

Township of Ferguson Pennsylvania



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Community Resilience Building Workshop Summary of Findings

May 2021



Township of Ferguson, 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 Township of Ferguson 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 Pennsylvania, the Mid-Atlantic, and the Nation.

Recently, the Township of Ferguson embarked on a pilot program lead through a partnership between The Nature Conservancy, Pennsylvania Municipal League, Sustainable Pittsburgh, and Sustainable Pennsylvania. At the pilot program's core, this partnership provided the Township with a voluntary process to conduct an assessment of climate change impacts and develop and prioritize solutions. In April 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 Township of Ferguson.

The Township of Ferguson 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 Township;
- Identify opportunities to collaboratively advance actions to increase resilience

The Township of Ferguson 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 Township of Ferguson. The Centre County Hazard Mitigation Plan (2015) and The Centre Region Comprehensive Plan 2013) 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 Township of Ferguson 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 Township of Ferguson Core Project Team identified the top hazards for the Township and region. The hazards of greatest concern included extreme winter storms (ice, snow), severe wind storms, droughts, and flash flooding from heavy precipitation events. 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 Township’s infrastructure, residents, and environment including neighborhoods, natural areas (rivers, wetlands, parks, forests), roads, bridges, drainage systems, drinking water, farms, 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

- Extreme Winter Storms (Ice & Snow)
- Severe Wind Storms
- Droughts & Heat Waves
- Flash Flooding & Heavy Rain Events

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

Infrastructure: 342 Domestic Drinking Water Wells, Development Pressure within Growth Boundary, Groundwater and Drinking Well Systems, Food Banks, 8 Major Re-charge Areas, Workforce/Affordable Housing, Stormwater Management Systems, Sink Holes, Electrical Power Grid, Communications Systems, Businesses, Farms.

Ecosystems/Parks/Open Space: Spring Creek (headwater of Chesapeake Bay), Spotted Lantern Fly, Urban Tree Canopy, Water Quality Contamination - Groundwater, Agricultural Lands and Crops, Vernal Pools, Forest/Woodlands (Private & State), Grasslands, Slab Cabin Run, Spruce Creek, Ridgelines.

Roads, Bridges, and Road Network: Limited Road Network in Western Township, Several Low Lying Roads and Bridges.

Vulnerable Populations: Elderly, ALICE (Asset Limited, Income Constrained, Employed (United Way)) People, Low/Moderate Income Residents, Homeless Population, College Students, Agricultural Community, Business Owners, Non-English Speakers.

*Information from workshop participants augmented via review of the Centre County HMP (2015) and The Centre Region Comprehensive Plan (2013). **See Appendix A for list of mitigation/adaptation actions from the Township of Ferguson and Appendix B for map resources from both of these documents..**

Current Concerns and Challenges Presented by Hazards

The Township of Ferguson has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, the Township of Ferguson 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 Township of Ferguson. 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 Township of Ferguson 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 Township of Ferguson.

The workshop participants were generally in agreement that the Township of Ferguson 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: twp.ferguson.pa.us)



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Specific Categories of Concerns and Challenges

As in any community, the Township of Ferguson 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:

- Select low-lying roads and intersections in proximity to flood-prone rivers, creeks, streams, and wetlands subjected to flooding and erosion.
- Road network and associated stormwater drainage system inadequate in certain locations.
- Limited road network in western portions of Township can cause access and egress issues resulting in isolation of residents – particularly elderly during winter storms.

Stormwater Management:

- Limited number of installed green stormwater infrastructure to help naturally reduce runoff.
- 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.

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.
- Increasingly intense and more frequent flash flooding events that impact people, property, and the ecological systems despite the long history of thoughtful land use decisions and regulations related to flooding.
- Over dependence on personal automobile to access goods and services within and beyond Township creates concern during power outages that close fuel pumps at gas stations.
- Concerns raised with securing cooperation and guidance from state entities in a timely and actionable manner with recent examples occurring during the pandemic.
- Limited signage regarding dangers of using roads during severe winter storms (e.g. accident on I-80 during winter white out).
- Aging electrical grid presents potential issues during response and recovery.
- Communicating plans and emergency communications not reaching everyone due to language and cultural barriers (e.g. 15% the student population is of Asian descent).

Specific Categories of Concerns and Challenges (cont'd)

Infrastructure Concerns and Challenges (cont'd)

Housing:

- Ongoing concerns about the displacement of older generation and lower income residents from the Township and replacement of older homes with new, more expensive housing that is not affordable for younger families and young professionals which results in an aging demographic.

Societal Concerns and Challenges

Vulnerable Populations:

- Implications to disproportionately disadvantaged populations (i.e. elderly, working poor, low income residents) from winter storms and heatwaves.
- Estimated 45% of County population vulnerable to displacement from natural disasters (i.e. ALICE – Asset Limited, Income Constrained, Employed (United Way)).
- Continued concerns about access and supply of food for low-income residents across the County amongst the various food banks including State College and YMCA.
- Agricultural community will experience impacts due to climate change particularly on dairy and chicken farms with a need to shift or adapt crops based on fluctuating environmental conditions – which may require a need for more flexible land use codes, ordinances, and enforcement.
- Need for more multi-lingual resources to ensure a broader suite of residents are reached and informed on community activities and preparedness resources.
- Concentration of flash flooding events in low lying areas occupied by more affordable, less expensive homes.

Businesses:

- Business community is vulnerable to natural disasters and major events.
- Dependence on a strong agricultural community as the major industry within the Township presents a concern as the threats to farming from a changing climate become more significant (i.e. heat, drought, flooding, precipitation, pests and pathogens, etc.).

Community Services:

- Limited options for public transportation via bus line or rail.
- Gaining access to medical services such as dialysis in the Township is challenging during natural disasters and weather events – particularly during the winter months.

Specific Categories of Concerns and Challenges (cont'd)

Societal Concerns and Challenges (cont'd)

Development:

- Future changes in drinking water availability from the aquifer due to climate change (i.e. heat and drought) coupled with shifts in population density and distribution across the County. Approximately 119 drinking water wells will be affected by drought in near future.
- Ongoing potential for failure of sand mounds and septic which could impact water quality.
- Reluctance by residents to expand sewer service area due to the cost.
- Private drinking water supply companies that are currently not conducting routine maintenance of water well and supply system area is a threat to long-term water security in the Township and County.
- Struggle between land use and services needs of older, more-established residents versus newly settled arrivals which may threaten perceptions of community character and sense of place (i.e. urban-rural distinctions).

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.
- Oak Wilt (pathogen) will impact the urban tree canopy.

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, brooks, and wetland systems experiencing issues, currently.
- Recent influx of pests and pathogens that have impacts on homeowners and the agricultural community (i.e. spotted lantern fly).



(Credit: Township of Ferguson)

Current Strengths and Assets

Just as certain locations, assets, and populations in the Township of Ferguson stand out as particularly vulnerable to the effects of hazards and climate change, other features are notably assets for the Township of Ferguson's 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, and residents is a very appreciated strength within and across the Township of Ferguson. 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 Township has highly experienced staff with access to adequate resources for most emergency situations. The coordination amongst various departments including leadership, Public Works, Police, Fire, and Emergency Management within the Township and across the Region and County was cited as a highly valued community strength.
- The relatively high amount of agricultural and natural lands in the Township of Ferguson coupled with a relatively, low-density populations increases quality of life for residents.
- Residents for the most part are often well prepared and able to shelter in place during major weather events (ex. volunteer clean-up after recent flash floods).
- The existing road network is well maintained and accessible even during winter ice and snow events.
- Proximity to a large university with a wealth of expertise and educational capital amongst staff, faculty, and the student population.
- Strong sense of community with many significant partnerships and MOUs in place for response and recovery to major events (i.e. social capital).
- Robust and engaged Planning Department that carefully reviews new development proposals to ensure resiliency is incorporated (i.e. onsite stormwater management for future, more intense precipitation events).
- Newly constructed Public Works Facility that will be LEED Gold certified.

Current Strengths and Assets (cont'd)

- The Township is increasingly preparing for climate change given the concern about current impacts from hazards and the threat of escalation - particularly from storms, flash flooding, drought, and wind.
- A generous community comprised of residents that are willing to contribute time to make the Township of Ferguson a more resilient and sustainable place.
- Small intensive transit community with higher usage of public transportation and 100% compressed natural gas resulting in a relatively lower carbon footprint.
- Rich and diverse environmental/natural resource capital with development centralized in one location with some sprawl and large amounts of open space which help to buffer against hazards.
- Long track record of supportive and coordinated responses amongst public works, law enforcement, and emergency management within the Township and across the Centre Region and with Penn State.
- Police Department is well equipped to respond in most circumstances with highly experienced staff in coordination with other responders as well as the utility companies (West Penn, Penn Electric) when power lines go down during storms.
- Strong and responsive zoning, subdivision, and ordinances that protect natural areas (ridges, forests, trees, wetlands, etc.) and help reduce impacts of flash flooding and stormwater runoff on private and public property, for the most part.
- Township positions over a large aquifer which does and will provide resilience to current and potentially future droughts.
- Relatively high level of economic stability amongst residents as well as the year-over-year operating expenses and budget of the Township.
- Regional to local cooperation on land use planning that is focused on improving livability, mobility, sustainability, and equity across the Township and Centre Region.
- Land use planning that currently is finding a balance between preserving agricultural and natural lands and economic and development growth within a growth boundary.
- Progressive building codes that allow for the maintenance of a high level of safety in structures which helps reduce the need for responses from Fire Department.

Current Strengths and Assets (cont'd)

- Robust and well distributed tree canopy with emphasis on increasing over time via required planting associated with development, management of state forests within the Township, and planting of trees on open spaces and working lands.
- Stormwater management fee that helps to provide funding for infrastructure maintenance and upgrades.
- Strong active volunteer network within the Township populated by well-educated, non-transient, passionate, and economically secure residents that tackle important current issues (i.e. Climate Action Committee, stream water quality monitoring, among others).
- Transparent and responsive leadership that is always focused on improving the services for and condition of residents – in partnership with regional/county leadership and resources.
- Agricultural community viewed as a strength within the Township with the largest number of agricultural easements in the County (3,000 acres approximately).
- Integrated sewer and water services in new development which helps to streamline process across municipalities within the growth boundary.
- Park Hill drainage way project (\$1.3M project) will provide a model for how to reduce erosion in drainage ways in advance of 100-year storms by mimicking a natural water course with some additional engineering features (i.e. green stormwater infrastructure).
- Ongoing renovations to elementary school emphasize the importance of education in the Township.
- Inclusion of green stormwater infrastructure and management polices in maintenance of parks in Township.
- PennDOT improved Atherton Street corridor to help mitigate flash floods.
- Large amount of open space results in lower infrastructure density and more diffuse impacts to infrastructure (i.e. roads, culverts, etc.).
- Concerted effort by Township and residents to look forward and plan for a more diverse source of different energy sources (i.e solar, geothermal, etc.).
- Outreach by Fire and Police Departments to vulnerable populations before, during, and after major events.

Current Strengths and Assets (cont'd)

- Diverse array of communication techniques and outlets (i.e. social media – twitter, Instagram, newsletters, websites, school system, etc.) due to lessons learned during pandemic.
- Low impact development with green stormwater infrastructure at Haymarket Park provides model for future projects that help to increase resilience in the Township, County, and Region.



