any community, the Borough of Ambridge is not uniformly vulnerable to hazards and climate change, and certain locations, assets, and populations have and will be affected to a greater degree than others. Workshop participants identified the following items as their community's key areas of concerns and challenges across three broad categories - Infrastructure, Societal, and Environmental.

Infrastructure Concerns and Challenges

Roads, Bridges, and Road Networks:

- Road network and associated stormwater drainage system inadequate in locations.
- Outside traffic using the Borough as a cut through increases congestion and accelerates the decline of the roadways.
- Limited transportation options other than personal automobile.
- Certain areas of older road made of or supported by brick which is wearing out and in some places subsiding.
- Impacts to Ambridge Aliquippa Bridge would result in disruption of travel and commute as well as commerce exchange across the Ohio River. Recent closure for painting and repairs resulted in a reported 40% loss in retail revenue in the Borough.
- Sewer and water pipes failures affecting roadways (i.e. 8th and Merchant Street).
- Increasingly routine nuisance flooding on Route 65.
- Concerns about the condition of state-owned and maintained roads including Route 989 from 8th to 23rd.
- Increased traffic volume in last decade coupled with one-way street and early morning commute is resulting in high congestions and quality of life declines as well as concerns about access and egress during emergencies.
- Hub for raw material transport leads to potential for more accidents and environmental damages without an alteration in traffic patterns.

Drinking Water/Stormwater Management:

- Outdated stormwater management infrastructure (i.e. pipes, culverts) are in need of upgrades and/or replacement to handle the current and projected increases in precipitation intensity and duration.
- Limited number of installed green stormwater infrastructure to help naturally reduce runoff.
- Drinking water pipes go over the Ambridge Aliquippa Bridge from the reservoir which makes Ambridge vulnerable to lack of water supply if Bridge and pipes compromised.
- Shell Pipeline intersects with the drinking water lines which could lead to issues that impact fuel and water availability.
- Impacts of heat waves and drought due to low rainfall amount on the Ambridge Water Authority reservoir water levels – primary drinking water source for Ambridge.

Specific Categories of Concerns and Challenges (cont'd)

Infrastructure Concerns and Challenges (cont'd)

Emergency Management and Preparedness:

- Need to maintain and enhance collaboration with neighboring municipalities, county, and region to ensure adequate preparation for and prevention of future impacts of extreme weather and climate change.
- Aging electrical grid presents potential issues during response and recovery.
- Growing number of tractor trailers carrying flammable liquids and other concerning cargo moving directly through the Borough could result in more accidents and air pollution from exhaust.
- Major rail line with over 55 large crude oil tankers going through on a monthly basis increases the risk of explosion and exposure in the event of derailment within or proximate to the Borough.

Housing:

- Ongoing concerns about the displacement of older generation and lower income residents from the Borough
- Limited amount of housing affordable to younger families and young professionals resulting in an aging demographic.
- Concerns about the impacts of aging infrastructure on property values.

Societal Concerns and Challenges

Vulnerable Populations:

- Implications to disproportionately disadvantaged populations (i.e. elderly, working poor, low income residents) from winter storms and heatwaves.
- Ageing community with many on a fixed income.
- Challenges attracting new employment into the public service workforce (i.e. police, fire, etc.).

Businesses:

- Business community is vulnerable to natural disasters and major events.
- Limited parking in the downtown area that effectively limits access by customers to retail shops.
- High vacancy rates in the business district.

Specific Categories of Concerns and Challenges (cont'd)

Societal Concerns and Challenges (cont'd)

Community Services:

- Limited options for public transportation via bus line or rail.
- Limited growth in tax base relative to inflation rates with cost of repairs and services increasing.
- Wastewater Treatment Plant vulnerable to flooding from Ohio River.

Buildings/Development:

- Struggle between land use and services needs of older, more-established residents versus newly settled arrivals which may alter perceptions of community character and sense of place (i.e. urban-rural distinctions).
- Many historic buildings and grounds (200 plus years old) in need of costly repairs and restoration.

Environmental Concerns and Challenges

Trees and Forests:

- Increasing impacts on tree health from pests and pathogens resulting in a number of dead and damaged trees posing risks to power lines and road closures during emergencies.
- Impacts to urban tree canopy and individual trees due to excessive trimming to minimize potential issues with overhead power lines and roadways.
- The very densely populated and highly treed community poses a risk in the event of high winds.

Open Space and Watersheds:

- Future flooding projections due to precipitation event of longer duration and higher intensity will present a challenge in rivers, creeks, streams, and wetland systems experiencing issues, currently.
- Increased contaminant loads in waterways due to runoff and erosion from increasingly intense precipitation events.



(Credit: breatheproject.org)

Current Strengths and Assets

Just as certain locations, assets, and populations in the Borough of Ambridge stand out as particularly vulnerable to the effects of hazards and climate change, other features are notably assets for community resilience building. Workshop participants identified the following items as their community's key strengths and expressed interest in using them as the core of future resilience building actions.

- Clearly, the responsive and committed leadership exhibited by officials, staff, volunteers, and residents is a very appreciated strength within and across the Borough of Ambridge. Ongoing collaboration between local, regional, and county organizations, departments, faith-based entities, NGOs, adjoining municipalities, academic institutions, and various state-level agencies, among others, on priorities identified will help advance comprehensive, cost-effective, community resilience building actions.
- The Borough has highly experienced staff with access to adequate resources for most emergency situations. The coordination amongst various departments including leadership, Public Works, Police, Fire, Emergency Service, Borough Manager's Office, and the Ambridge Water Authority within the Borough and across the Region and County was cited as a highly valued community strength.
- Quick response to issues involving aging infrastructure and sink holes due to robust communications between Borough departments, residents, and business owners.
- The strong and engaged faith-based community provide the means to communicate with and amongst the community members (i.e. church bulletins, etc.) to ensure needs are raised and met.
- Downtown Economic Development team is very good at organizing and completing priority projects for the Borough.
- Ambridge Connection on Facebook identified as a key group that helps direct attention to issues in the Borough that often results in resolution.
- Gateway to Beaver County from the south and offers accessibility without tunnels or bridges for attracting residents as well as shoppers and diners.
- Borough is the hub for two bus lines.
- The Ambridge Aliquippa Bridge is key community asset that allows for transportation, drinking water supply, and commerce over the Ohio River.
- Borough is a very walkable community which helps advance sustainability efforts.

Current Strengths and Assets (cont'd)

- The Borough is increasingly preparing for climate change given the concern about current impacts from hazards and the threat of escalation - particularly from storms, flooding, drought, and wind.
- Outstanding working relationship between Ambridge Water Authority and Department of Public Works that revolves around infrastructural requirements for services like providing high quality drinking water to residents.
- Strong and supportive volunteer network that provide critical capacity for NGOs (i.e. Rotary Club) as well as for Boards and Committees in the Borough of Ambridge.
- The Ohio River is an asset for industrial purposes and parallel to Route 65 with railway.
- Recent replacement of equipment with new pumping system which has increased capacity for stormwater.
- Recent influx of younger families with children couple with opening of new business and breweries that are attracting young professionals to the Borough.
- Long history of immigration beginning in 1905 and diversity of residents that continues to this day and is celebrated as a community strength.
- Main Street corridor (1.6 miles in length) offers opportunity and infrastructure to support investment and further development and/or redevelopment.
- Designated Tree Community where the health and extent of the urban tree canopy is prioritized.
- Presence of full-time, paid Fire Department.
- The presence of two historic districts in the Borough with one designated as a National Historic Landmark (Old Economy Village) and the other on the national register (Historic Commerce District).
- Despite the proximity to Ohio River and the other primary waterway (Big Sewickley Creek), there is currently a limited amount of riverine flooding with localized, but not extensive impacts to buildings and property.
- Ambridge Water Authority has an uninterrupted service plan in place that places generators in all of the water service stations to ensure continuous power supply regardless of the severity of an extreme weather event.

Current Strengths and Assets (cont'd)

- Ambridge Water Authority committed to a capital improvement plan (2018) to address system weaknesses and resiliency improvements like improving aging infrastructure involved with moving and supplying water resources for residents.
- Ambridge Water Authority has a Swift 911 program that helps quickly directs customers (98% customers engaged) to information they need and alerts them during emergencies as well as during non-emergencies.
- Sheltering system in place within municipal buildings in the event of major disasters.
- Drinking water systems including reservoir were highlighted as a critical asset and strength for the Borough.
- Important system of parks (including parklets) in certain locations across the Borough which helps improve quality of life for residents and visitors (i.e. Walter Panic Park).



(Credit: ambridgeboro.org)

Recommendations to Improve Resilience

A common theme among workshop participants was the need to continue community-based planning efforts focused on developing adaptive measures to reinforce strengths and to reduce the Borough of Ambridge's vulnerability to extreme weather, climate change and other common concerns raised. To that end, the workshop participants reached agreement on several key topics requiring more immediate and/or ongoing attention including:

- **Long-term vision and growth** (i.e. development/redevelopment/rehabilitation of housing stock, transportation, diverse demographics, commerce, historic/cultural);
- **Infrastructure improvements** (i.e. drinking water supply system, stormwater management systems, roads/bridge network);
- **Quality of life improvements** (i.e. public amenities, sustainability, green infrastructure, walkability/bikability, streetscapes, traffic, housing, economy/taxes, Ecodistricts);
- **Emergency management** (i.e. communications, education, preparedness, outreach, continuation of services, business continuity/recovery).

In direct response, the workshop participants developed the following priority and other action list. Mitigation/adaptation actions from the Beaver County HMP (2016) are provided in Appendix A for cross reference. In addition, actions previously identified in the Beaver County Comprehensive Plan (2010) were reviewed for consistency with input from workshop participants.

Priority Actions

- Seek out ways to improve the public amenities, walkability, sustainability, and overall quality of life within the Borough to help enhance the health of residents, attract young professionals and families, and catalyze the local economy through more visitation and commerce along Main Street and elsewhere.
- Reach out to adjoining municipalities – in partnership with Beaver County Council of Governments - along the Ohio River to discuss opportunities for collaboration on issue of common concern related to resilience and sustainability as well as opportunities for regionalization of services.

Priority Actions (cont'd)

- Conduct an overall financial assessment of the cost of proposed and projected project expenses for the Borough to realize a more resilient, sustainable, and desirable municipality and use assessment to help build the case for improvement costs amongst residents.
- Continue to identify and advance projects that help to secure a back-up drinking water supply including an assessment of groundwater location/extent and feasibility of drilling wells within or more proximity to the Borough of Ambridge.
- Pursue - in partnership with the municipality of Harmony - the completion of a joint road rerouting study to help create a better truck traffic route for industrial purposes (i.e. industrial transport thoroughway) that would avoid damage to roads, reduce emissions, and prevent associated risks of accidents within the Borough.
- Work to develop and operationalize (with extensive community input) a comprehensive plan for evacuation, sheltering, and emergency management that includes the longer-term placement of residents in homes in the event of severe weather or other emergencies.
- Look to work with Beaver County Council of Governments and Sustainable Pittsburgh to establish an Ecodistrict within the Borough that is also connected with other Ecodistricts as part of a network to help build local to regional collaboration.

