

3.4 Mitigation Strategy

The Lincoln Trail Regional Hazard Mitigation Plan includes mitigation strategies intended to reduce or eliminate the impacts of natural hazard events identified through the risk assessment process. The mitigation strategies developed for this plan are the result of gathering pertinent data from every jurisdiction, extensive research and analysis of hazard data and profiles, and careful assessment of regional vulnerability.

Process Summary: Integration of Hazard Mitigation Plan with Other Planning Mechanisms.

The process of gathering hazard data, evaluating local resources and mitigation tools, and updating the Lincoln Trail Regional Hazard Mitigation Plan has given all local units of government insight into the importance of incorporation hazard mitigation into local community planning efforts, emergency operations plans, capital improvement plans, local law, and public education outreach efforts whenever practical and applicable. An exhaustive list of these capabilities and planning mechanisms is contained in tables 3.4.1.1.1, 3.4.1.1.2 and 3.4.1.1.3.

This effort is exemplified throughout the migration strategy section of this plan and reflected in the regional goals, jurisdictional legal authorities, mitigation strategies, completed and proposed projects, and public education outreach efforts cited.

3.4.1 Capabilities Assessment

The success of any mitigation strategy is incumbent on the resources and capabilities of the regional jurisdictions to implement action plans that successfully achieve mitigation goals. Local communities submitted information used to identify regional capabilities. Assessment of these capabilities will enable the region to identify disparities and capitalize on local resources as a means of accomplishing mitigation goals.

Since approval of the Lincoln Trail Regional Hazard Mitigation Plan in 2005, the Plan received dual approval under the multi-hazard and flood mitigation categories. All jurisdictions are now eligible to apply for Flood Mitigation Assistance (FMA) funds in addition to Pre-Disaster and Hazard Mitigation grant assistance.

A capabilities assessment illustrates the resources available to achieve goals and identifies gaps where improvements can be made to improve regional resiliency and preparedness.

Legal Authority of Local Jurisdictions

Local units of government in Kentucky are empowered to implement mitigation programs, policies, and actions. Local governments can utilize their powers of regulation, acquisition, taxation and spending to implement a successful hazard mitigation program within their respective jurisdictions. Utilization of all four is the best approach to formulating a comprehensive program that diminishes the propensity for oversights.

Regulation

Police Power: The Kentucky Revised Statutes bestow general police power to local units of government. This enables them to enact and enforce ordinances that define, prohibit, regulate, or abate actions, omissions, or conditions deemed detrimental to the welfare of the public, and to abate nuisances.

Police power is an effective tool that allows local units of government to implement hazard mitigation programs to protect public health, safety, and welfare through the use of local ordinances. Local ordinances may also be used to mitigate any circumstance that threatens the general health and safety of the public.

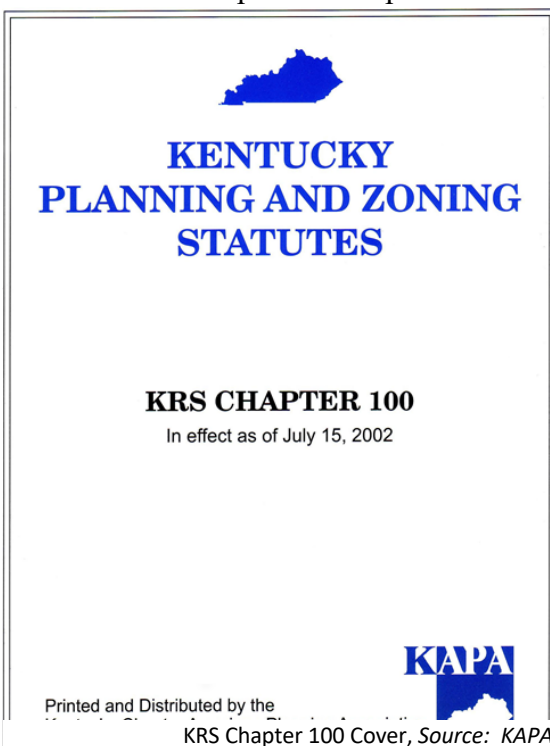
Each jurisdiction within the Lincoln Trail Region has the authority to enact and enforce regulatory ordinances designed to protect the health, safety, and general welfare of its citizens.

Building Codes and Building Inspection: Mitigation measures may regulate the standards for the construction and retrofit of structures within a community, in order to make buildings more resilient to the effects of natural hazards. State and Federal building codes and regulations are designed to help meet these standards.