(Credit: Township of Ferguson)

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 reduce the Township of Ferguson'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. land use balance, future development, agriculture, transportation, diverse demographics, housing, volunteerism);
- **Infrastructure improvements** (i.e. drinking water supply system, stormwater management systems, electrical power grid, road/bridge network, GIS);
- **Quality of life improvements** (i.e. tree management, mobility, sustainability, green infrastructure, food security, water quality, health equity);
- **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 Centre County HMP (2015) are provided in Appendix A for cross reference. In addition, actions previously identified in The Centre Regional Comprehensive Plan (2013) were reviewed for consistency with input from workshop participants.

Priority Actions

- Develop a comprehensive communications plans to help improve outreach and messaging regarding the impacts of climate change for a variety of different audiences including homeowners, students, emergency management professional, and agricultural community, among others.
- Continue to diversify housing stock by incentivizing affordable, new development that also integrates sustainability and energy efficiency.
- Create communications materials that are both culturally and linguistically appropriate and look to organize shared translation and interpretation services between Township(s) and regional agencies and entities.

Priority Actions (cont'd)

- Seek out ways to increase the overall preparedness of residents at the household level in order to help reduce the potential impacts of delayed response times and resource availability during major events (i.e. family emergency preparedness plans, shelter in place).
- Support efforts by local farms to diversify businesses through crop diversification and the expansion of agribusiness and tourism (i.e. farm stands, bed and breakfasts inns, farmers' markets, breweries and distilleries).
- Work to better understand, identify, and catalogue vulnerable populations in the Township and help to increase their resilience by offering to weatherizing homes and provide financial assistance for food and fuel in coordination with established social services organizations.
- Partner with the State College Community Land Trust to explore opportunities to increase both affordability and sustainability of new development and/or redevelopment in the Township – particularly for young families and workers and not just student housing.
- Conduct public listening sessions to surface current barriers to volunteerism in the Township and look to establish a better system of defining interests of residents and linking those with opportunities in a flexible yet rewarding manner that accommodates family obligations.
- Secure partners at Penn State to collaborate on a desktop mapping system to be used as a tool to monitor future weather events and foreseeable short and long-term impacts on infrastructure such as roads and bridges as well as a predictive visualization tool to help with more efficient and effective deployment of resources, strategic planning, budgeting, and development on issues such as senior living, floodplain management, and vulnerable populations, among others.
- Conduct a comprehensive hydrologic assessment of all waterways in the Township to determine where opportunities exist to increase natural water storage in and adjoining floodplains through a process of additional open space acquisition and/or restoration of existing wetlands.
- 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.

Priority Actions (cont'd)

- Educate and encourage elected official to increase funding for infrastructure projects that build in resilience to help combat effects of climate change including more intense and longer duration rain, heat, and drought events.
- Continue discussions amongst municipal leadership and staff via the Climate Action Committee on setting an emissions reduction goal (net zero by 2050) and developing a strategic plan with actionable steps to achieve target.
- Look to further support the COGs efforts to function as a clearinghouse of climate-related information that is accurate and actionable for residents and emergency managers alike.

Other Actions

- Conduct outreach to home owners associations to help alleviate current restrictions such as not allowing solar installations in rooftops, vegetable garden or common garden, and use of cloth lines for drying. Examine ways to increase more sustainable and resilient activities via covenant plan review by the appropriate municipal department(s).
- Prioritize resources for households of first responders to help ensure their families are cared for so they can focus fully on recovery efforts.
- Continue to support direct links between local agricultural community and researchers/plant scientists at Rock Springs who are learning how to grow more heat resistant crops from southern states in Pennsylvania.
- Strengthening intergovernmental coordination with water and sewer authorities to allow for and fund installation of solar panels on private homes which may necessitate altering current codes and permitting requirements.
- Reexamine building codes and development requirements in hopes of finding ways to integrate more sustainable and resilient actions such as shade trees over parking lots, increased allowances for solar, limited parking requirements, among other low impact development practices.
- Strengthen connections with Penn State by offering students opportunities to carry out GIS projects for credit that gather useful data and perform analysis that otherwise would need to be contracted out by the Township.

Other Actions (cont'd)

- Explore actions to help better coordinate food security service efforts (i.e. Meals on Wheels, food pantries, etc.) between County and NGOs during and after emergencies and work to elevate the general understanding and awareness of the this critical issue amongst residents in the Township.
- Consider ways to increase alternative mobility of residents such as increasing the number of safe pedestrian and bike path routes from and amongst less densely populated areas of the Township and promote connectivity to adjoining municipalities.
- Consider benefits of securing interns from Penn State via the Municipal Internship Program to conduct various projects such as marketing/design students creating a video series for educational purposes in topics related to impacts of climate change to different audiences across the Township (first responders, residents, farmers, staff, etc.).
- Monitor actions taken to reduce impacts of extreme weather and climate change within adjoining municipalities and look to collaborate or replicate to increase regional effectiveness – particularly along shared watersheds and waterways.
- Continue to strengthen relationships between Township and agricultural community via Coffee & Conversation sessions on a regular basis throughout the year with a focus on identifying ways to further meet the needs of the community.
- Look to prevent via the work of the Tree Commission the loss of tree canopy as current trees age with proactive replacement.
- Explore options to establish an intentional program or curriculum for young students (primary and secondary schools) to help increase awareness on basic emergency management services and municipal functions (i.e. trash, social services, etc.) across the Township as a way to strengthen engagement of residents in the community.
- Where feasible, look to encourage less “auto-centric” development by reducing extent of cul-de-sacs and number of parking spaces and lots.
- Partner with local National Weather Service Office to earn the Storm Ready Community designation.

Other Actions (cont'd)

- Prepare for the arrival of American Rescue Act funding by pre-identifying projects related to emergency resilience building such as infrastructure improvements and increased broadband availability and access.
- Seek out ways to improve preventive medical care options for residents as well as strengthen emergency management services across the Township.
- Incorporate into communications and educational efforts messaging regarding the issues of mental and physical health impacts due to a changing climate.



(Credit: twp.ferguson.pa.us)



(Credit: twp.ferguson.pa.us)



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CRB Workshop Participants: Department/Organization

Township of Ferguson - Board of Supervisors
Township of Ferguson - Office of Township Manager
Township of Ferguson - Public Works Department
Township of Ferguson - Police Department
Township of Ferguson - Planning and Zoning Department
Township of Ferguson - Planning Commission
Centre Region Emergency Management
Centre County Government - Planning Department
Centre Region Planning Agency
Center Region - Sustainability
Penn State - College of Agricultural Sciences - Ag Progress Days
Penn State - Public Safety and Emergency Services
Penn State - Museum
Centre Area Transportation Authority
State College Area School District - Student Services
State College Area Water Authority
Centre County - Mental Health and Intellectual Disability
Centre County United Way

Township of Ferguson Core Project Team

David Pribulka - Township of Ferguson - Manager

Centrice Martin - Township of Ferguson - Assistant Manager (Core Team Lead)

David Modricker - Township of Ferguson - Director, Public Workshop Department

Jenna Wargo - Township of Ferguson - Director, Planning and Zoning Department

Shawn Kauffman - Centre Region Emergency Management Coordinator

Brandi Robinson - Assistant Teaching Professor - Energy and Sustainability Policy

Pam Adams - Centre Region Sustainability Planner

Online CRB Workshop Facilitation Team

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

The Nature Conservancy - Susan AnderBois (IT)

The Nature Conservancy - Drew Goldsman (Facilitator)

The Nature Conservancy - Sara Burns (Facilitator)

Sustainable PA - Jim Price (Scribe)

Pennsylvania Municipal League - Leslie Rhodes (Scribe)

The Nature Conservancy - Julie Ulrich (Scribe)

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The Nature Conservancy - Evan Endres (Scribe)

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Appendix A

Township of Ferguson

Centre County Natural Hazard Mitigation Plan (2015)

Goals and Objectives

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Mitigation Actions

Centre County 2015 Hazard Mitigation Plan Update

Table 6.2-1: 2015 Mitigation Goals and Objectives	
Goal 1	Reduce potential injury or death and damage to existing community assets from all hazards.
Objective 1A	Identify and evaluate potential protection measures for critical facilities, structures, and population with the highest relative vulnerability to all hazards that affect Centre County.
Objective 1B	Provide public outreach and education regarding property owners' vulnerability to all hazards affecting Centre County and strategies to mitigate the risks from these hazards.
Objective 1C	Promote the use of applicable insurance programs (i.e., flooding, crop, and fire) in order to reduce impacts of hazards to property owners.
Objective 1D	Ensure that existing drainage systems such as pipes, culverts, and channels are adequate and functioning properly.
Objective 1E	Evaluate potential contamination of drinking water sources along transportation corridors.
Objective 1F	Enhance planning efforts to account for areas of increased transportation accidents.
Objective 1G	Reduce outage time during significant power failures.
Goal 2	Ensure new construction and substantially improved construction is resistant to natural hazards.
Objective 2A	Assess the adequacy of municipal zoning/land-use ordinances and building-code implementation to reduce risk to identified hazards.
Objective 2B	Encourage and facilitate the development or revision of comprehensive plans and zoning/land-use ordinances to limit development in high-hazard areas.
Objective 2C	Provide adequate and consistent enforcement of ordinances and codes within and between jurisdictions.
Goal 3	Improve emergency warning and response procedures and capabilities.
Objective 3A	Increase public awareness through public outreach and education of actions to take during an emergency.
Objective 3B	Enhance response capability of County and municipal fire, police, and emergency medical services personnel to all vulnerable populations.
Objective 3C	Enhance response capability of County and municipal services by integrating vulnerability analyses into emergency planning efforts.
Objective 3D	Evaluate communities that require warning systems and storm shelters.
Objective 3E	Monitor and ensure Emergency Action Plans for all high hazard dams in the County are current.
Goal 4	Promote hazard mitigation as a public value in recognition of its importance to the health, safety, and welfare of the population.
Objective 4A	Provide public education to increase awareness of hazards and opportunities for mitigation.
Goal 5	Protect existing natural resources, and promote the preservation of areas where the natural hazard threat potential is high.
Objective 5A	Work to preserve steeply sloping areas, sinkhole areas, floodplains, and other natural areas with high threat potential to reduce risk in surrounding populated areas.
Objective 5B	Protect open space, including parks and wetlands, within the floodplain.
Objective 5C	Restore degraded natural resources and open space to improve their flood, and other hazard, control function.