Other Actions

- Assess and further connect the Borough's priorities with those for Beaver County in hopes of securing more resources and capacity for projects related to risk assessment, transportation improvements, and potentially the development of Ecodistricts within the Borough.
- The current and growing pressure on the road network within the Borough now requires increases in staff for road crews to ensure routine maintenance is completed in a timely and responsive fashion.
- Ensure the current agreement for Shell to pay for an interconnect for back-up drinking water supply with a neighboring water authority is in place in hopes of providing a temporary solution in the event the current water line is compromised.
- Participate fully in the county-wide risk assessment currently underway as it moves into Phase 2.
- Complete streetscape project on Merchant Street (8th to 12th) that include various upgrades and road improvements in this downtown area.
- Contribute to the completion of the Ohio River bike path to help improve connectivity, recreational-related health benefits, and increase multi-modal transportation options. In addition, continue to advocate for more expansive bike path options including one connecting up to Pittsburgh.
- Work with the County staff and other more regional organizations to review existing material and/or conduct a strategic analysis of how to pay for needed infrastructure improvements.
- Explore different mechanisms such as a stormwater authority for the Borough that could help provide impact fees/funds for specific improvements and help mitigate increasingly necessary expenditures using tax dollars (i.e. special purpose funding versus from general tax/budget).
- Check in on an annual basis with state road officials and staff to ensure the proper level of attention is directed to maintenance and upkeep of key state roads leading to and within the Borough – particularly Route 989 (between 8th and 23rd).
- Support and conduct a weight restriction campaign by the Police Department to help reduce inappropriate trailer truck traffic within the Borough.

Other Actions (cont'd)

- Support work by the Shade Tree Committee to develop a comprehensive urban forestry/tree canopy plan to guide trees/shrub planting and maintenance in a more strategic way across the Borough - taking into consideration location, species, heat islands, and future climate conditions.
- Identify ways to elevate and expand the police and fire protection services to keep pace with continuously increasing demand across the Borough.
- Examine the process to help facilitate the development and/or rehabilitation of the Borough's housing stock including older, historic buildings in hopes of improving the safety, condition, and desirability of buildings for existing and new residents.
- Explore further options to enforce and require building owners to conduct routine maintenance and upgrades to improve the livability and safety of rental properties and neglected properties.
- Seek out ways to increase the overall preparedness of residents at the household level in order to help reduce the potential impacts during major events (i.e. family emergency preparedness plans, shelter in place).
- Work on improving and streamlining communications via various methods between neighboring municipalities to help increase effectiveness of preparedness, response, and recovery for residents and first responders.



(Credit: waymarking.com)



(Credit: Bloomberg.com)



(Credit: dailyadvent.com)

CRB Workshop Participants: Department/Organization

Borough of Ambridge Council

Borough of Ambridge - Borough Managers Office

Borough of Ambridge - Police Department

Borough of Ambridge - Department of Public Works

Borough of Ambridge - Fire Department

Borough of Ambridge - Code Enforcement/Zoning Department

Ambridge Water Authority

Beaver County Council of Governments

Rotary Club

Old Economy Village

Trinity School of Ministry

Downtown Economic Development Committee

Paramount Pursuits

Riverwise

Borough of Ambridge Core Project Team

Mario Leone - Ambridge Borough Manager

Michael Dominick - Ambridge Water Authority

Karen Ivancik - Ambridge Water Authority

Online CRB Workshop Facilitation Team

The Nature Conservancy - Adam Whelchel (Lead Facilitator/Workshop Manager)

The Nature Conservancy - Drew Goldsman (Small Group Facilitator)

Sustainable PA - Jim Price (Small Group Facilitator)

Pennsylvania Municipal League - Leslie Rhodes (Scribe)

The Nature Conservancy - Julie Ulrich (Scribe)

Sustainable PA - Sarah San Giovanni (Scribe)

Sustainable PA - Meredith Benek (Scribe)

Recommended Citation

Borough of Ambridge (2021). Online Community Resilience Building Workshop - Summary of Findings Report. The Nature Conservancy, Pennsylvania Municipal League, Sustainable Pittsburgh, Sustainable Pennsylvania. Borough of Ambridge, Pennsylvania.

Acknowledgements

Special thanks to the Borough leadership, staff, and community members for their willingness to embrace the process in hopes of a more resilient future for the Borough of Ambridge. This online Community Resilience Building Workshop was made possible in large part through the generous contribution of the facilitation team members who skillfully conducted the Borough of Ambridge Community Resilience Building workshop in close partnership with the Borough's Core Project Team.

Appendix A

Borough of Ambridge

Beaver County Natural Hazard Mitigation Plan (2016)

Mitigation Actions

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC001	Support the mitigation of vulnerable structures via retrofit (e.g. elevation, flood-proofing) or acquisition/relocation to protect them from future damage; repetitive loss and severe repetitive loss properties should be a priority, when applicable. Phase 1: Identify appropriate candidates and determine most cost-effective mitigation option (in progress). Phase 2: Work with the property owners to implement selected action based on available funding from FEMA and local match availability. Specifically identified are properties in the following areas: - Water Street, Railroad Street, and Beaver River Boulevard (Rochester Borough) 1400 Block of Riverside Drive and 600 Block of Mulberry Street (Bridgewater Borough) (The 600 block is lower priority as property flooding has been minimal over previous decade) 8th Street residences and businesses, Third Avenue, George Warner Building, J&J Catering, Fox's Pizza, SOI, U.S. Postal Office, Sewage Pump Station (Freedom Borough) 4th Street Creek, Crawford Street Creek, Route 51 at corner of North Street, CHJA, and Hill Road at Economy Street (South Heights Borough)										
	See above.	Existing	Flood	1, 3, 5	Township/Borough Engineering via NFIP FPA with PEMA and FEMA support	High	High	FEMA mitigation grant programs and local budget (or property owner) for cost share	Ongoing (outreach and specific project identification); Long-term DOF (specific project application and implementation)	High	SIP
BC002	Develop and implement an enhanced all-hazards, public outreach / education / mitigation information program on natural hazard risks, and outline the ways in which the program(s) can strengthen community mitigation and preparedness efforts. This program may include: - Develop/maintain a natural hazard risk management webpage on the municipal website where information and mapping can be posted. - Provide general natural hazard risk preparedness and mitigation, and related NFIP information in regular newsletter and mailings. - Provide natural hazard risk and risk reduction information through social media channels and e-mail blast systems. - Post flyers and other readily available NFIP informational materials at municipal hall, or distribute at regular civic meetings. - Enhance public outreach to residents in NFIP floodplain areas to inform them of annual grant opportunities, which may include distributing periodic articles and including handouts in the annual newsletter.										
BC003	Develop and implement an enhanced municipal training program, with specific focuses on the NFIP, CRS, flood mitigation projects, hazard mitigation, damage assessments, PEMA planning and project tools, FEMA eGrants program, and Marcellus Shale natural gas extraction. Information on trainings will be posted on the Emergency Services website.	N/A	All Hazards	1, 2, 4, 5	County, Municipality, PEMA, FEMA	Medium	Low	Municipal budget; HMA programs with local or County match	Short	High	EAP
BC004	Maintain compliance with and good standing in the NFIP, including adoption and enforcement of floodplain management requirements (e.g., regulating all new and substantially improved construction in special-hazard flood areas), floodplain identification and mapping, and flood insurance outreach to the community. Further meet and/or exceed the minimum NFIP standards and criteria through the following NFIP-related continued compliance actions identified in subsequent initiatives.										
	See above.	New and Existing	Flood	All	NFIP Floodplain Administrator (FPA); with support from PEMA, ISO, FEMA	Medium - High	Low-Medium	Municipal budget	Ongoing	Medium	LPR

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC005	Promote or adopt higher regulatory and zoning standards to manage flood hazard risk; specifically, through updates to the building codes, flood ordinances, and subdivision and land development ordinances. Goals of increased standards are to ensure new buildings and infrastructure are discouraged or prohibited in high-hazard areas in their jurisdiction.	New and Existing	Flood	1, 3, 4, 5	Township/Borough NFIP FPA and Board, with support of PEMA, Beaver County, Conservation District, and DCED for model ordinance	Medium	Low	Municipal budget	Short	Low	LPR
BC006	The County will work with DCED, Beaver County Conservation District, other State agencies, and the municipalities to provide model zoning regulations for floodplain restrictions that comply with the PA MPC.	New and Existing	Flood	All	Township/Borough NFIP FPA and Board, with support of PEMA, Conservation District, and DCED for model ordinance	Medium	Low	Municipal budget	Short	Low	LPR
BC007	Support participation in the NFIP CRS program by attending CRS workshop(s) if offered within the County. Join the CRS program if adequate resources to support long-term participation can be dedicated. See following related CAV initiative.	N/A	Flood	2, 3, 4, 5	Township/Borough NFIP FPA, as fully supported by local government officials	Medium - High	Low	Municipal budget	Short (year 1)	High	LPR

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC008	Assess and update emergency operations center equipment to improve communication. Targeted needs include repeaters to strengthening radio signals, providing base ration station and replacement portable radio batteries, and installing PEMARS radio antennae, as well as generators/ backup power in municipal buildings, police stations, and public works garages.	Existing	All	1, 5	County, PEMA	Medium	Medium	County budget, FEMA HMGP and PDM	Short	Low	EAP, SIP
BC009	Install back-up power at the following critical facilities in the Township/Borough: • Bridgewater Borough Municipal Building, Police Station, and Public Works Garage • Freedom Borough Municipal Building (includes Fire and Police) • Monaca Borough Fire Stations and Community Center (EOC and shelter) • Rochester Borough Fire Station and Public Works Garage • South Heights Borough EOC/Municipal Building/Police Department										
	See above.	Existing	Tornado and Windstorm, Winter Storm	1, 2, 4	Engineering and DPW	High (reduced interruption of critical facilities and services; life safety)	Medium - High	Local budget; Emergency Management grants as available	Short (DOF)	Low	SIP
BC010	Work with County and power companies to identify roads within the Township/Borough considered "critical;" these would be the first priority for clearing after an event involving downed power lines.	Existing	Tornado and Windstorm, Winter Storm, Flood, Utility Interruption	1, 2, 3	County, Municipal Public Works Departments; Local Power Companies	Medium	Medium	Local budget	Short	Medium	SIP

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC011	Upgrade the fire protection system to meet NFPA standards. Projects may include purchase of mobile booster pumps to increase pressure for fire protection.	Existing	Urban Fire	1, 4	Local Fire Departments, Municipality	Medium	Medium	Local budget; Emergency Management grants as available	Short	High	SIP
BC012	Promote reverse notification systems in high-hazard areas.	Existing	All	1, 2, 5	County and Municipality	Medium	Medium	Local budget; Emergency Management grants as available	Ongoing	Low	EAP
BC013	Identify and monitor transportation routes of hazardous materials. Implement safety projects where applicable. Targeted areas include: - Countywide: State Routes 18, 51, and 65 - Freedom Borough: State Route 65 ramps and East Rochester Overpass - Monaca Borough: Emergency Boat Dock access to Ohio River - Rochester Borough: Water Street next to train tracks, Railroad Street, and Beaver River Blvd.										
	See above.	Existing	Environmental Hazards	1, 3, 5	County, Municipality, PennDOT	High	High	Local budget; Emergency Management grants as available	Short	Low	SIP
BC014	Work with County to implement transportation upgrades to roads with high flooding vulnerability. Projects could include culvert enhancement, culvert replacement, and road elevation. Targeted roads include: - Countywide: State Routes 18 and 65 - City of Aliquippa: Baker Street, Franklin Avenue, and Prince Street retention ponds - Ambridge Borough: Route 65, 4th Street, and the intersection of 19th Street and Duss Avenue - Freedom Borough: 8th Street - Hammony Township: Duss Avenue, Legionville Road, 8th Street Extension, and Valley Road - South Beaver Township: Swamp Poodle Bridge Site, Township Recreation Park, and McClain Road area - South Heights: Route 51 through South Heights										
	See above.	Existing	Flood	1	County, Municipality, PennDOT	High	High	Local budget; Emergency Management grants as available	Short	Low	SIP