When appropriate, local jurisdictions are encouraged to develop and enforce building codes that exceed the standards provided in State and Federal regulations. The ability of local units of government to develop codes specific to their geography and vulnerabilities is an essential tool to ensure that mitigation strategies are appropriate and successful.

Land Use: KRS 100 enables local units of government to create a comprehensive plan for land use. In counties with populations of 300,000 or more, KRS 100 mandates countywide planning; otherwise, it is an enabling statute. The Lincoln Trail Region does not have any counties with a population of 300,000. KRS 100 allows local governments to utilize a powerful tool for controlling land use within each jurisdiction. Land use controls can determine the amount, timing, density, quality, and location of all new development. These land use controls can help to determine the level of vulnerability each jurisdiction will experience because of a natural disaster. Land Use Plans become a chapter in each participating jurisdiction's comprehensive plan and can be enforced through planning, zoning ordinances, floodplain ordinances and subdivision regulations.

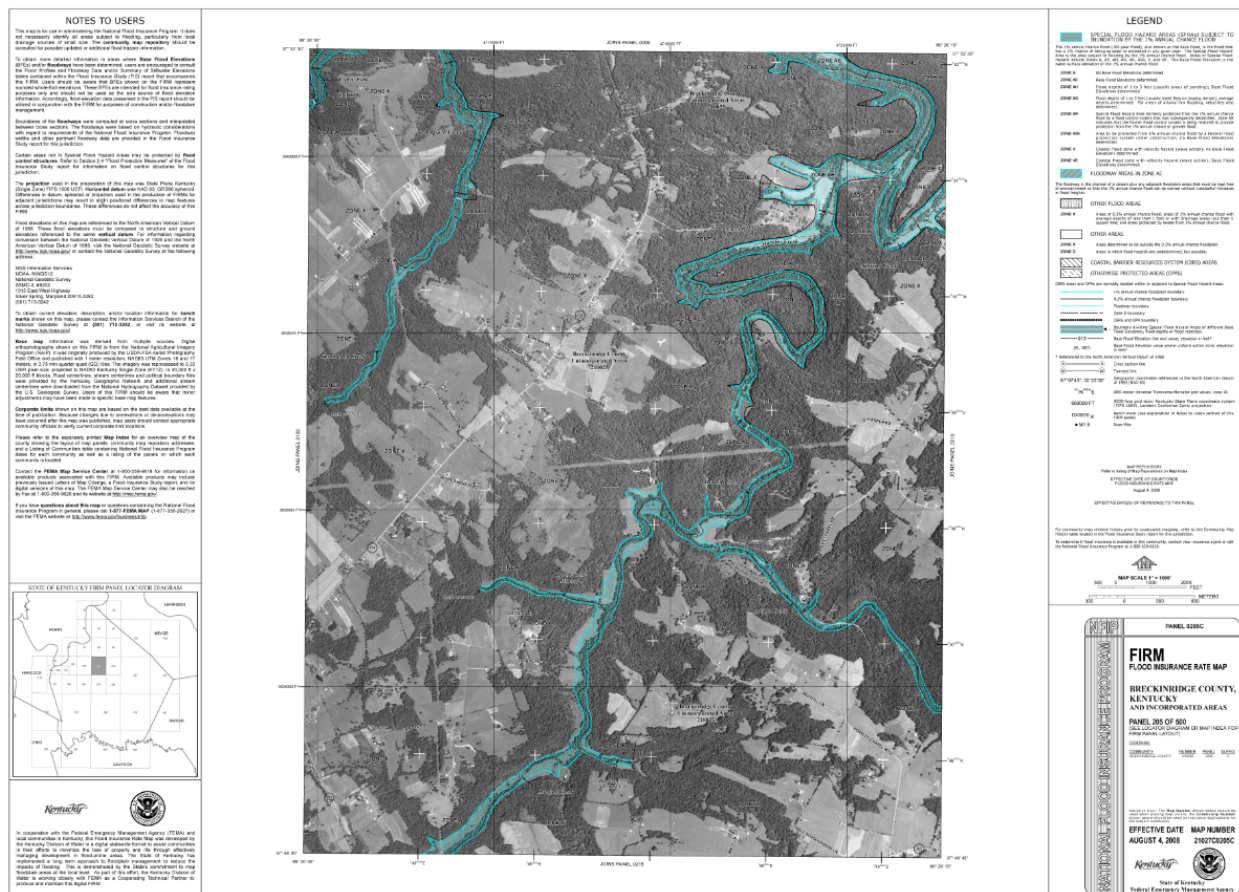
Planning: KRS 100 establishes three types of planning units: independent, joint, and regional. The type of planning unit determines the land area within



its purview. The Lincoln Trail Region has two joint planning units with the remainder being independent planning units. All planning units have the authority to engage in planning activities such as conducting studies, developing goals and the objectives for attaining those goals, creating policies and ordinances, and implementing administrative means to facilitate plans.