Centre County 2015 Hazard Mitigation Plan Update

Table 6.4-1: Centre County Mitigation Action Plan

ACTION NUMBER	ACTION	MUNICIPALITY	CATEGORY	HAZARD(S) ADDRESSED	LEAD AGENCY/ DEPARTMENT	IMPLEMENTATION SCHEDULE	FUNDING SOURCE	PRIORITY SCORE
10	Continue to restrict future development at sites within the floodplain in Ferguson Township.	Township of Ferguson	Structure and Infrastructure	Flood, Flash Flood, & Ice Jam	Centre Region Council of Governments	Five years	County, HMGP	2.6
17	Continue to provide homeowners and developers advice on Karst topography when developing in known sinkhole prone areas.	Centre County; Borough of Bellefonte, Township of Benner, Township of Boggs, Township of Burnside, Borough of Centre Hall, Township of College, Township of Curtin, Township of Ferguson, Township of Gregg, Township of Haines, Township of Halfmoon, Township of Harris, Borough of Howard, Township of Howard, Township of Huston, Township of Liberty, Township of Marion, Township of Miles, Borough of Milesburg, Borough of Millheim, Township of Patton, Township of Penn, Borough of Philipsburg, Borough of Port Matilda, Township of Potter, Township of Rush, Township of Snow Shoe, Township of Spring, Borough of State College, Township of Taylor, Township of Union, Borough of Unionville, Township of Walker, Township of Worth	Education and Awareness	Subsidence and Sinkholes	Centre County Planning and Community Development Office	Ongoing	County	1.95
19	Provide fire safety education program.	Borough of Bellefonte, Township of College, Township of Ferguson, Township of Halfmoon, Township of Harris, Township of Patton, Borough of State College	Education and Awareness	Urban Fire	Municipalities and Centre Region	Annually	DCNR, HMGP	1.5
21	Continue to coordinate with PA State Game Commission and DCNR to conduct prescribed burns as necessary to reduce wildfire risk.	Township of College, Township of Ferguson, Township of Halfmoon, Township of Harris, Township of Patton, Borough of State College	Natural Systems Protection	Wildfire	Centre Region Office of Emergency Management	Five years	DCNR	2.45
22	Continue to identify point of dispensing sites.	Township of College, Township of Ferguson, Township of Halfmoon, Township of Harris, Township of Patton, Borough of State College	Plans and Regulations	Pandemic	Centre Region Office of Emergency Management	Ongoing	HMGP	1.65
23	Identify vulnerable populations, especially in independent living, extended care, and hospice care residential living facilities, to provide information regarding appropriate evacuation and sheltering resources.	Township of College, Township of Ferguson, Township of Halfmoon, Township of Harris, Township of Patton, State College Borough	Education and Awareness	All	Centre Region Emergency Management Office	One year	Centre Region Emergency Management	2.7

Table 6.4-1: Centre County Mitigation Action Plan

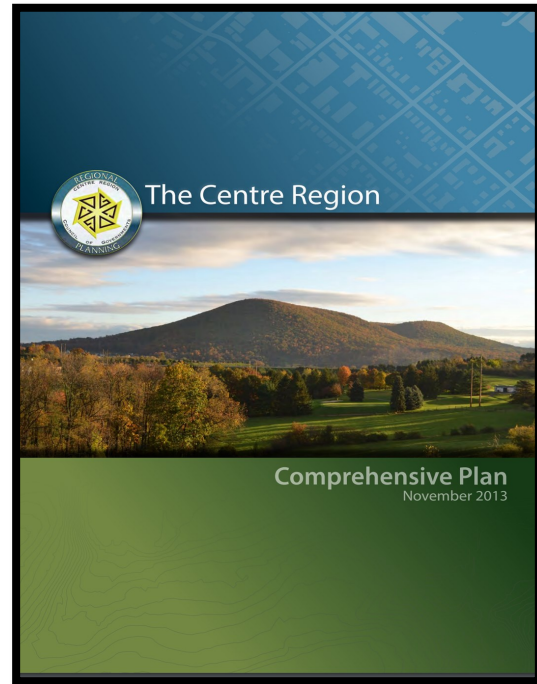
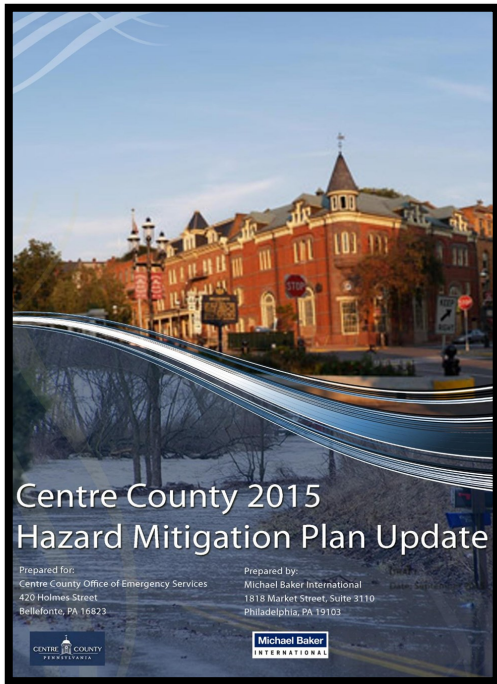
ACTION NUMBER	ACTION	MUNICIPALITY	CATEGORY	HAZARD(S) ADDRESSED	LEAD AGENCY/ DEPARTMENT	IMPLEMENTATION SCHEDULE	FUNDING SOURCE	PRIORITY SCORE
24	Provide information to private land owners about benefits of and obtaining crop insurance for drought protection.	Township of Potter, Township of Ferguson, Township of Halfmoon, Township of Spring, Township of Gregg, Township of Marion, Township of Walker, Township of College, Township of Liberty, Township of Harris, Township of Miles	Education and Awareness	Drought	Penn State University – Cooperative Extension	Two years	Municipalities	2.3
25	Expand participation in the Firewise Program.	Township of Rush, Township of Gregg, Township of Snow Shoe, Township of Walker, Township of College, Township of Ferguson, Township of Halfmoon, Township of Harris, Township of Patton, Borough of State College	Education and Awareness	Wildfire	Bureau of Forestry	Five years	County, DCNR, HMGP	1.65
43	Obtain grant funding to acquire, demolish, relocate, and/or elevate structures that are vulnerable to flooding.	Centre County; Bellefonte Borough, Benner Township, Boggs Township, Burnside Township, Centre Hall Borough, College Township, Curtin Township, Ferguson Township, Gregg Township, Haines Township, Halfmoon Township, Harris Township, Howard Borough, Howard Township, Huston Township, Liberty Township, Marion Township, Miles Township, Milesburg Borough, Millheim Borough, Patton Township, Penn Township, Philipsburg Borough, Port Matilda Borough, Potter Township, Rush Township, Snow Shoe Borough, Snow Shoe Township, Spring Township, State College Borough, Taylor Township, Union Township, Unionville Borough, Walker Township, Worth Township	Structure and Infrastructure	Flood, Flash Flood, & Ice Jam	Centre Region Office of Emergency Management	Five years	HMGP	2

Table 6.4-1: Centre County Mitigation Action Plan

ACTION NUMBER	ACTION	MUNICIPALITY	CATEGORY	HAZARD(S) ADDRESSED	LEAD AGENCY/ DEPARTMENT	IMPLEMENTATION SCHEDULE	FUNDING SOURCE	PRIORITY SCORE
44	Review floodplain ordinances annually to ensure compliance with current floodplain management and insurance standards and guidance.	Bellefonte Borough, Benner Township, Boggs Township, Burnside Township, Centre Hall Borough, College Township, Curtin Township, Ferguson Township, Gregg Township, Haines Township, Halfmoon Township, Harris Township, Howard Borough, Howard Township, Huston Township, Liberty Township, Marion Township, Miles Township, Milesburg Borough, Millheim Borough, Patton Township, Penn Township, Philipsburg Borough, Port Matilda Borough, Potter Township, Rush Township, Snow Shoe Borough, Snow Shoe Township, Spring Township, State College Borough, Taylor Township, Union Township, Unionville Borough, Walker Township, Worth Township	Plans and Regulations	Flood, Flash Flood, & Ice Jam	Centre Region Office of Emergency Management; Centre County Planning and Community Development Office; Municipalities	Annually	County	2.25

Appendix B

Township of Ferguson Map Resource Packet* Used During Workshop



***Gathered from the Centre County Hazard Mitigation Plan (2015) & The Centre Region Comprehensive Plan (2013)**

Figure 2.1-1: Centre County base map.

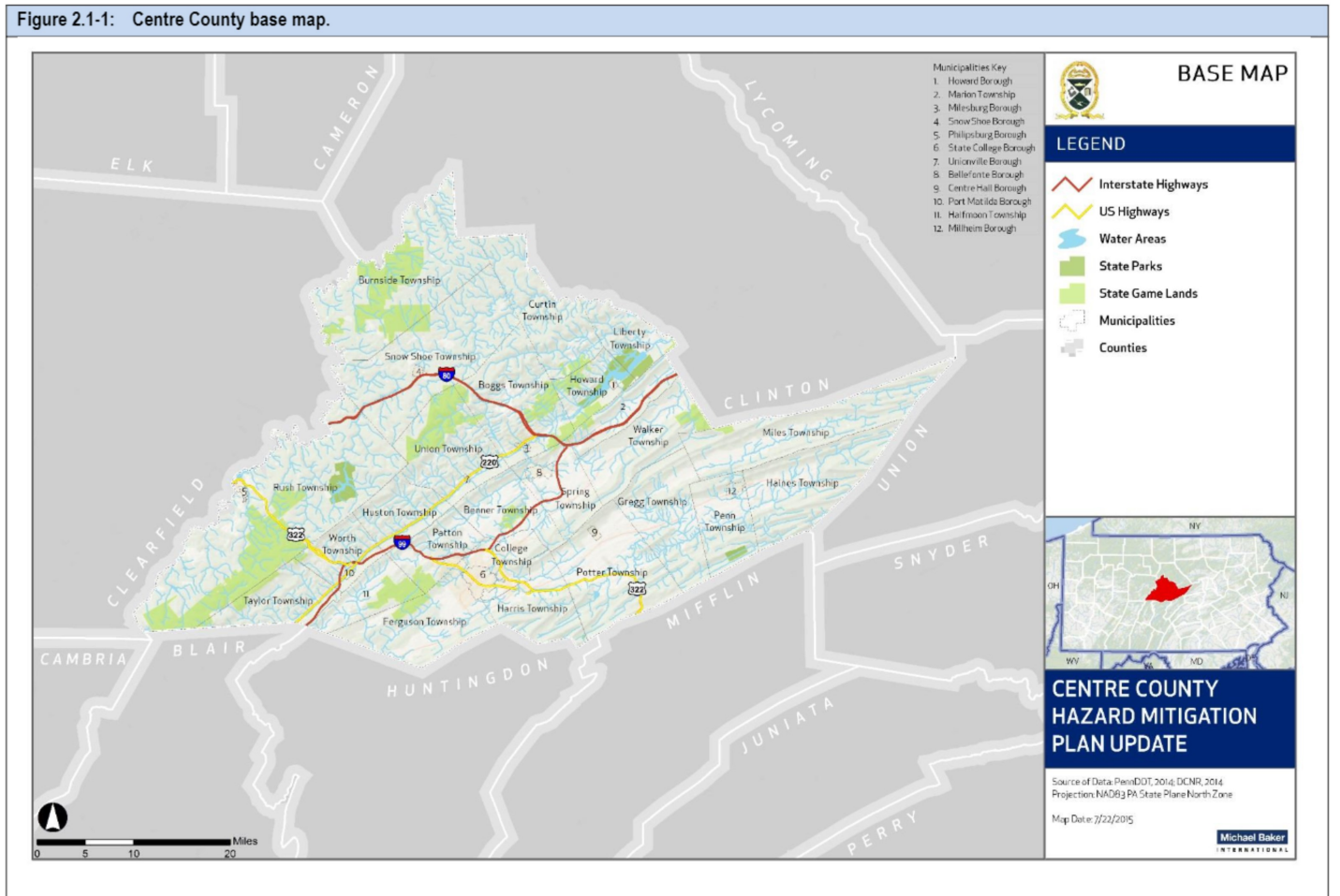


Figure 2.1-2: Centre County watersheds.