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC015	Improve the design, routing, and traffic control functions on high-risk roadways. Targeted roads include: - State Route 68 9th Street - Harvey Run - Crawford Street	Existing	Flood, Environmental Hazards, Landslide, Transportation Accidents	1	County, Municipality, PennDOT	High	High	Local budget; Emergency Management grants as available	Short	Low	SIP
BC016	Implement debris-flow projects, including slope stabilization, energy dissipation, or vegetative plantings. Targeted roads include: - State Route 68 - North Street Storm Sewer Drainage - Hill Road - Route 151 at Route 51	Existing	Landslide, Earthquake	1	County, Municipality, PennDOT	High	High	Local budget; Emergency Management grants as available	Short	Low	SIP, NSP
BC017	Implement stormwater management projects to facilitate stormwater flow during severe storms. Targeted needs include: - Countywide stormwater runoff survey - Mitigate the storm drain on Route 51 before the Bridge Street Exit in Bridgewater Borough (this drain clogs frequently, causing at least one lane northbound to be under at least 1 foot of water). - Rehabilitate Dutch Men's Run (Freedom Borough) - Mitigate the downtown area of South Heights Borough, including Crawford Street, Hill Road, and Fourth Street Creek.										
	See above.	Existing	Flood	1, 3	County, Municipality, PennDOT	High	High	Local budget; Emergency Management grants as available	Short	Low	SIP, NSP

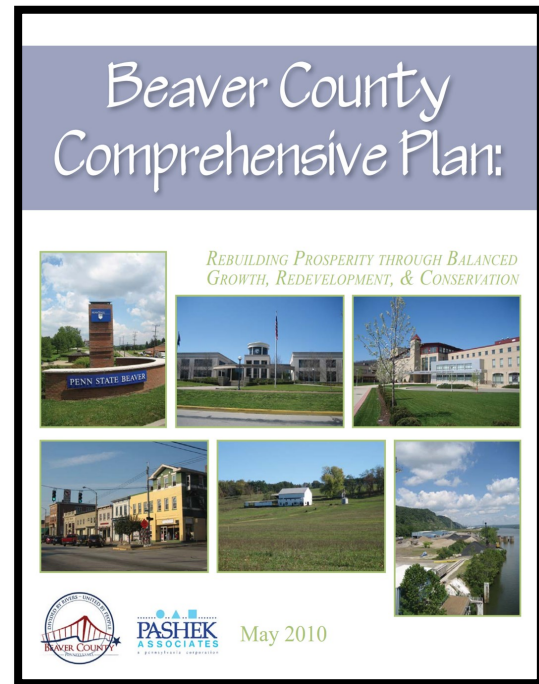
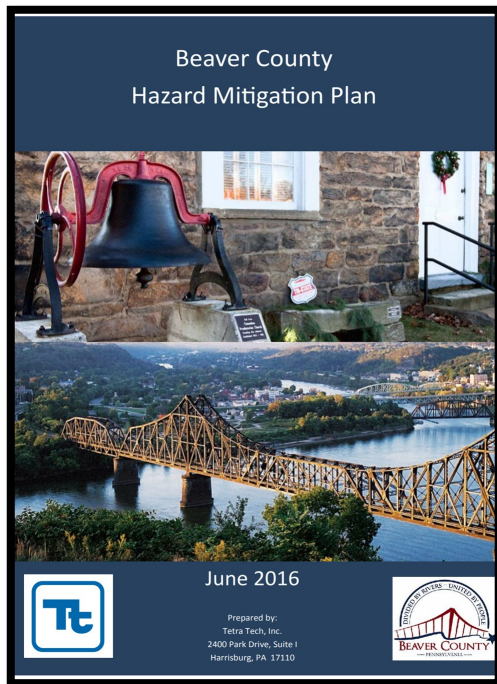
Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC018	Beaver County will work with municipalities to collect or update information on the number and location of all repetitive loss properties to plan future mitigation actions.	Existing	Flood	1, 2, 3	County, Municipality, PEMA	Medium	Low	Local budget	Ongoing	Low	EAP
BC019	Continue to use and improve GIS capability to identify and prioritize hazards and critical infrastructure for mitigation. This action has two focuses: - As funding becomes available, collect and/or support the collection of first-floor elevations for all severe repetitive loss properties in Beaver County. Additionally, ensure that the geographic coordinates (latitude and longitude) of each property is confirmed. - Create a new development mapping layer so that the County can run mapping contrasts of targeted growth areas and hazard areas.										
	See above.	New and Existing	All	1, 3, 5	County Planning, County Emergency Services	High	Medium	Local budget; Emergency Management grants as available	Ongoing	Medium	EAP
BC020	Identify insurable County and municipal-owned, flood-prone buildings and infrastructure, and take appropriate mitigation methods if located in a SFHA. Continually monitor and update, as necessary.	Existing	Flood	1, 3, 5	County, Municipality	Low	Medium	Local budget; Emergency Management grants as available	Ongoing	Medium	LPR
BC021	Implement a building-hardening program for critical facilities and infrastructure to protect against terrorism.	New and Existing	Terrorism	1	County Sheriff's Office, Municipal Police Departments	Low	Medium	Federal Homeland Security Grants	Short	Low	SIP
BC022	Participate in emergency planning for applicable hazard and emergency response events. Specific types of planning relevant to the County and its municipalities include EAPs for dams, radiological emergency plans for nuclear incidents, winter preparedness plans, evacuation signage plans, Phase II Act 167 Stormwater Management Plan, and commodity flow studies. Additionally, other plans should be reviewed to ensure coordination with hazard mitigation planning techniques.										
	See above.	N/A	All	All	County Planning and OES, Municipalities	Medium	Low	County or local budget	Ongoing	Low	LPR
BC023	Municipalities will aggressively enforce building and safety codes for all buildings, including industrial uses.	New and Existing	All	1, 5	Municipal Code Enforcement	High	Low	County or local budget	Ongoing	Medium	LPR

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC024	Continue to map potential natural gas and petroleum transmission lines.	Existing	Environmental Hazard, Utility Interruption	1	County GIS, Utility Providers (Gas and Petroleum)	Medium	Medium	County, PEMA, FEMA	Short	Low	LPR
BC025	Planning Commission and applicable municipal offices will review their comprehensive plans to ensure that designated growth areas are not within high-hazard areas identified in this plan.	Existing	All	1, 2	County Planning, County OES, Municipal Managers	Medium	Low	Staff time, local budget	Ongoing	Low	LPR
BC026	Encourage all critical government facilities to have COOP and COG plans and to begin implementing appropriate backup systems.	Existing	All	1, 3	County Planning and OES, Municipal Emergency Managements	High	Low	Staff time, local budget	Ongoing	Low	LPR
BC027	Hold annual meetings to ensure that mitigation, planning, preparedness, and response personnel are (1) cross-trained in each other's area of expertise, (2) aware of ongoing activities, and (3) fostering increased communication.	N/A	All	All	County Planning and OES, Municipality	Medium	Low	Staff time, local budget	Ongoing	High	LPR
BC028	Reinstate the Beaver County CERT program to recruit and train interested citizens in Beaver County to assist first responders at specified emergencies throughout the County.	N/A	All	1	County Planning and OES, Municipality, Fire Departments	Medium	Medium	Local budget, PEMA, FEMA	Short	Low	EAP
BC029	Investigate the possibility of a county burn building to assist the training of volunteer fire departments.	New	Urban Fire and Explosions	1	County OES, Local Fire Departments	Medium	Medium	PEMA, FEMA, Assistance to Firefighters Grant	Short	Low	SIP

Initiative*	Mitigation Initiative	Applies to New and/or Existing Structures**	Hazard(s) Mitigated	Goals Met	Lead and Support Agencies	Estimated Benefits	Estimated Cost	Sources of Funding	Timeline	Priority***	Mitigation Category
BC030	Develop and maintain a comprehensive list of relevant regional agencies, including Council of Governments, River Basin Commissions, and MPOs.	N/A	All	2, 3, 4	County Planning and OES	Medium	Low	Local budget, staff time	Ongoing	Low	LPR
BC031	Establish all-hazard resource centers located in the County Courthouse, Chamber of Commerce, municipalities, local libraries, and senior centers. Centers will serve as repositories for information on local hazard identification, preparedness, and mitigation strategies for use by citizens, realtors, and lenders. Centers would display literature about the NFIP; FIRMs; books about mitigation for homeowners; and copies of "Are You Ready Guide," "Protecting Building Utilities from Flood Damage," and "Seeking Shelter from the Storm."										
	See above.	New	All	1, 5	County OES and Planning, Municipality	Medium	Medium	County budget, PEMA, FEMA emergency management grants	Short	Low	EAP
BC032	Applicable municipalities will communicate with property owners or renters within the 100-year floodplain regarding potential flood hazards. Letters may include the following information: local flood hazard, flood safety, flood insurance information, property protection measures, natural and beneficial functions of the local floodplain, a map of the local flood hazard area, information about hazard notification systems, floodplain development permit requirements, and substantial improvement/damage requirements.										
	See above.	New and Existing	Flood	1, 2, 5	Municipal FPA, County OES, County Planning	Medium	Low	Staff Time, Local budget	Ongoing	Medium	EAP
BC033	Remove blight/abandoned buildings, especially in Ambridge Borough and South Heights Borough.	Existing	Urban Fire, Environmental Hazards	1	County OES, Ambridge Borough, Fire Departments	Medium	High	Local budget, PEMA, FEMA	Short	Medium	SIP, NSP
BC034	Support equipment needs for local public works departments to ensure readiness for sudden onset hazard events.	N/A	Tornado and Windstorm, Flood, Winter Storm	1	County OES, Municipal Highway/Public Works	Medium	Medium	Local budget, PEMA, FEMA	Short	Low	SIP
BC035	Support residents and local businesses in testing properties for radon exposure.	Existing	Radon Exposure	1, 5	County OES, Municipality	Medium	Low	Staff Time	Ongoing	Low	LPR

Appendix B

Borough of Ambridge Map Resource Packet* Used During Workshop



*Gathered from the Beaver County Hazard Mitigation Plan (2016) & Comprehensive Plan (2010)