Zoning: When local planning units have adopted all the required elements of a comprehensive plan, then the legislative bodies and fiscal courts within the planning unit may enact zoning and other growth management regulations to promote public health, safety, morals, and general welfare of the planning unit, in accordance with KRS 100.201. Specifically, zoning can be used to protect natural resources, specific areas of the planning unit that need special protection, and to prevent the loss of life, health, or property from fire, flood, and other dangers.

Within the Lincoln Trail Region, FEMA has designated Flood Hazard Areas (FHA). Zoning can be effectively used to preclude development within proximity to these areas. Local



FIRM Breckinridge County 21027C0250C, Source: FEMA.

Digital Flood Insurance Rate Maps (DFIRM) are used to determine where these areas are. Zoning ordinances should prohibit development within these areas and protect the functional integrity of the floodplains.

Subdivision Regulations: KRS 100 defines subdivision as “the division of a parcel of land into three (3) or more lots or parcels except in a county containing a city of the first, second or third class or in an urban-county government or consolidated local government where a subdivision

means the division of a parcel of land into two (2) or more lots or parcels; for the purpose, whether immediate or future, of sale, lease, or building development, or if a new street is involved, any division of a parcel of land; provided that a division of land for agricultural use and not involving a new street shall not be deemed a subdivision.” A planning unit may develop subdivision regulations for a number of purposes, to include: the protection and preservation of the value of the land, buildings and improvements upon the land, the protection and provision of public health, safety and general welfare of the jurisdiction, to minimize the pollution of air, streams and ponds, to assure that drainage facilities are adequate, safeguard the water table, preserve the natural features of the area, and to encourage wise use and management of natural resources.

Subdivision regulations, pertaining to flooding, usually require developers to install adequate drainage systems and design water and sewer facilities that minimize flood damage and avoid contamination.

Floodplain Ordinance: State and federal governments can play a significant role in assisting communities to develop and implement floodplain management programs and encourage the effective use of mitigation strategies. However, the final responsibility rests with local units of government. Flood plains are important water resource areas when left in their natural, undisturbed state. They are often very fertile areas for farming as well, and several exist within the Lincoln Trail Region. Flood plains serve three major purposes: as natural water storage and conveyance; water quality maintenance; and as a ground water recharge area. Unsuitable development in, or manipulation of a flood plain can destroy its value and have an adverse environmental impact on the area. An example of adverse impact would be the flooding of previously dry land when fill is added to any area of a flood plain.

All eight counties and eighteen of the twenty cities within the Lincoln Trail Region participate in the National Flood Insurance Program (NFIP), thus making flood insurance available to their citizens. These communities became eligible for participation in NFIP by adopting floodplain management regulations intended to reduce or eliminate future losses due to flooding. Only those property owners who purchase flood insurance are covered for losses due to flooding, since homeowner’s insurance does not cover flood damage or losses. Floodplain management regulations, the creation and enforcement of floodplain ordinances and the use of digital floodplain maps are all valuable tools in mitigating damage and losses due to flooding.

Acquisition

KRS 104.030 empowers cities to extend flood control measures outside corporate boundaries through the acquisition of property. To protecting property within and beyond their corporate limits, cities of all classes are authorized to extend a municipal flood control system beyond city limits by constructing, enlarging, extending, equipping, maintaining, and operating walls or other barriers with necessary appurtenances and equipment, beyond the municipal corporate boundaries.

In 1997, Meade County utilized a FEMA Hazard Mitigation Program Grant to exercise the power of acquisition to buy out a portion of the Concordia Community in Meade County. The land was an area of repetitive flood damage, so the County cleared the land and now keeps it in perpetuity

as green space. This action removed twelve homes and several area residents, from an area that was a repetitive hazard and eliminated the potential for future losses there.

Taxation

The Commonwealth of Kentucky empowers local units of government with the ability to levy taxes and impose special assessments. The power of taxation can be used to impact the pattern of development within a community and help fund mitigation programs such as storm water management. As a result of expanding regulations from the Clean Water Act of 1977 and the National Pollutant Discharge Elimination System (NPDES), several of our local units of government have initiated a Storm Water Utility Fee to help fund mitigation projects that reduce losses and infrastructure damage because of flooding and pollution caused by storm water.