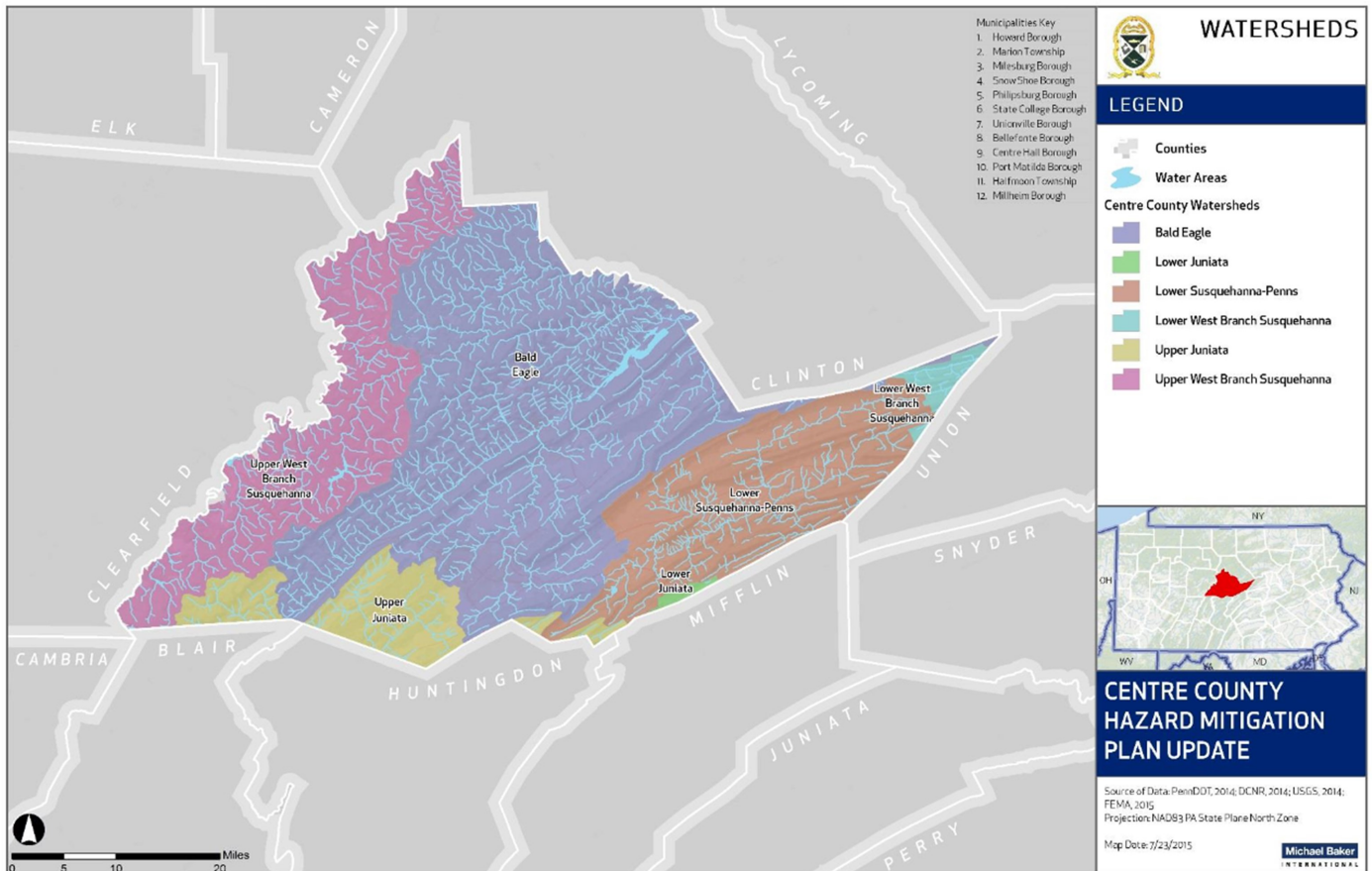


Figure 2.4-1: 2015 Centre County land use.

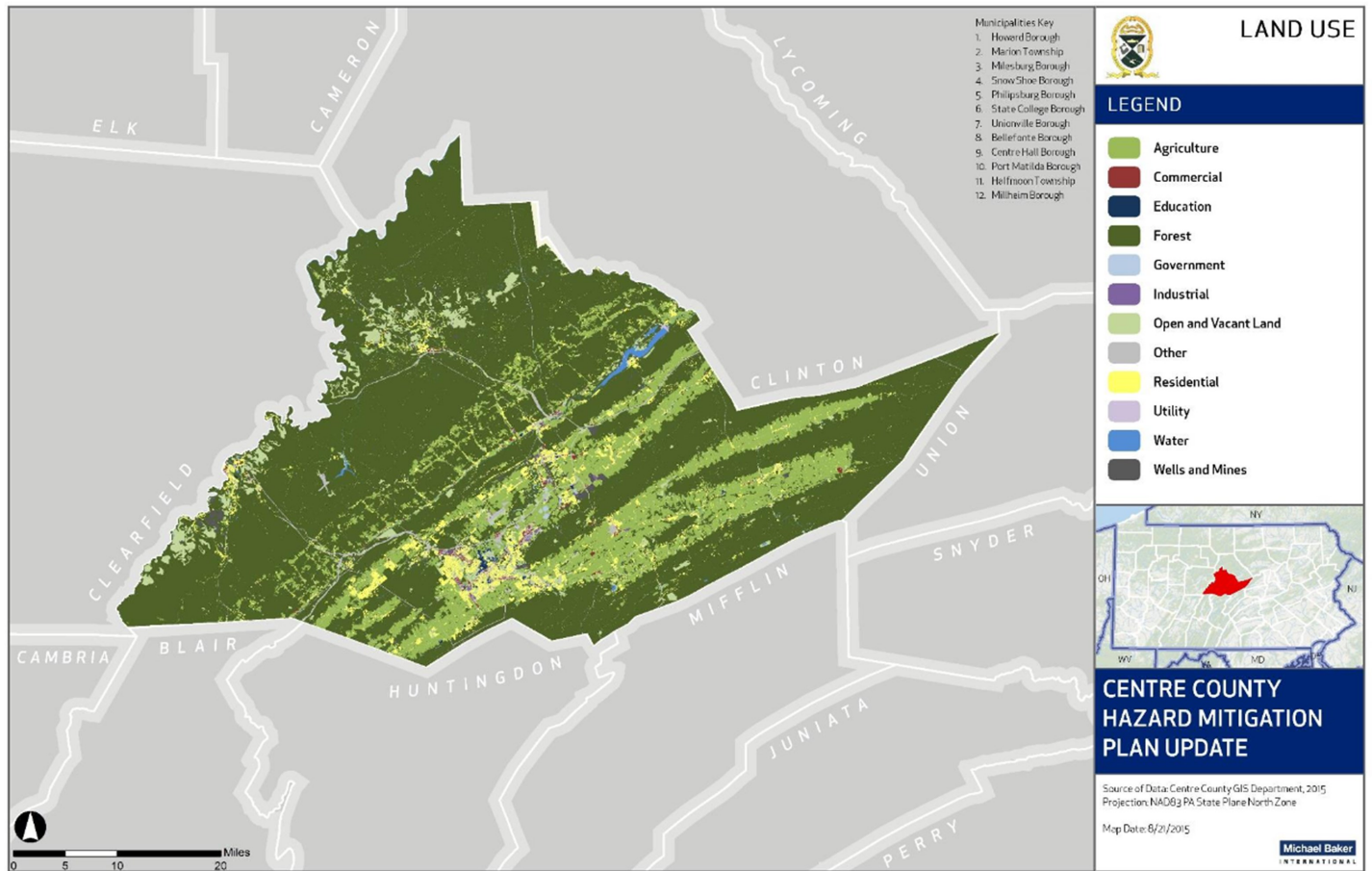


Figure 4.3.1-2: PSDI for Centre County

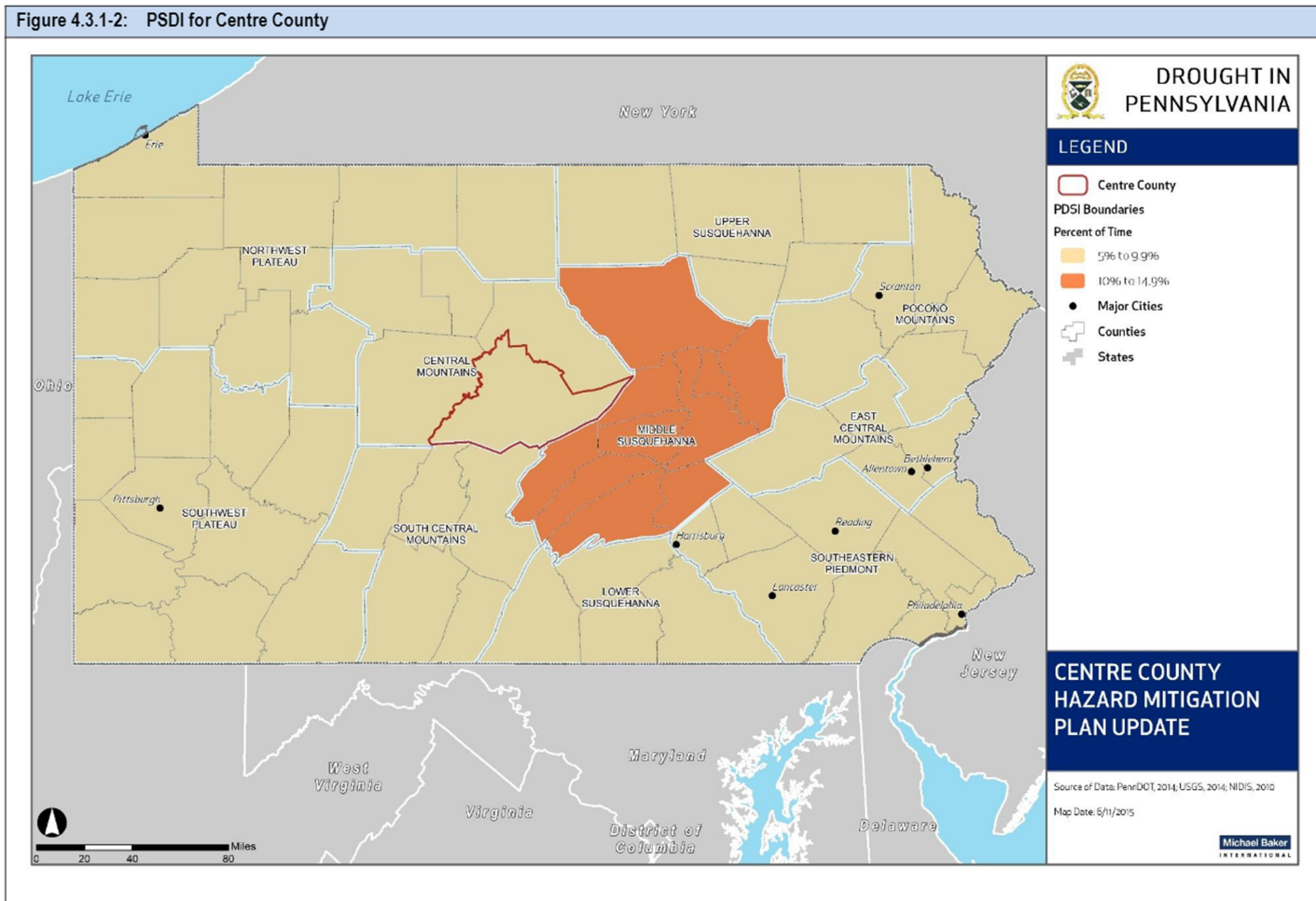


Figure 4.3.1-3: Public Water Suppliers within Centre County.