Figure 2-1. Beaver County Base Map

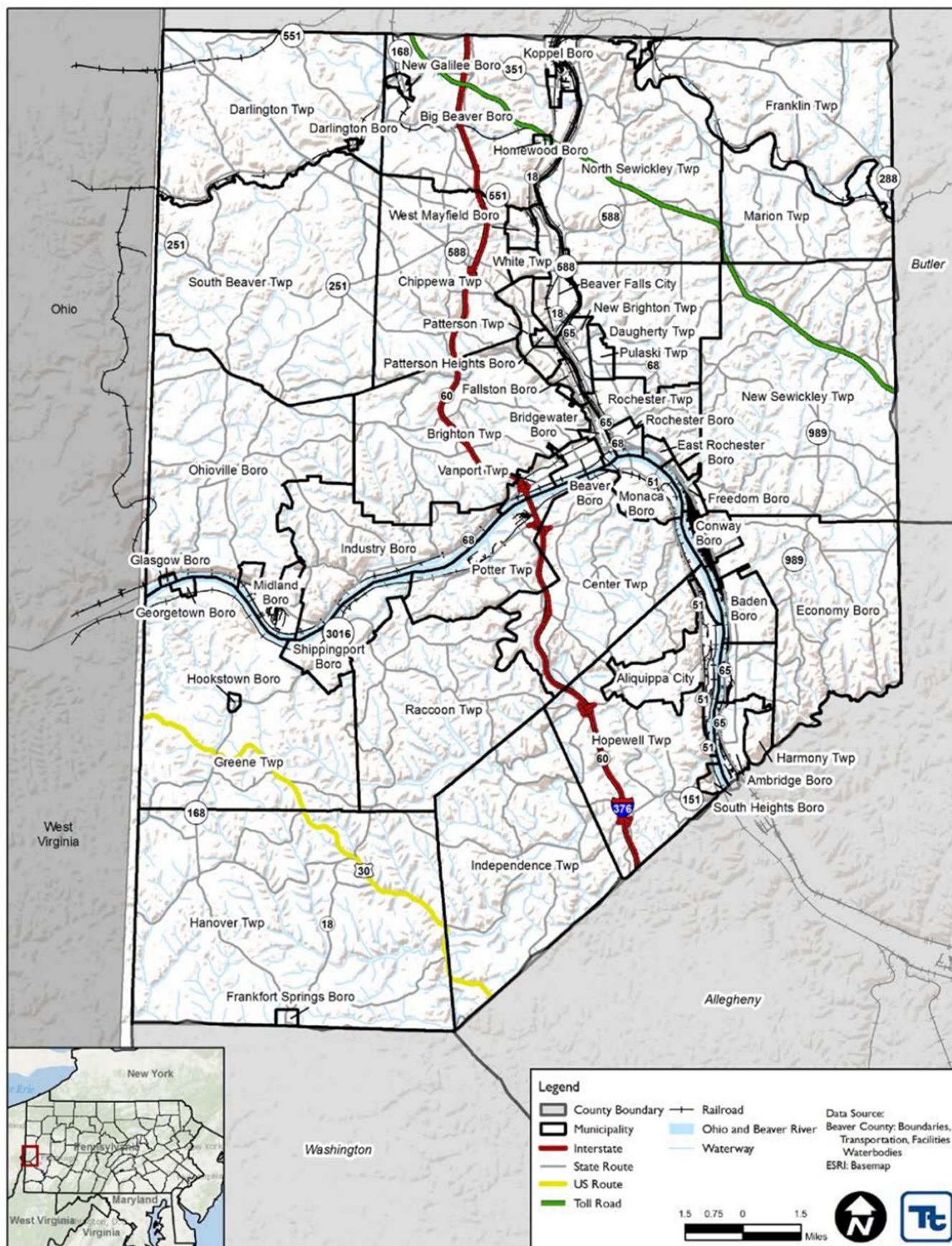


Figure 2-2. Beaver County 2010 Population Distribution

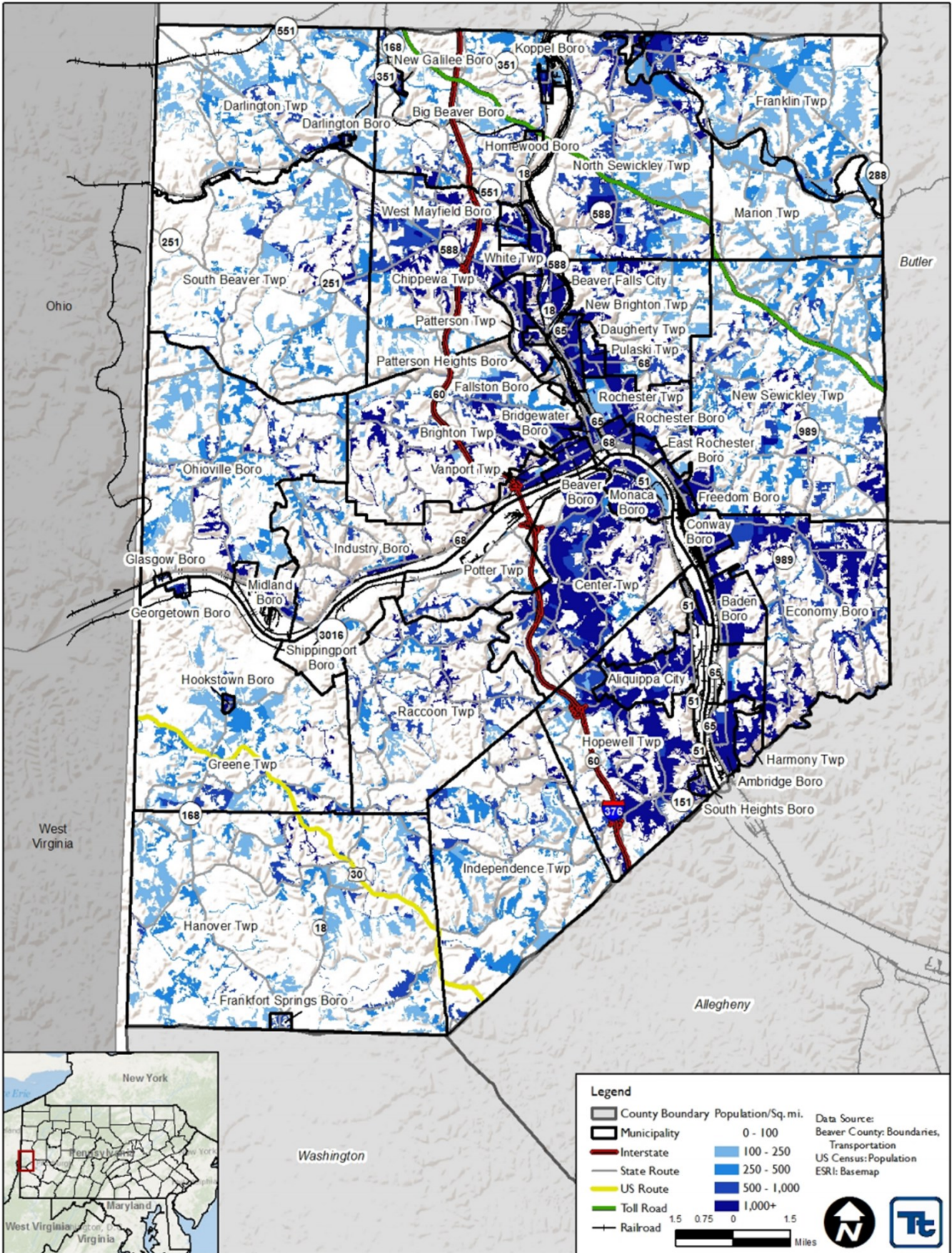


Figure 2-3. Beaver County Population Over 65 Years

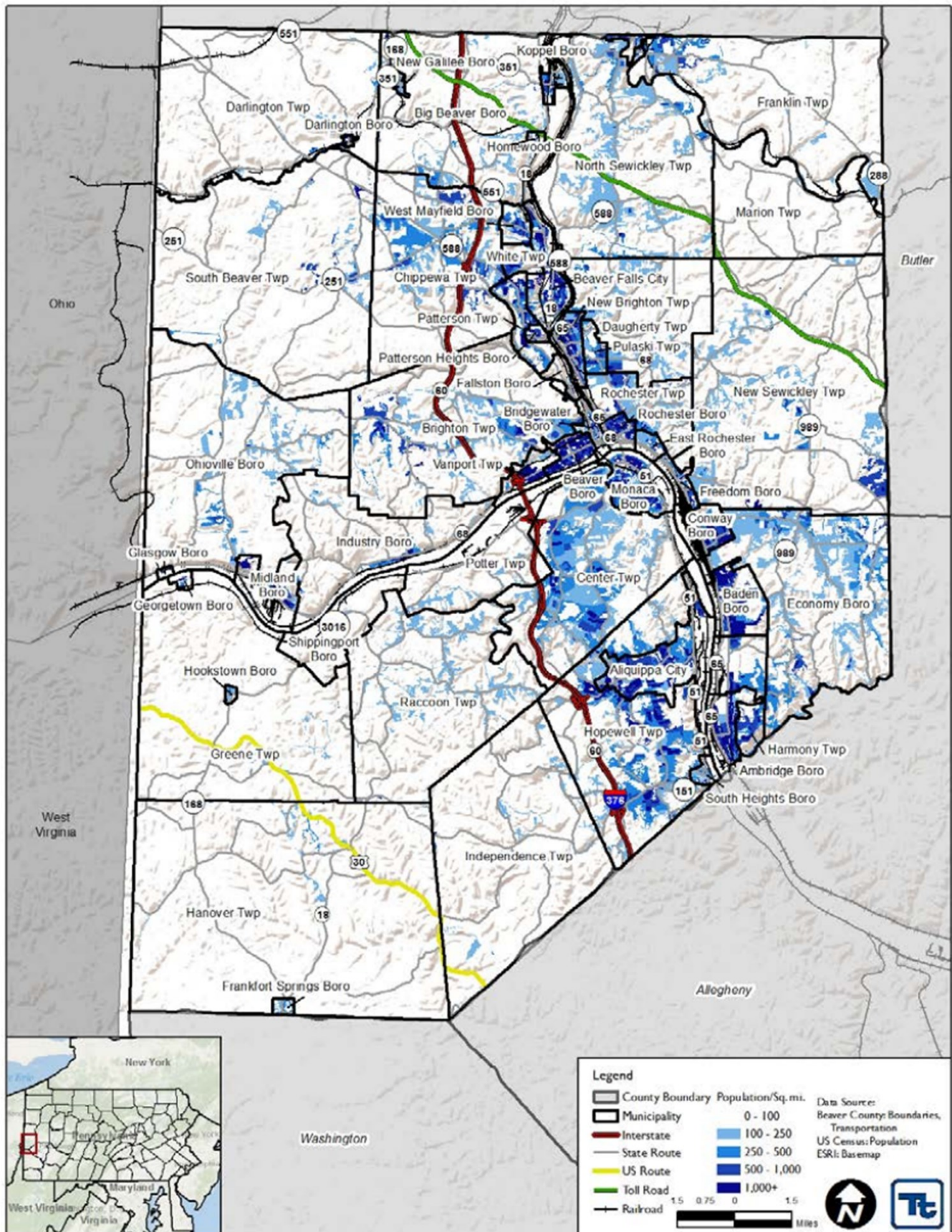
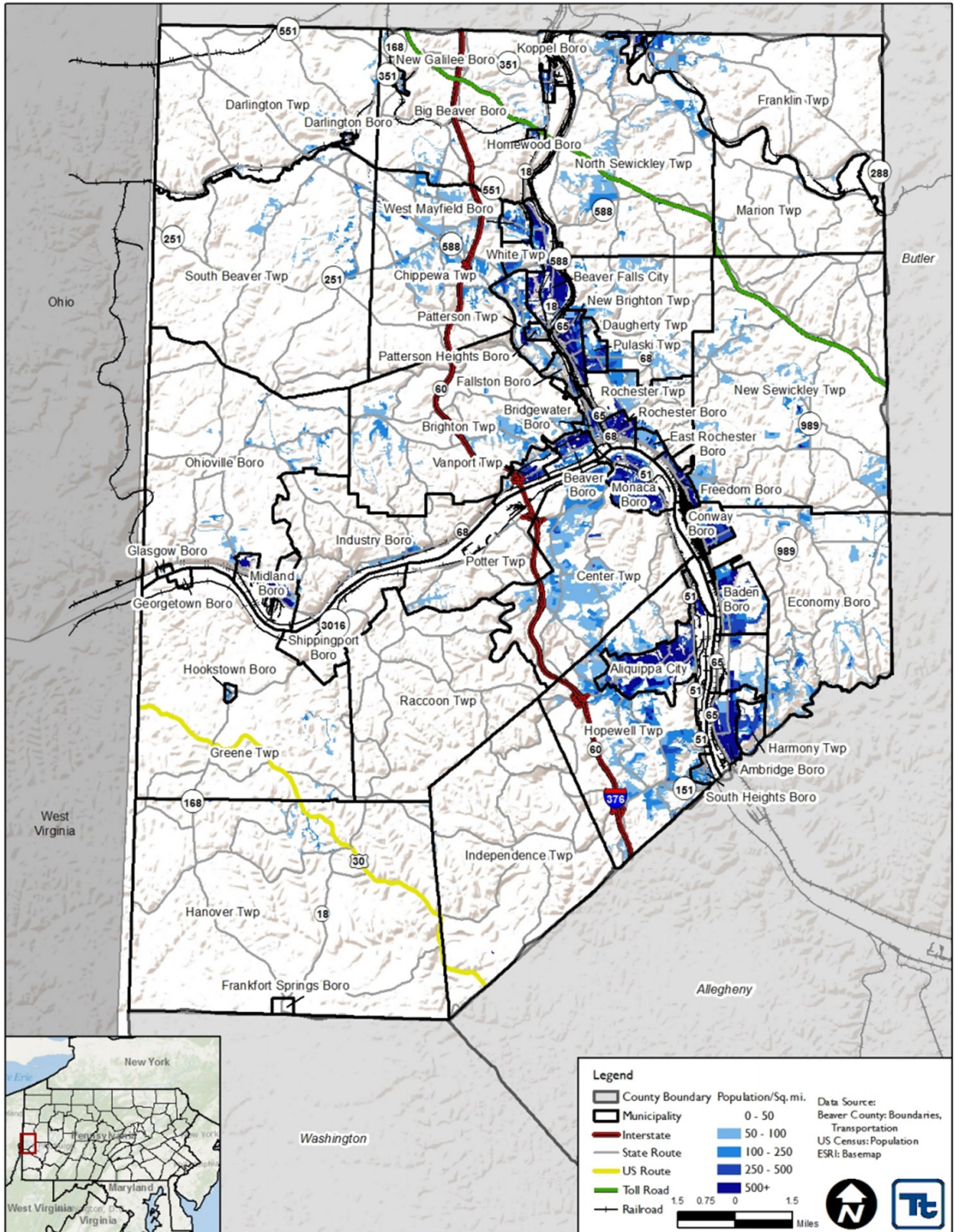
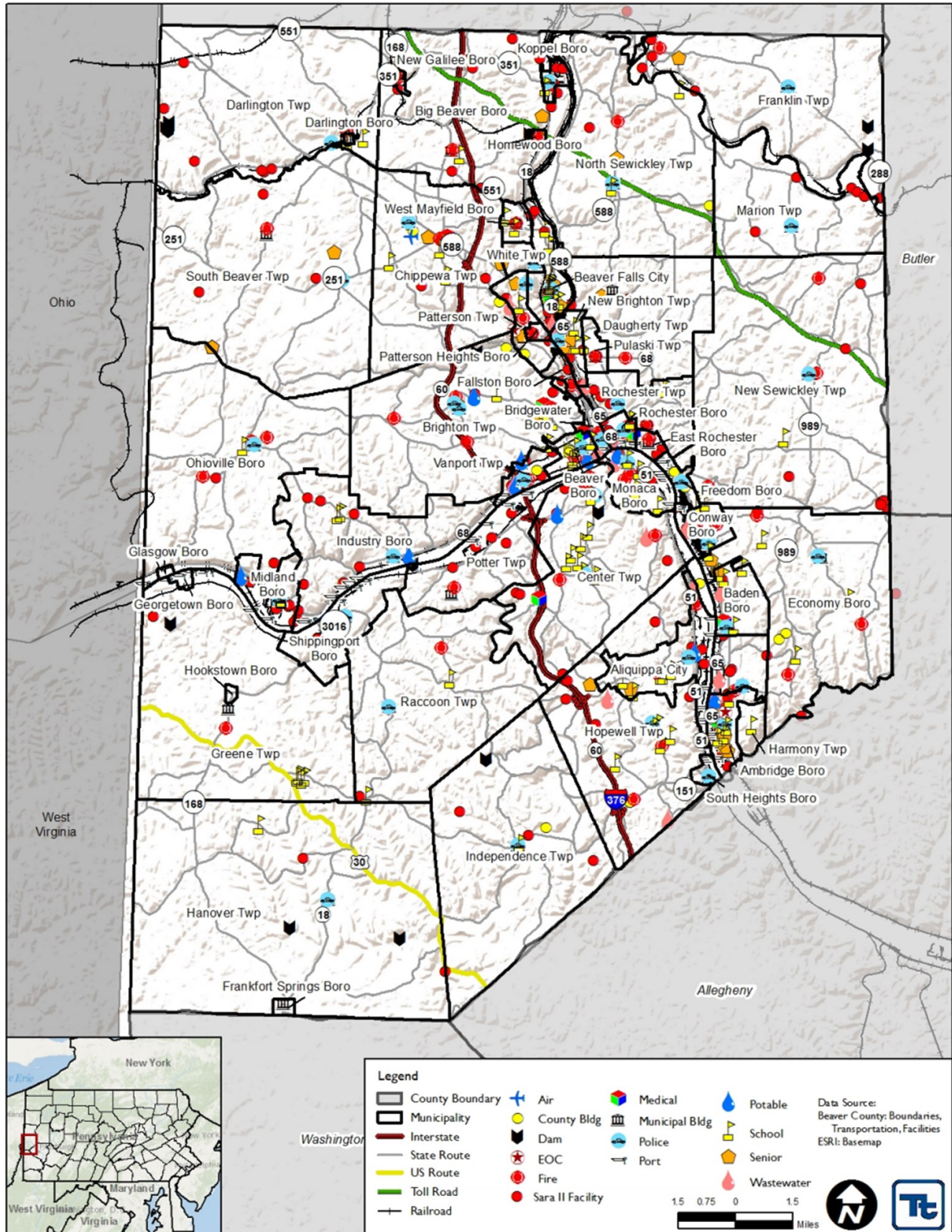