Spending

The Kentucky General Assembly has empowered local units of government with the ability to make expenditures in the public interest. The economic impact of natural disasters to each jurisdiction plays a role in spending decisions and annual budgets. Money must be allocated to cover the cost of capital improvement projects that mitigate the effects of natural hazards as well as expenses incurred for snow removal, debris pickup and the manpower necessary to respond to any kind of natural disaster.

Political Arena

While most residents of an area are aware of what natural hazards are prevalent in their locale and the potential impact that such events can have, there is a gap in knowledge regarding mitigation measures that can be initiated to mitigate those harmful impacts. Educating the general populace about mitigation measures and strategies that could potentially decrease or eliminate the adverse effects of any disaster, will be a key factor in the planning efforts of our region.

The devastating effects of recent natural hazard events and the profound impact they have had on the region, will certainly affect the political climate, and put an emphasis on hazard mitigation planning and strategies.

3.4.1.1 Community Capability Assessment

Each of the thirty-five jurisdictions within the Lincoln Trail Region participated in the process of planning and reviewing the 2015 Lincoln Trail Regional Hazard Mitigation Plan Update. To be as thorough and inclusive as possible, each community was asked to complete a “Capability Assessment Worksheet” that evaluated many aspects of community resiliency and preparedness. The areas covered were planning and regulatory, administrative, and technical, financial, and education and outreach. It should be noted that not every category surveyed was applicable to every community. The twenty-seven cities within the region range in size from populations of 118 to 31,394 and have greatly disparate tax bases and amenities. The eight counties range in size from populations of 12,027 to 110,702 and cover areas ranging from 263 square miles to 628

square miles. The table below summarizes the feedback that these 35 communities contributed. Individual jurisdictional responses are on file at the LTADD office.

Table 3.4.1.1.1 - Lincoln Trail Region Capability Assessment Summary		
Planning and Regulatory Assessments		
Plans	Number of Cities	Number of Counties
Comprehensive/Master Plan	15	5
Capital Improvements Plan	2	4
Economic Development Plan	3	4
Local Emergency Operations Plan	27	8
Continuity of Operations Plan	11	7
Transportation Plan	27	8
Storm Water Management Plan	9	4
Community Wildfire Protection Plan	1	2
Other Plans (e.g., brownfields, redevelopment, disaster)	0	0
Building Code, Permitting, and Inspections		
Building Code	9	3
Building Code Effectiveness Grading Schedule Score	2	0
Fire Department ISO Rating	17	4
Site Plan Review Requirements	7	4
Land Use Planning and Ordinances		
Zoning Ordinance	14	4
Subdivision Ordinance	13	4
Floodplain Ordinance	12	4
Natural Hazard (storm water, steep slope, wildfire)	11	2
Flood Insurance Rate Maps (DFIRM)	27	8
Acquisition of Land for Open Space and Public Recreation Areas	7	0
Lincoln Trail Region Capability Assessment Summary		
Administrative and Technical		
Administration	Number of Cities	Number of Counties
Planning Commission	15	5
Mitigation Planning Commission	27	8
Maintenance Programs to Reduce Risk (e.g., tree trimming, clearing drainage systems)	13	7
Mutual Aid Agreements	27	8
Staff		
Chief Building Official	5	4
Floodplain Administrator	10	5
Emergency Manager	27	8
Community Planner	2	2
Civil Engineer	4	1

GIS Coordinator	3	2
Technical		
Warning Systems/Services (Reverse 911, outdoor warning sirens)	27	7
Hazard Data and Information	27	8
Grant Writing	27	8

All Lincoln Trail Region cities and counties have access to services provided by the LTADD. ADD staff write and administer grants for any jurisdiction in need of assistance. Every jurisdiction is included in the Regional Hazard Mitigation Plan, and the process and activities necessary to keep it relevant and informative. That includes access to hazard data, information, and risk assessments. There are regional mutual aid agreements in place that include first response personnel and resources from all jurisdictions, as part of NIMS compliance. All jurisdictions have access to DFIRM maps, GIS/GPS assistance, hazard data information, transportation planning, and community planning help, through the Lincoln Trail Area Develop District as well.

Almost the entire region is covered by an outdoor warning system, and many have enhanced warning systems such as reverse 911 or Code Red.