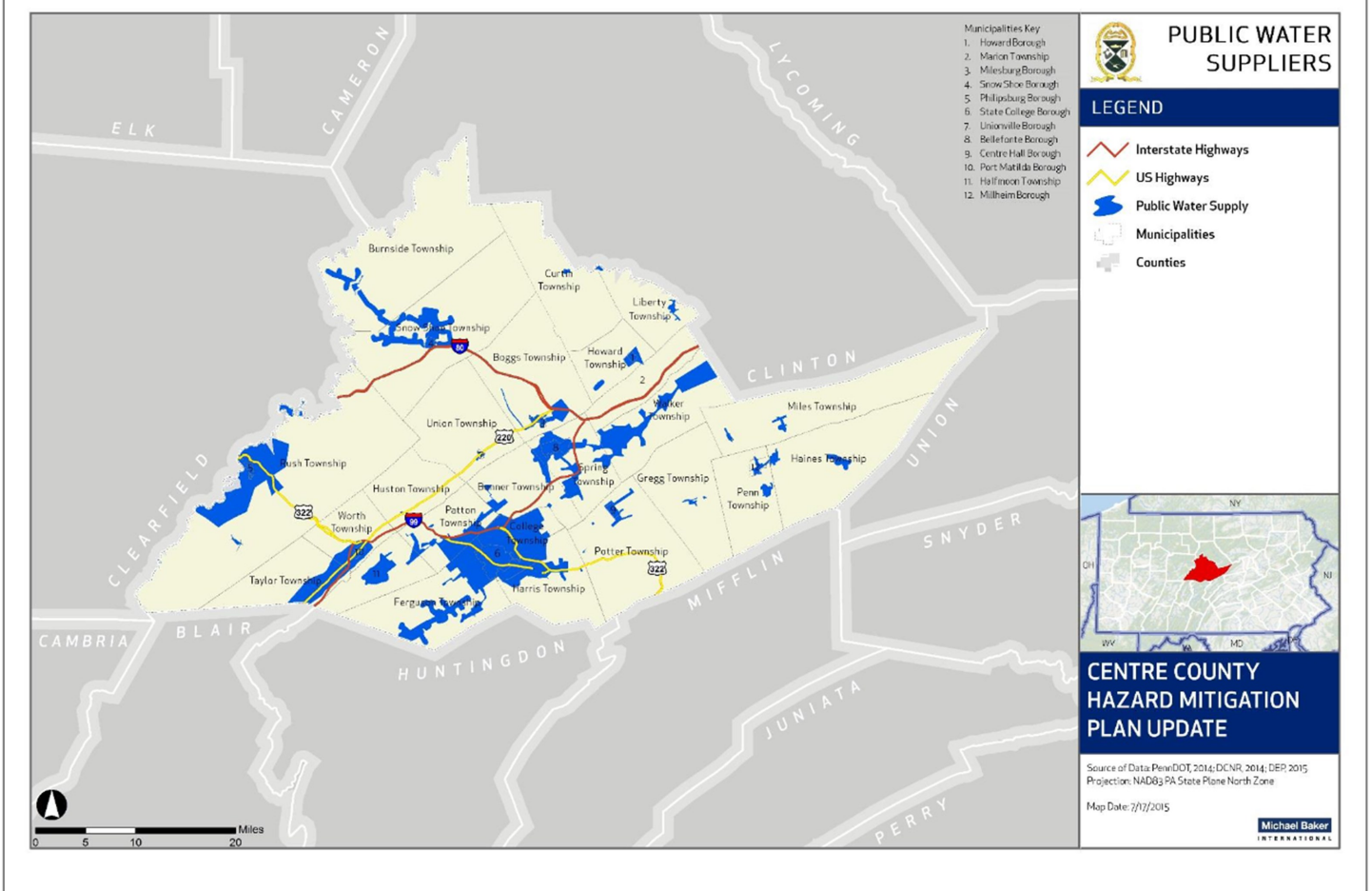


Figure 4.3.4-3: Map showing the location of SFHAs throughout Centre County.

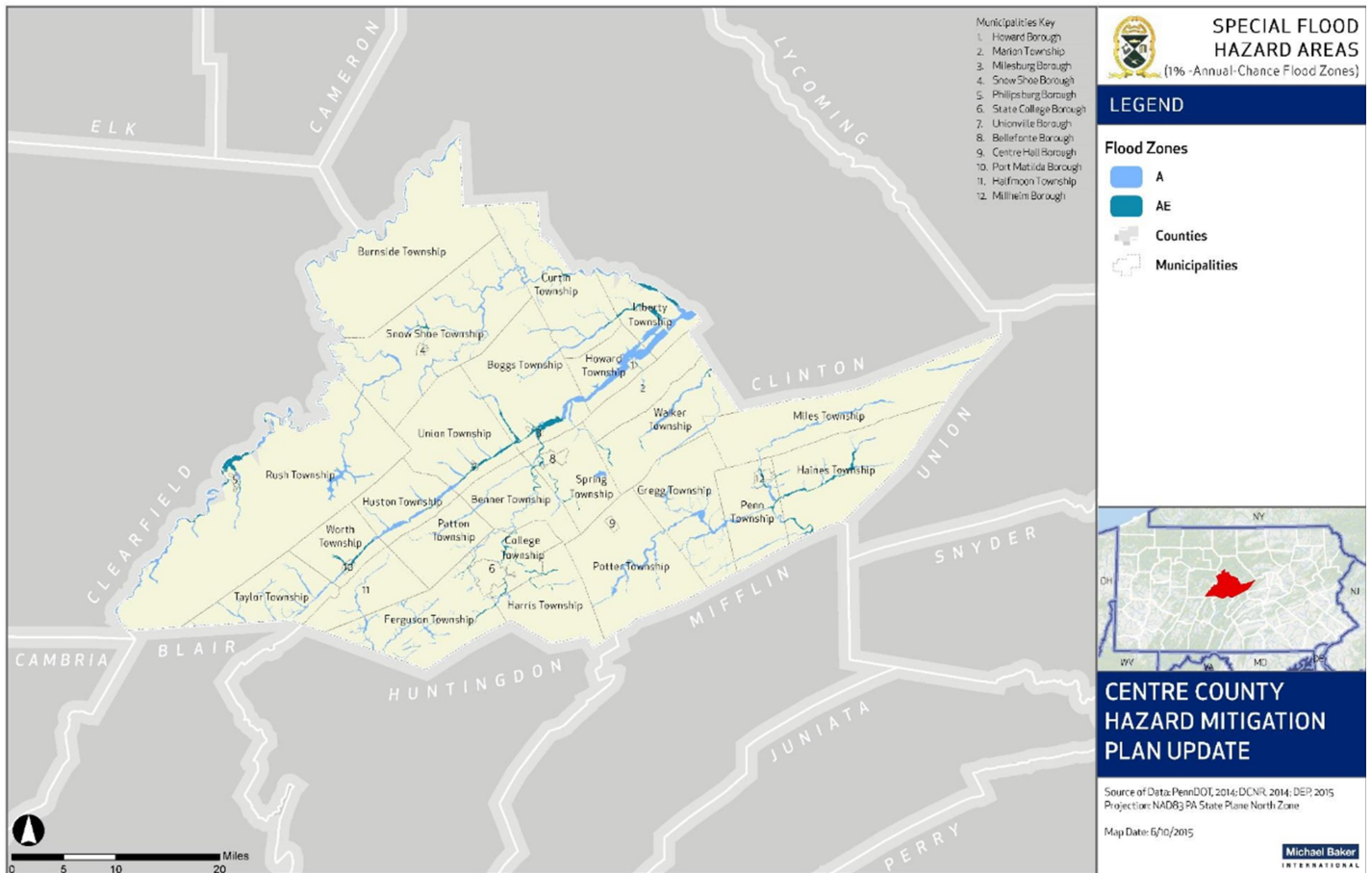


Figure 4.3.4-9: Map showing the location of flash flood reports throughout Centre County.

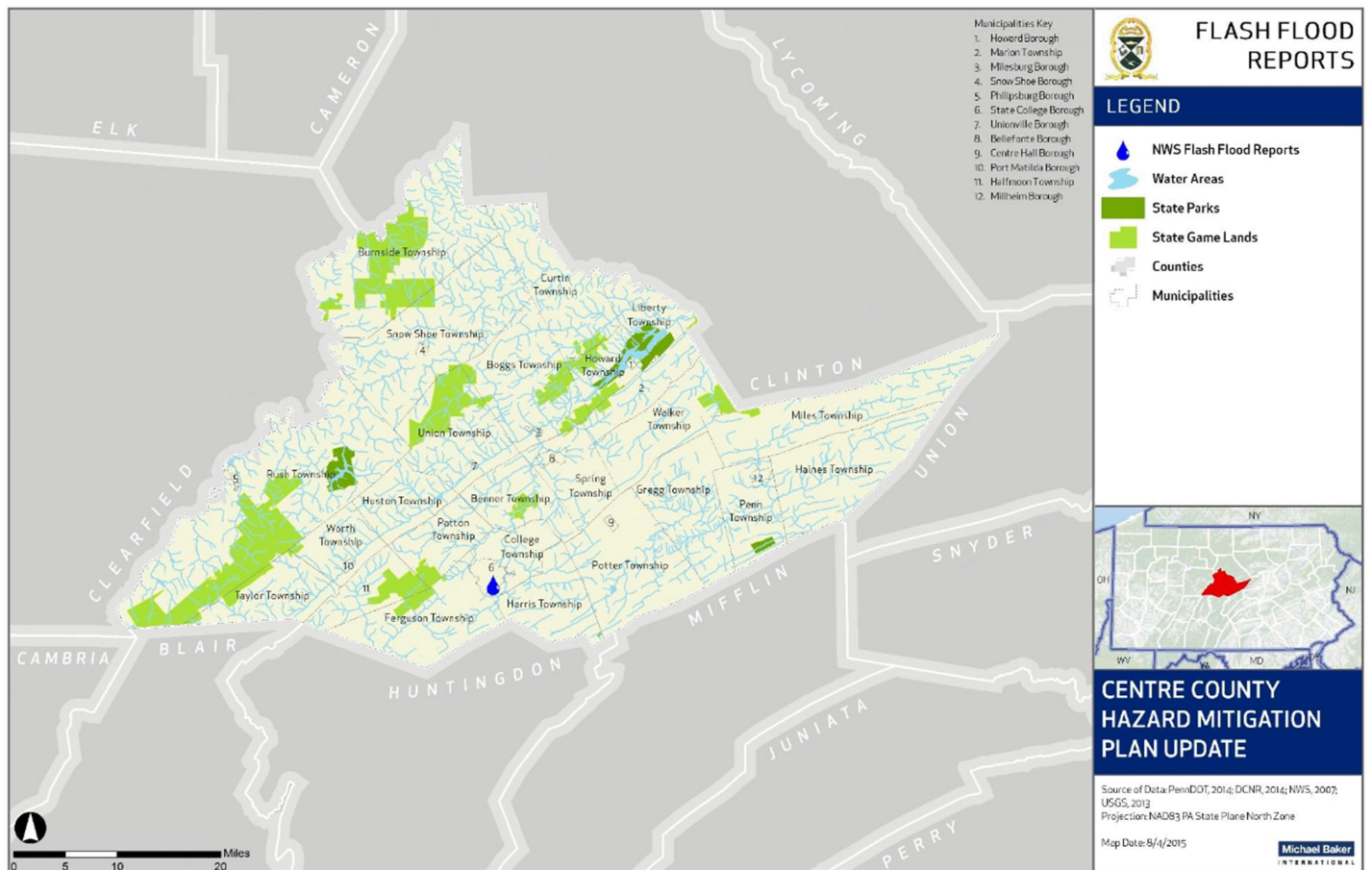


Figure 4.3.6-2: Centre County close-up of municipalities with moderate landslide susceptibility and incidence.