Figure 2-4. Beaver County Population Below the Poverty Level



Source: U.S. Census Bureau 2010; HAZUS-MH 3.0

Figure 2-6. Critical Facilities in Beaver County



Source: Beaver County

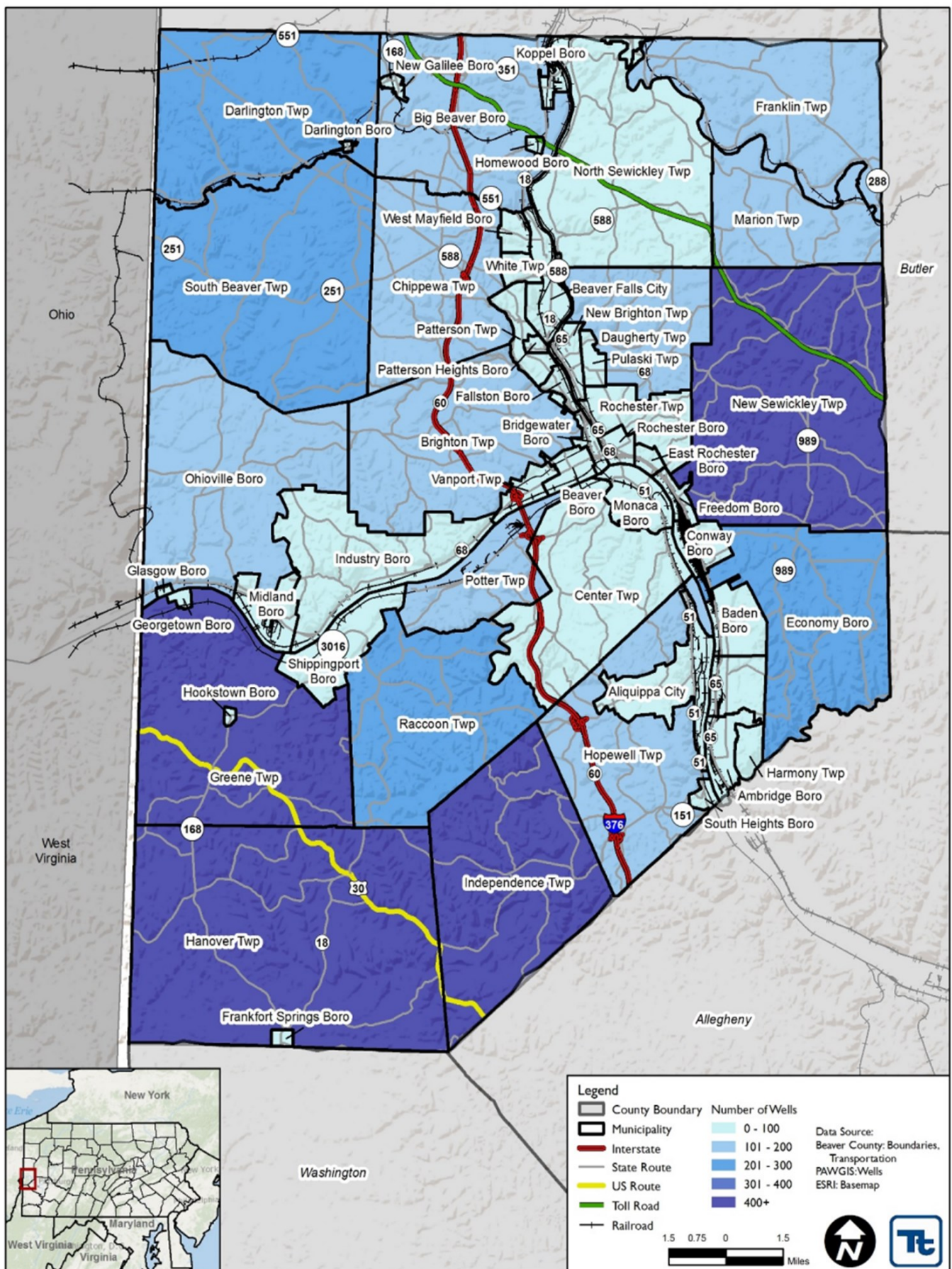
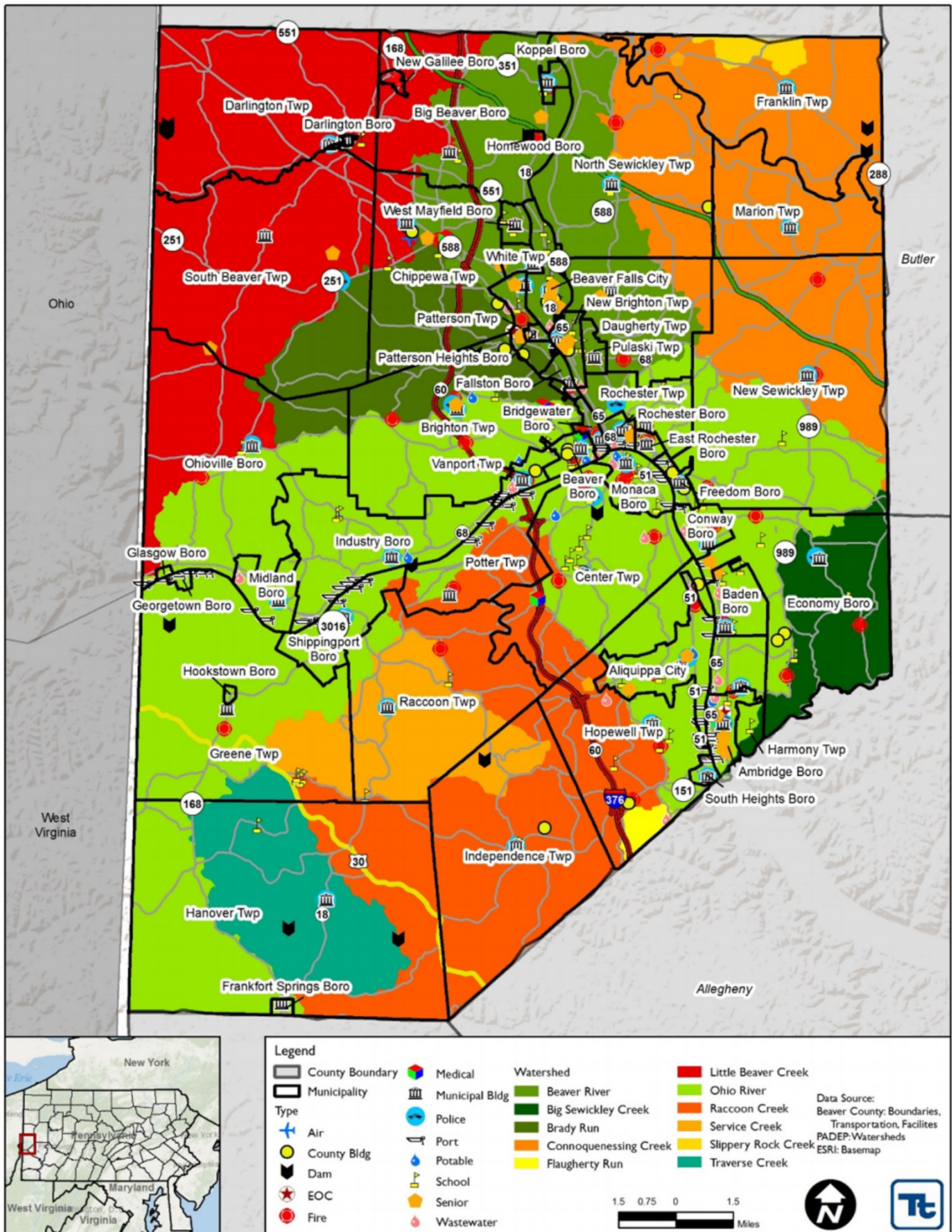
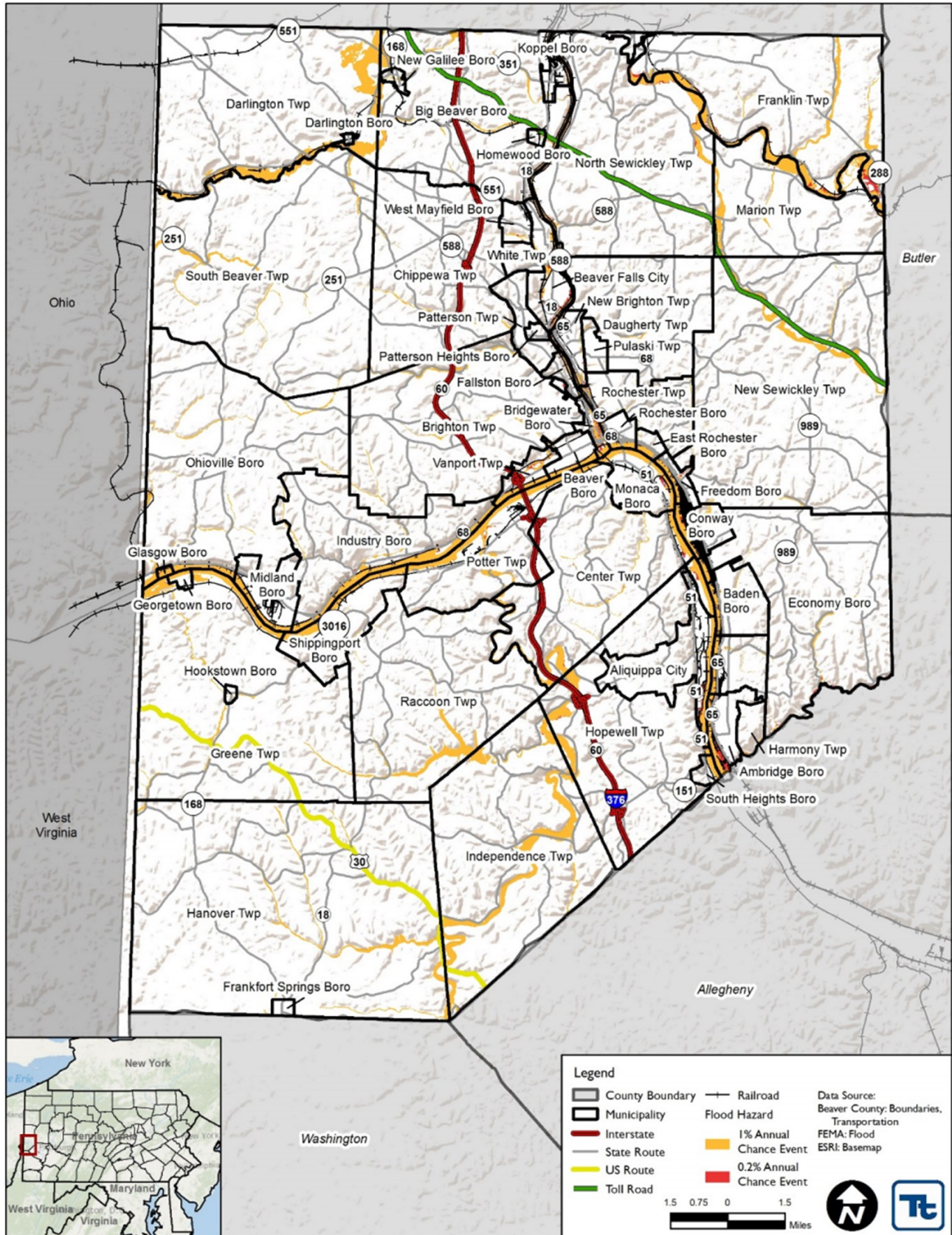