The Lincoln Trail Region has two joint planning commissions in LaRue County and Nelson County that provide comprehensive land use plans and regulations for both counties, and the five cities within their respective jurisdictions. Hardin, Meade, and Washington Counties have their own planning commissions, as do an additional thirteen cities. All twenty-seven cities are covered by the eight county emergency managers and are included in the EOP of their county. LTADD staff provides land use planning assistance and training on an individual and regional basis. City and County ISO ratings ranged from 4 to 9, with an average of 5.809, as of 2015. The City of West Point is located at the confluence of the Ohio and Salt Rivers and has taken steps to mitigate flood hazards with a *Flood Damage Prevention Plan Ordinance* that requires all new construction to be in compliance with base flood elevations.

Table 3.4.1.1.2 - Lincoln Trail Region Capability Assessment Summary		
Financial		
Funding Resource	Number of Cities	Number of Counties
Capital Improvements Project Funding	9	1
Authority to Levy Taxes for Specific Purposes	0	0
Fees for Water, Sewer, Gas, or Electric Service	19	1
Impact Fees for New Development	1	1
Storm Water Utility Fee	3	0
Incur Debt Through Private Activities	4	0
Incur Debt Through General Obligation Bonds	27	8
Community Development Block Grant	27	8
Other Federal Funding Programs	27	8
State Funding Programs	27	8

All the jurisdictions in the Lincoln Trail Region, apart from Elizabethtown, which receives entitlement funding through HUD, are eligible for Community Development Block Grants as well as other State and Federally funded programs. Many communities would like to enhance their storm water management capabilities and are considering a storm water utility fee as a means for funding those activities and projects.

Table 3.4.1.1.3 - Lincoln Trail Region Capability Assessment Summary		
Education and Outreach		
Programs/Organization	Number of Cities	Number of Counties
Local Citizen Groups or Non-profit Organizations Focused on Environmental Protection, Emergency Preparedness, Access, and Functional Needs Populations, etc.	27	8
Ongoing Public Education or Information Program (e.g., Fire Safety, Household Preparedness, Environmental Education)	27	8
Natural Disaster or Safety Related School Programs	All Cities with Schools	8
Storm Ready Certification	0	1
Firewise Communities Certification	0	0
Public-private Partnership Initiatives Addressing Disaster Related Issues	2	2

All communities throughout the region have access to local citizens groups or non-profit organizations such as the American Red Cross, the Medical Reserve Corps, Local Emergency Planning Committee (LEPC) groups, Amateur Ham Radio Operators, and the Kentuckiana Volunteer Aviators; these groups are available to assist in emergency situations and in response to a natural hazard event.

Every city and county with a school has a safety education program to inform families about safety and preparedness in the event of a natural disaster or fire. A component of these programs is the dissemination of information about natural disasters and individual and family preparedness. Each of these schools conducts fire and severe weather drills each year. In addition, all communities have access to information through LTADD and from websites such as FEMA's.

Planning to make this eight-county region more resilient and prepared, has been incorporated into many projects and regional trainings over the last five years, and during this update process. All communities have received training and information on the importance of proactive land use planning, and the need to avoid development in hazard prone areas. In addition, every city and county has received information on making their existing infrastructure and critical facilities more resilient to the effects of hazard events.

As part of the Lincoln Trail Region's planning process for updating the Lincoln Trail Regional Hazard Mitigation Plan, each of the eight counties was allocated some regional funding to work toward "StormReady" Certification. Those projects are currently under way and will be completed

before the end of 2015. While Hardin County is currently the only “StormReady” certified county, Meade County will be eligible for that certification once their projects are completed. In addition, the National Oceanic and Atmospheric Administration has recognized the Meade County Emergency Management Agency as a “Weather-Ready Nation Ambassador.” Over the last 5 years, this region has made great strides in resiliency and preparedness due to the planning efforts of the Lincoln Trail Hazard Mitigation Committee, and the coordinated efforts of the twenty-seven cities and eight counties.

3.4.1.2 Existing Governmental Structures

The table below briefly outlines the jurisdictions that are included in the Lincoln Trail Regional Hazard Mitigation Plan as well as, the characteristics of each governing body.