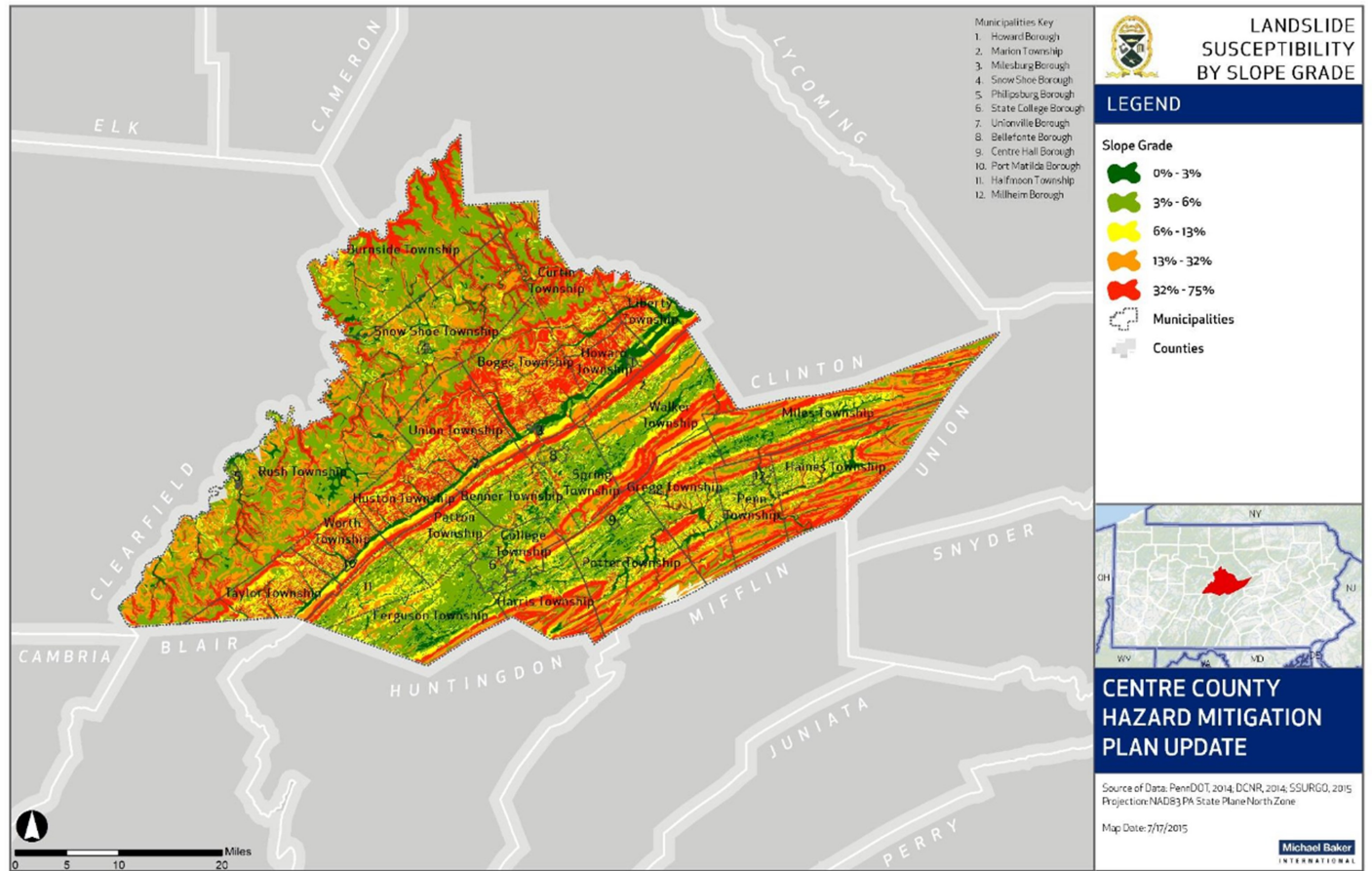


Figure 4.4-1: Centre County potential loss calculated with HAZUS-MH.

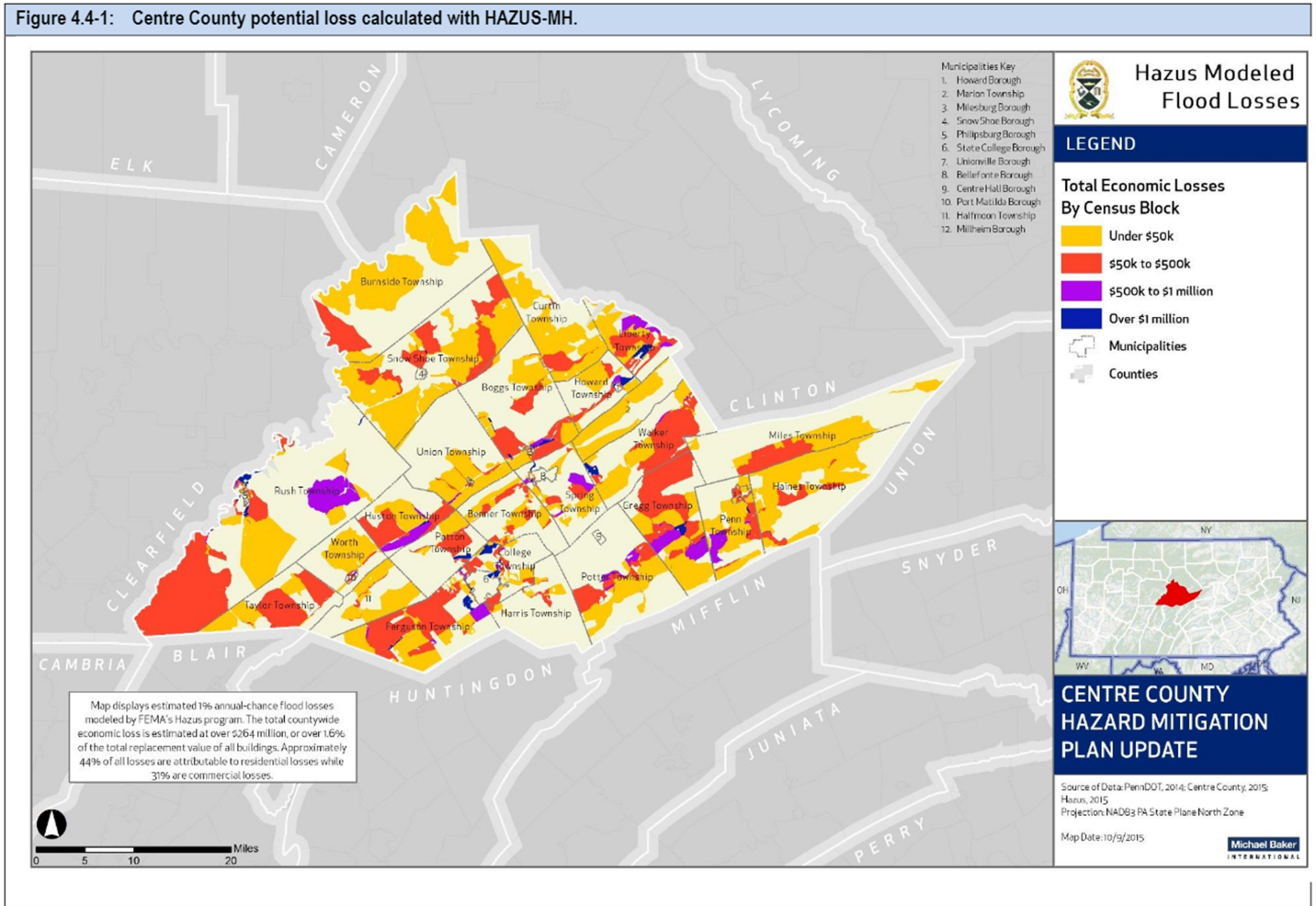
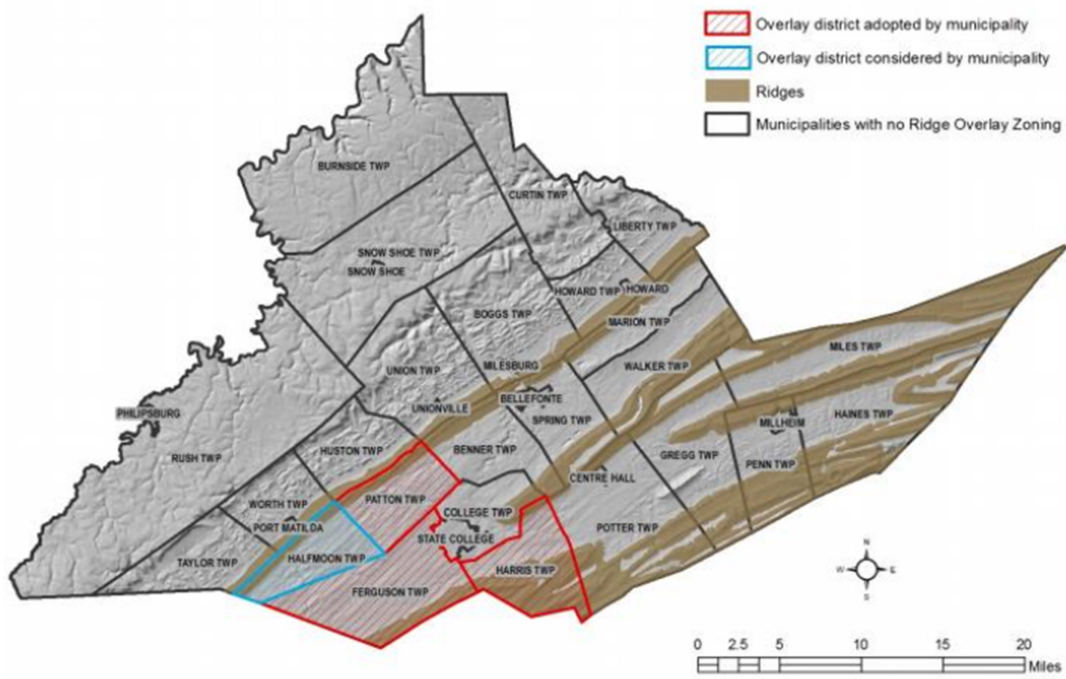
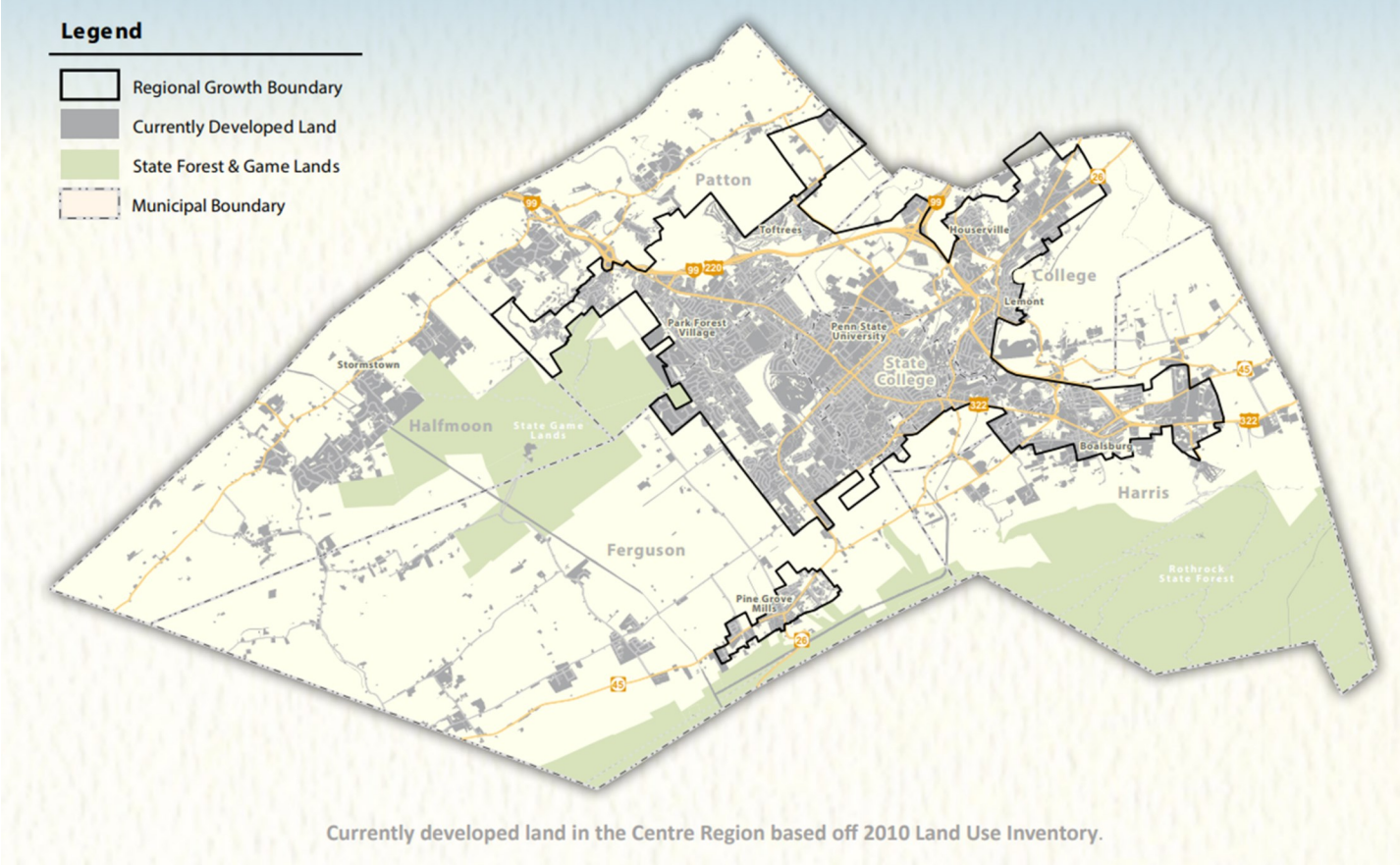