Figure 4.3.5-1. PADEP-Designated Watersheds with Critical Facilities



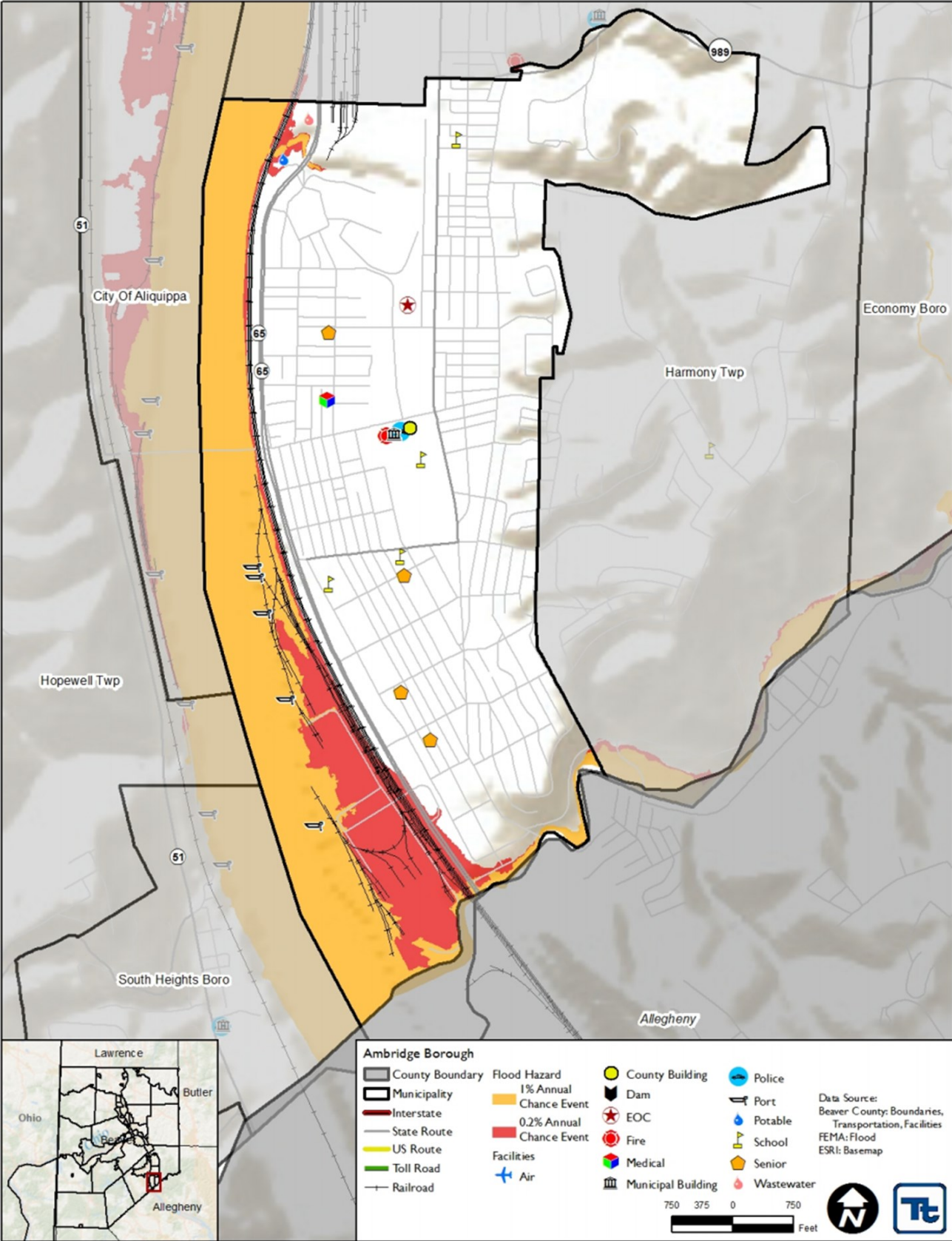
Source: PADEP, Beaver County

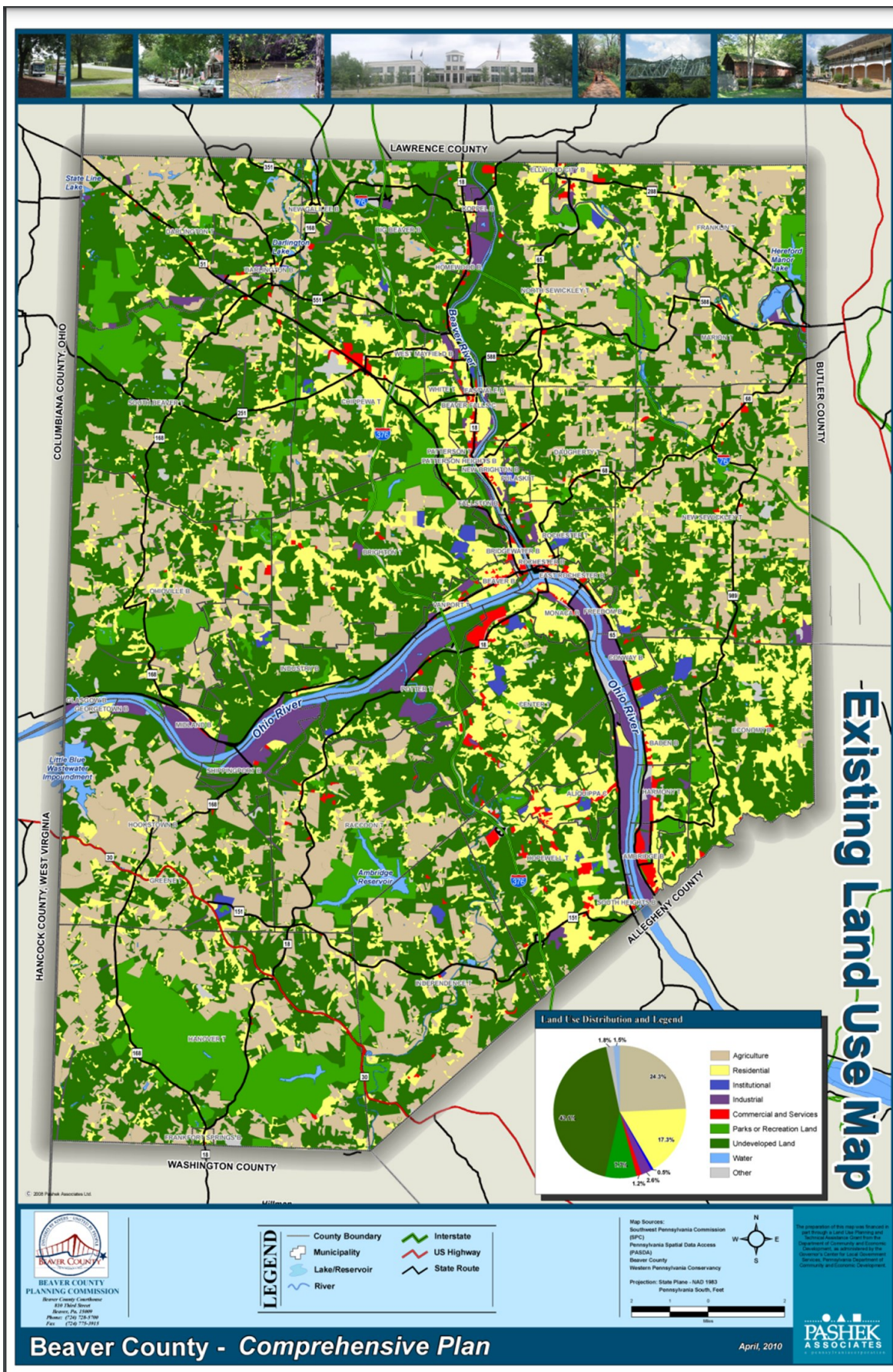
Figure 4.3.5-3. NFIP Floodplains in Beaver County



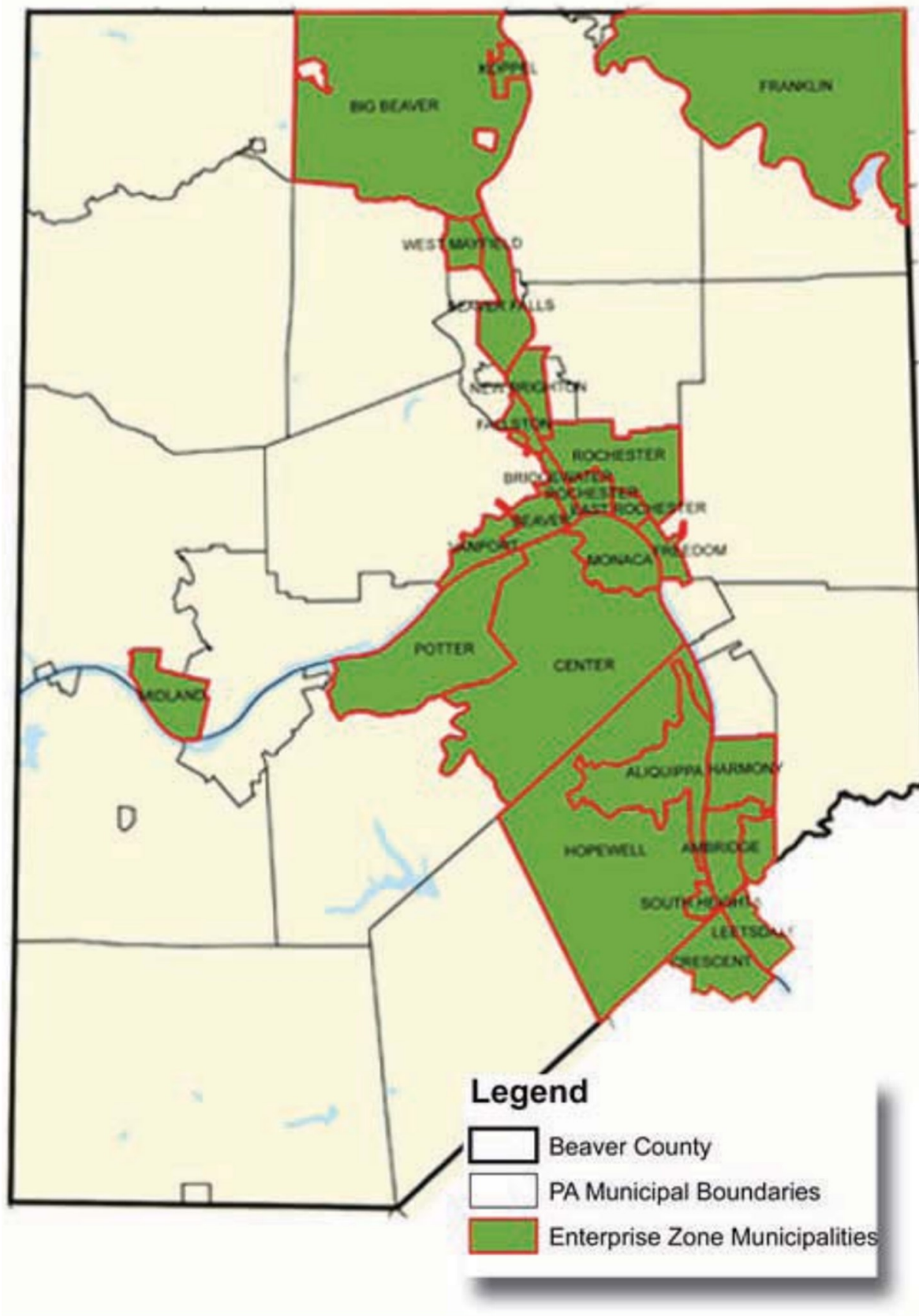
Source: FEMA 2015

Ambridge Borough

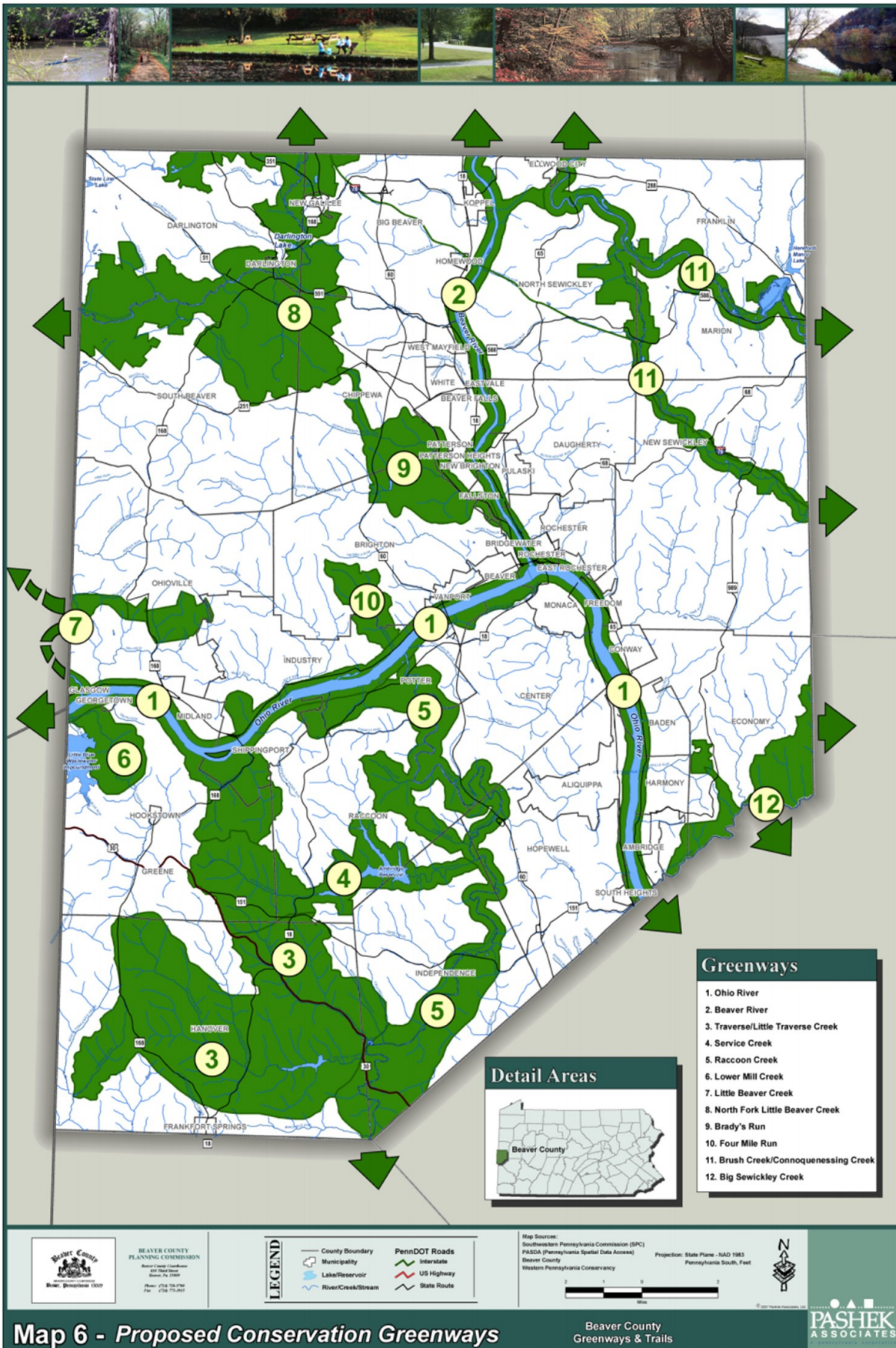


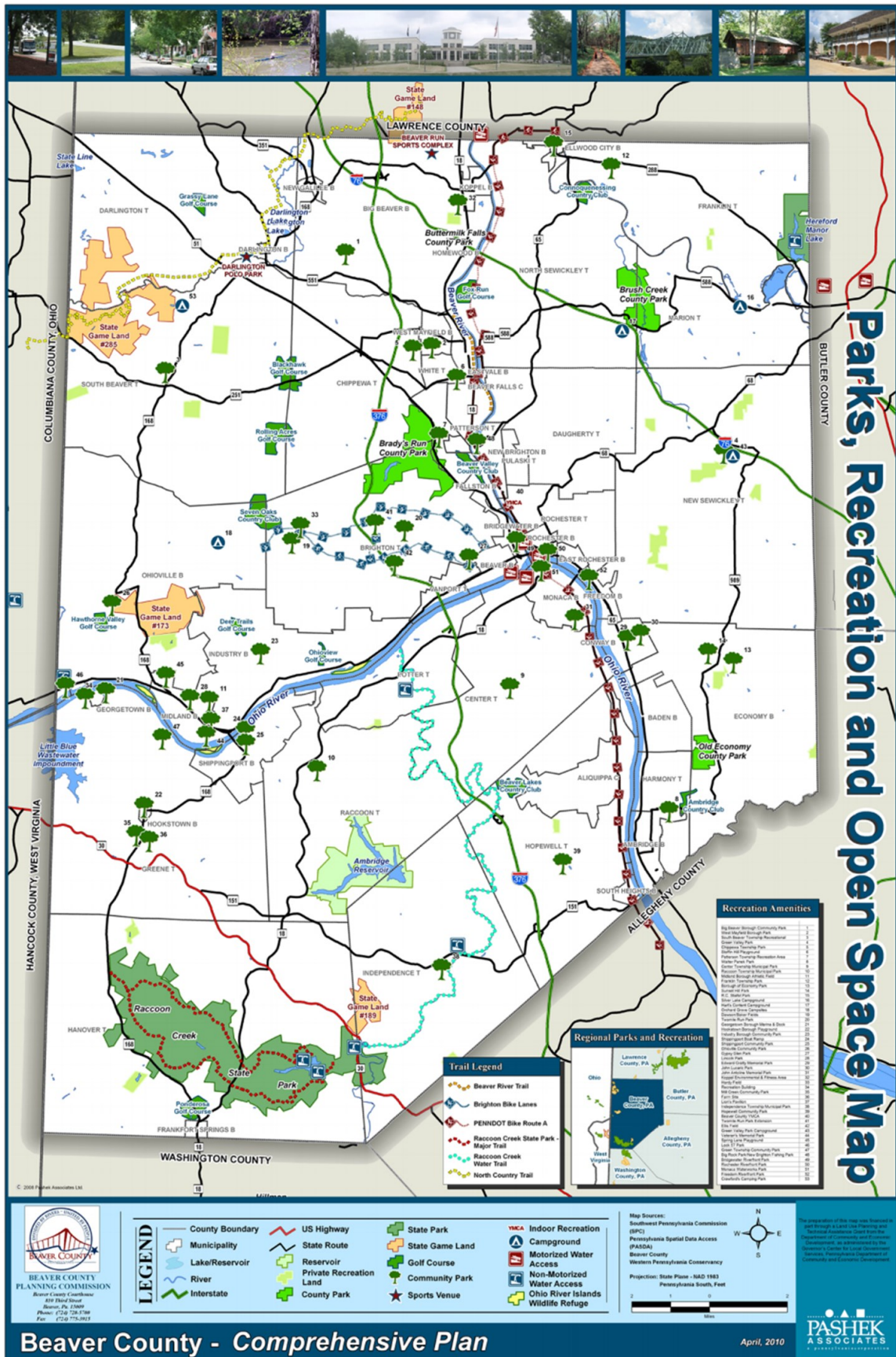