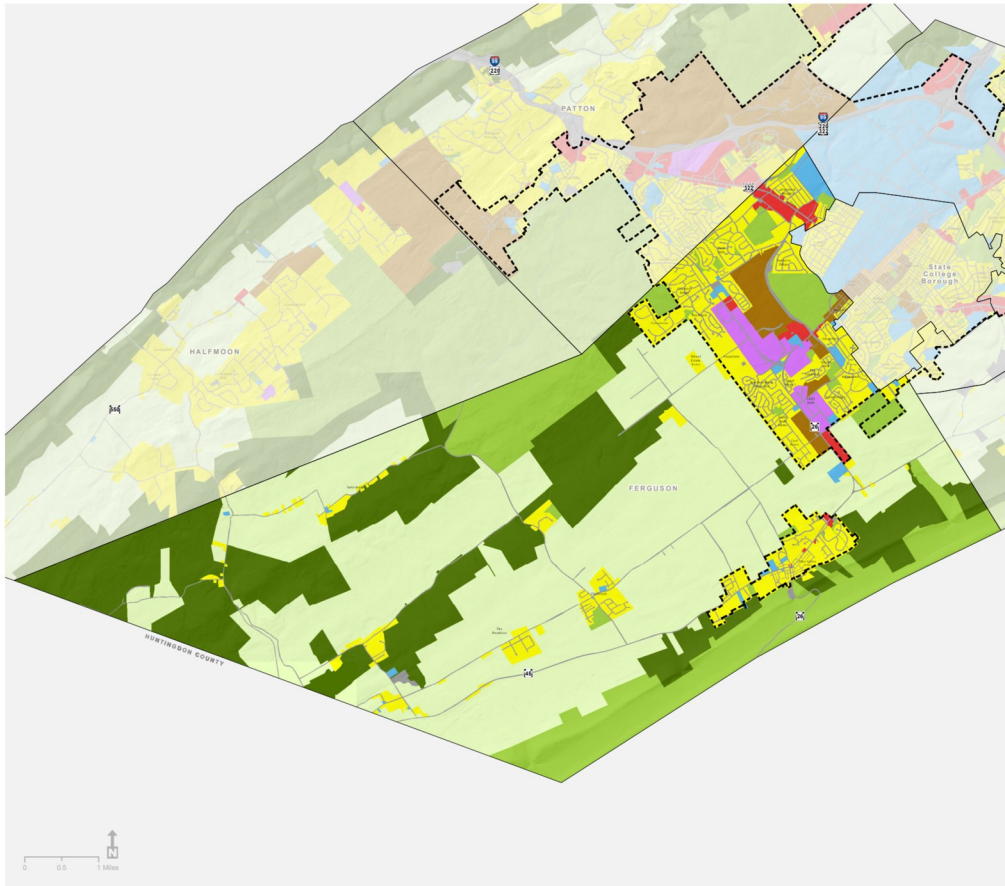
Figure 5.2-3: Centre County Ridge Overlay Districts (CCPCDO, 2009-2013)

Municipalities with Ridge Overlay Zoning Districts

compared with ridge locations in Centre County







The Centre Region Comprehensive Plan

Future Land Use Ferguson Township

Future Land Use

- Agriculture
- Commercial/Office
- Downtown District
- Forest
- Industrial/Office
- Mixed Use
- Parks/Recreation/Conservation
- Public/Institutional
- Residential
- Transportation/Communication/ Utilities

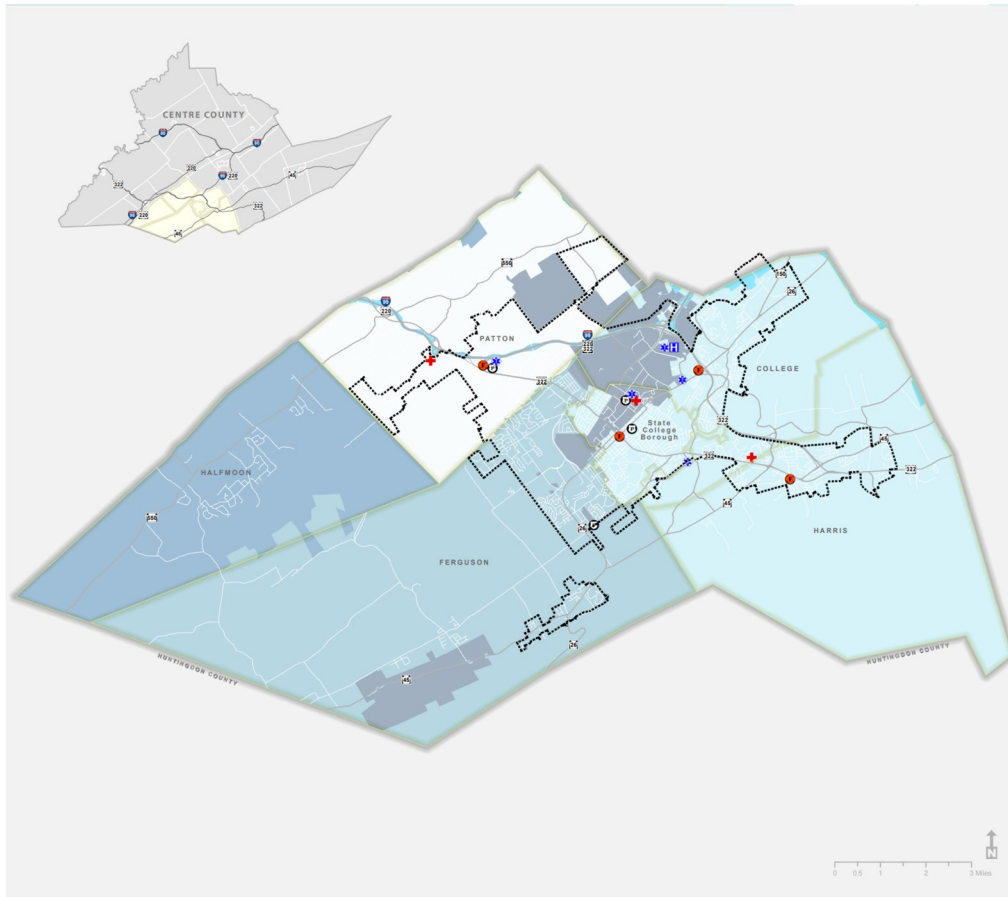
Regional Features

- Regional Growth Boundary/ Sewer Service Area
- Municipal Boundary



Projection: PA State Plane North (S) North Datum
 Prepared By: Steven Anzures - Geographical Technology Program
 at Penn State for the Centre Regional Planning Agency
 Date: 11/22/2011
 Data Source: Cambria County GIS, USGS, The Centre Regional
 Planning Agency, Geographical Technology Program at Penn State

M4



The Centre Region Comprehensive Plan

Emergency Facilities & Coverage Areas

Emergency Facilities

- Hospital
- Medical Facility
- Emergency Medical Services
- Fire Station
- Police Station

Police Coverage Areas

- Penn State PD
- PA State Police - Phillipsburg
- Ferguson Township PD
- PA State Police - Rockview
- State College Borough PD
- Patton Township PD

Regional Features

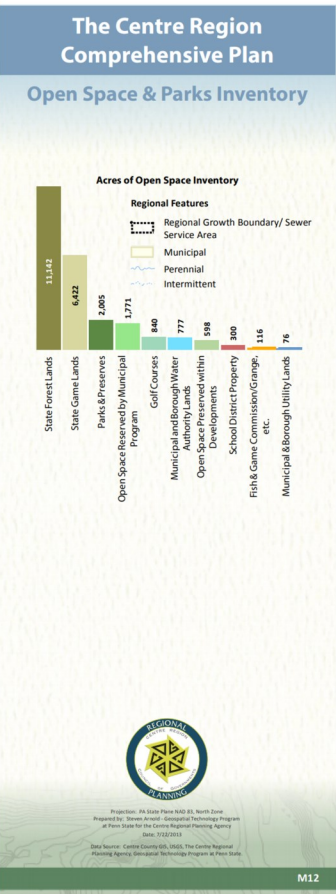
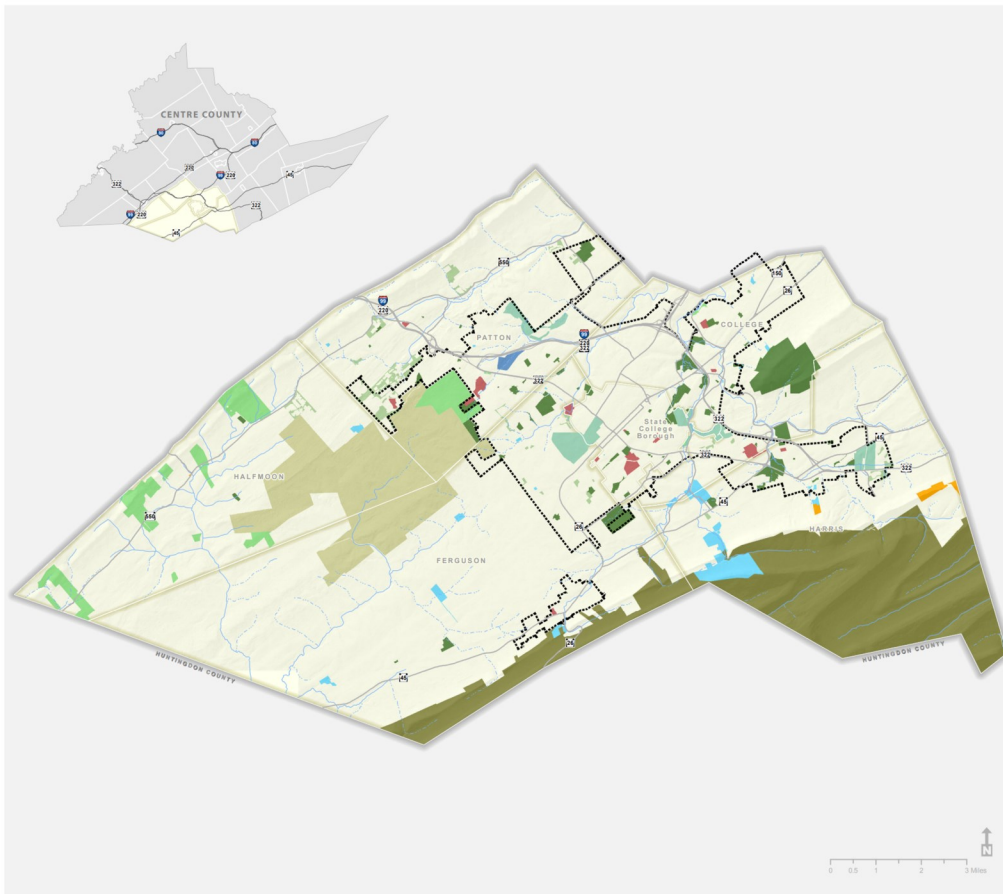
- Regional Growth Boundary/ Sewer Service Area
- Municipal Boundary

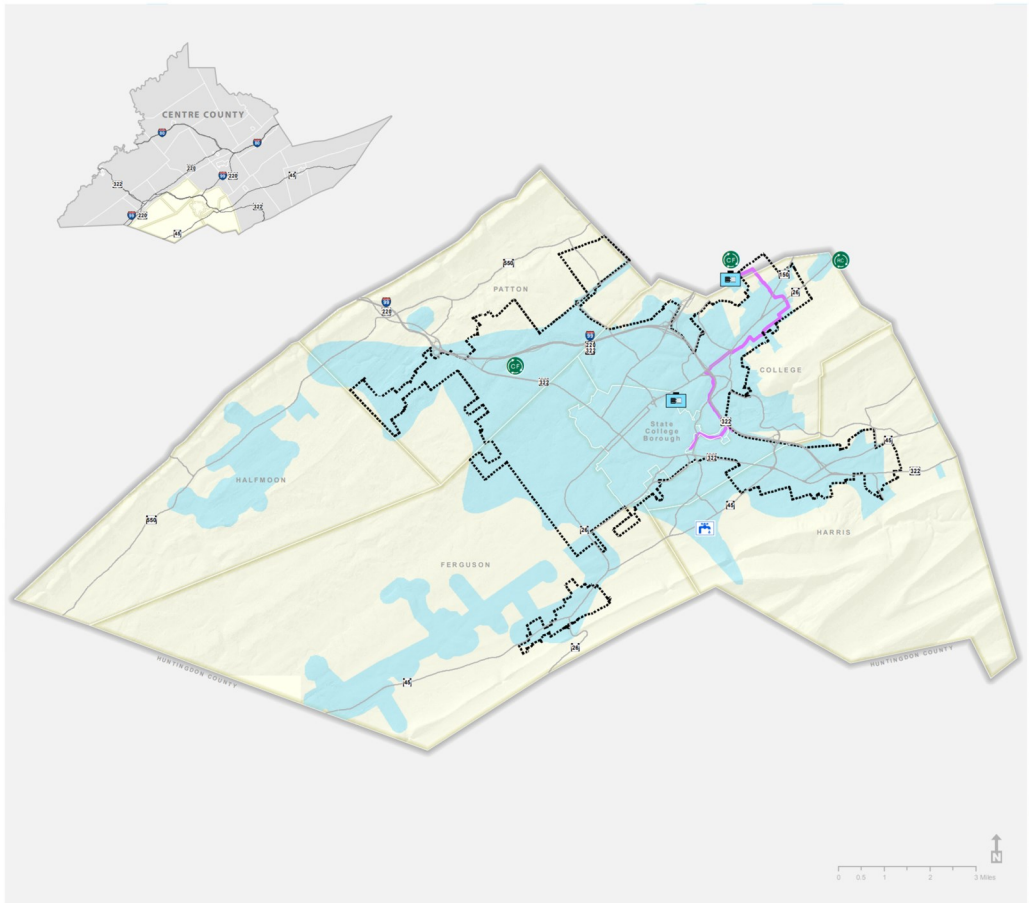


Prepared by: PA State Police, NAD 83, North Zone
 Prepared for: Centre Region - Collaborative Planning Program
 at Patuxent State for the Centre Regional Planning Agency
 Date: 11/22/2011

Data Source: Centre County GIS, USGS, The Centre Regional
 Planning Agency, Collaborative Planning Program at Patuxent State

M16





The Centre Region Comprehensive Plan


Utilities Inventory

Utility Features

- Water Treatment Plant
- Sewage Treatment Plant
- Municipal Waste Collection/Recycling
- Composting Facility
- Beneficial Reuse Water Line
- Water Service Area

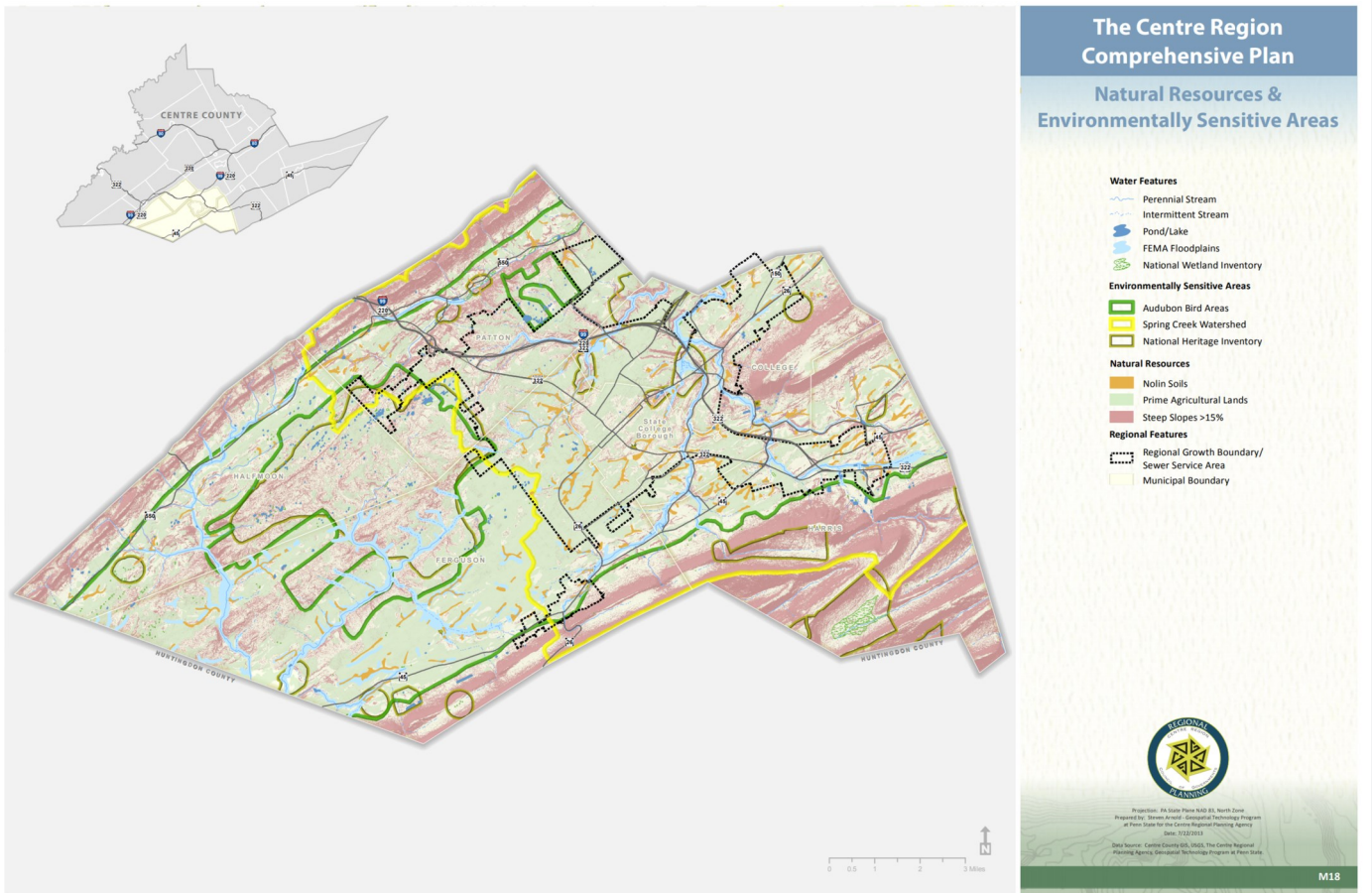
Regional Features

- Regional Growth Boundary/ Sewer Service Area
- Municipal Boundary



Prepared by: Center for NECEC, March 2014
 Prepared by: Steven Arnold - Geographical Technology Program
 at Penn State for the Centre Regional Planning Agency
 Date: 10/20/2013
 Data Source: Centre County GIS, LAGS, The Centre Regional
 Planning Agency Geographical Technology Program at Penn State.

M14



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