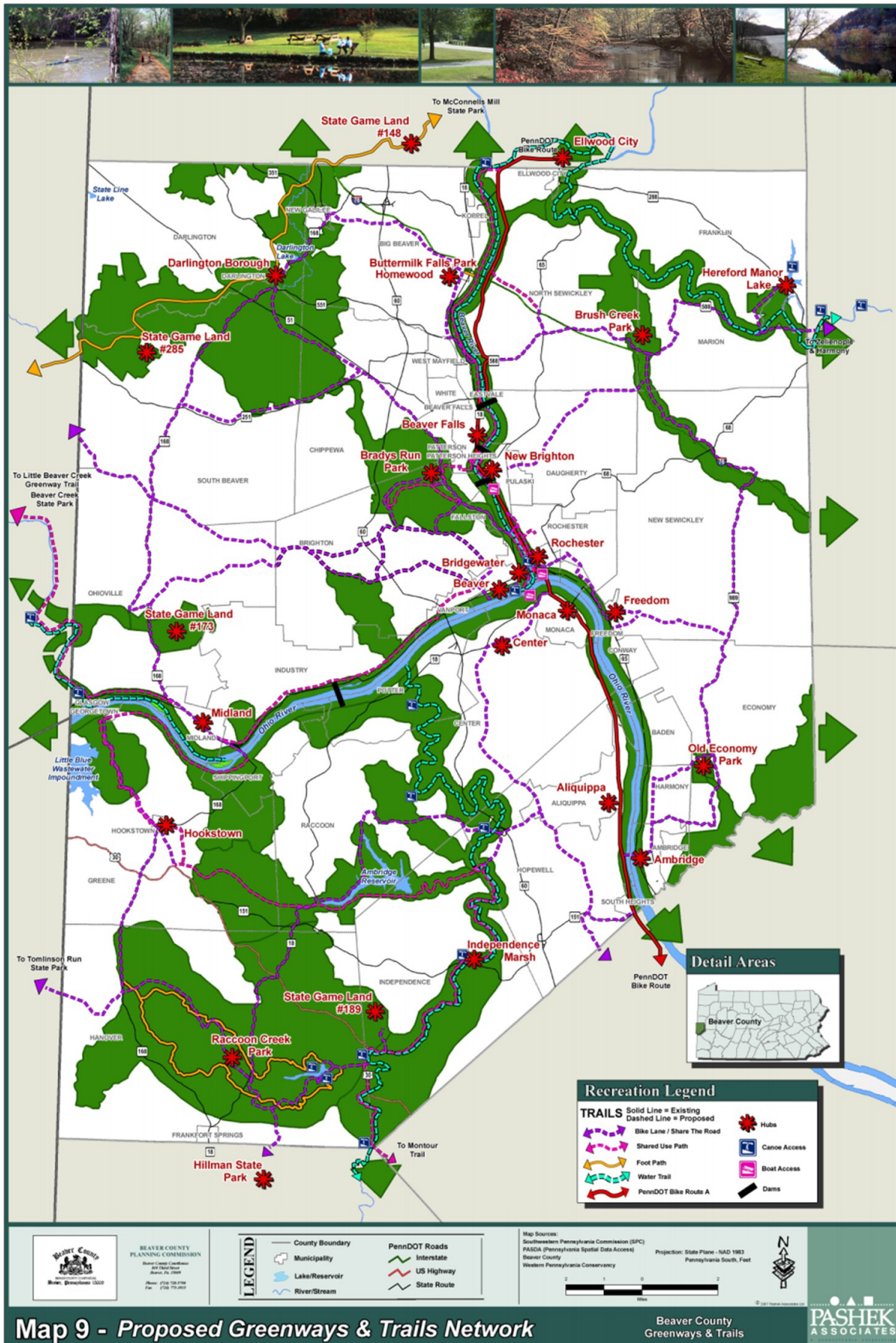
Beaver County Enterprise Zone

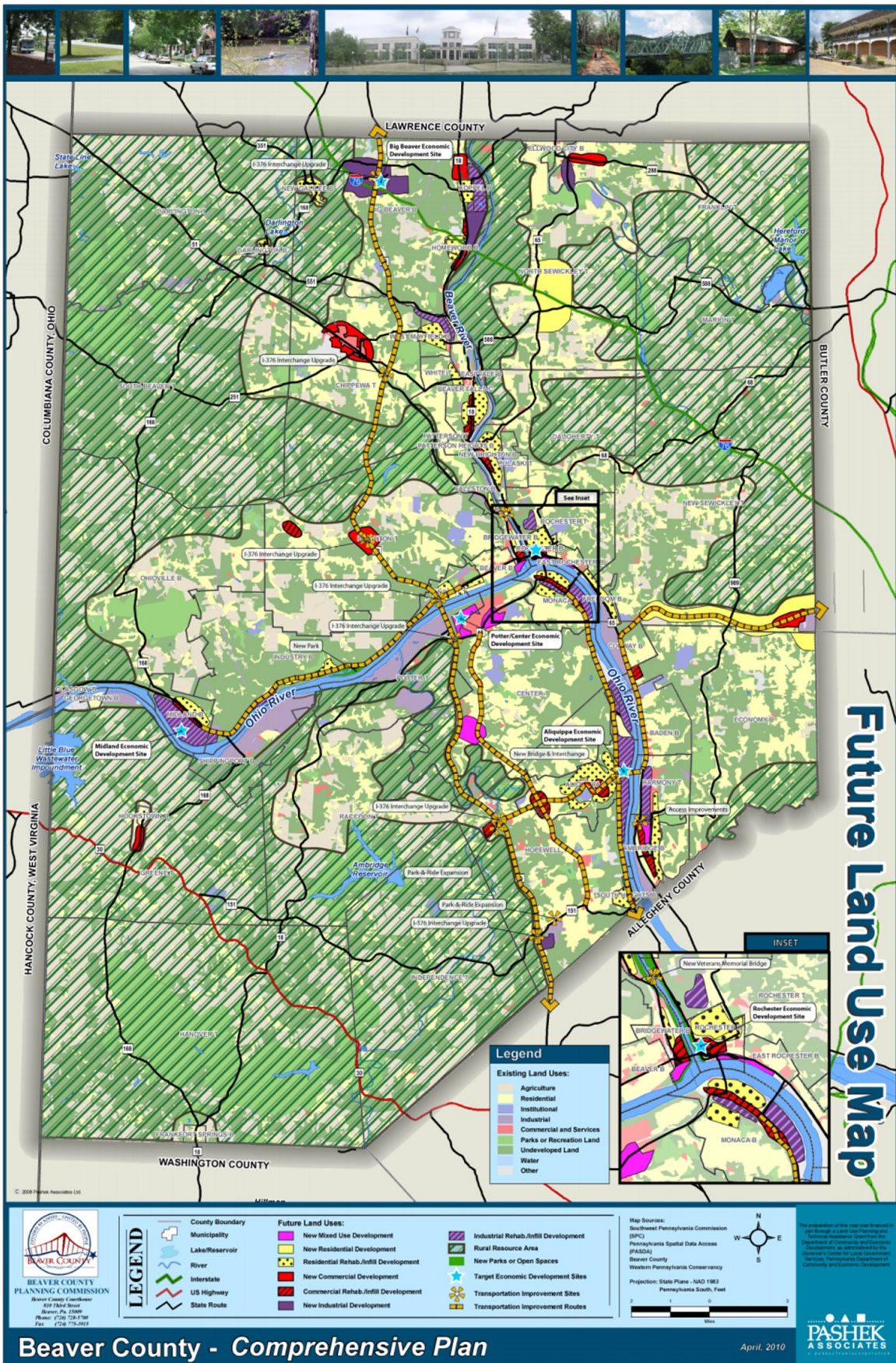












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