Table 3.4.1.2.1 - Lincoln Trail Regional Units of Government		
Jurisdiction	Population 2020 Census	Type of Government
Breckinridge County encompasses 567.17 square miles with a population density of approximately 36.02 people per square mile.		
Breckinridge County	20,432	One County Judge/Executive & Six Fiscal Court Magistrates
City of Cloverport	1,119	One Mayor & Six City Council Members
City of Hardinsburg	1,231	One Mayor & Six City Council Members
City of Irvington	2,385	One Mayor & Six City Council Members
Grayson County encompasses 496.7 square miles with a population density of approximately 53.2 people per square mile.		
Grayson County	26,420	One County Judge/Executive & Six Fiscal Court Magistrates
City of Caneyville	529	One Mayor & Four City Commissioners
City of Clarkson	933	One Mayor & Four City Commissioners
City of Leitchfield	6,404	One Mayor & Six City Council Members
Hardin County encompasses 623.28 square miles with a population density of approximately 177.6 people per square mile.		
Hardin County	110,702	One County Judge/Executive & Eight Fiscal Court Magistrates

City of Elizabethtown	31,394	One Mayor & Six City Council Members
City of Radcliff	23,042	One Mayor & Six City Council Members
City of Sonora	565	One Mayor & Four City Commissioners
City of Upton	704	One Mayor & Four City Commissioners
City of Vine Grove	6,559	One Mayor & Six City Council Members
City of West Point	952	One Mayor & Six City Council Members
LaRue County encompasses 261.52 square miles of land with a population density of approximately 56.8 people per square mile.		
LaRue County	14,867	One County Judge/Executive & Four Fiscal Court Magistrates
City of Hodgenville	3,325	One Mayor & Six City Council Members
Marion County encompasses 343.01 square miles of land with a population density of approximately 57.1 people per square mile.		
Marion County	19,581	One County Judge/Executive & Five Fiscal Court Magistrates
City of Bradfordsville	270	One Mayor & Four City Commissioners
City of Lebanon	6,274	One Mayor & Six City Council Members
City of Loretto	723	One Mayor & Four City Commissioners
City of Raywick	155	One Mayor & Four City Commissioners
Meade County encompasses 305.42 square miles of land with a population density of approximately 98.2 people per square mile.		
Meade County	30,003	One County Judge/Executive & Six Fiscal Court Magistrates
City of Brandenburg	2,894	One Mayor & Six City Council Members

City of Ekron	175	One Mayor & Four City Commissioners
City of Muldraugh	1,040	One Mayor & Six City Council Members
Nelson County encompasses 417.51 square miles of land with a population density of approximately 111.9 people per square mile.		
Nelson County	46,738	One County Judge/Executive & Five Fiscal Court Magistrates
City of Bardstown	13,567	One Mayor & Six City Council Members
City of Bloomfield	961	One Mayor & Six City Council Members
City of Fairfield	118	One Mayor & Four City Commissioners
City of New Haven	798	One Mayor & Four City Commissioners
Washington County encompasses 297.27 square miles of land with a population density of approximately 40.5 people per square mile		
Washington County	12,027	One County Judge/Executive & Six Fiscal Court Magistrates
City of Mackville	222	One Mayor & Four City Commissioners
City of Springfield	2,846	One Mayor & Six City Council Members
City of Willisburg	300	One Mayor & Four City commissioners

3.4.1.3 Local Jurisdiction's "Professional Staff" Assessment

The following table lists the professional staff departments that serve the jurisdictions within the Lincoln Trail Region. It should be noted that police, sheriff, and public safety offices are identified in a separate table. Social services in the region are provided by a regional community mental health system. Every county has a presiding county judge/executive and county clerk, and every city has a mayor and city clerk. Every county also has a PVA and a county board of education. Cities with independent boards of education include: Cloverport, Elizabethtown, and West Point.

Table 3.4.1.3.1 - Local Jurisdiction's– Professional Staff

Jurisdiction	PVA (Tax Assessments)	Road Dept.	Health Dept.	Emergency Management	Building Inspections
Breckinridge Co.	Y	Y	Independent Department	Y	I
Irvington	*	PW	*	*	Y
Cloverport	*	PW	*	*	Y
Hardinsburg +	*	PW	*	*	Y
Grayson Co.	Y	Y	Y	Y	Y
Caneyville	*	*	*	*	*
Clarkson +	*	*	*	*	*
Leitchfield	*	PW	*	*	Y
Hardin Co.	Y	Y	Y	Y	Y
Elizabethtown	*	PW	*	Y	Y
Radcliff +	*	PW	*	Y	*
Sonora	*	*	*	Y	*
Upton	*	*	*	Y	*
Vine Grove	*	I	*	Y	I
West Point	*	PW	*	Y	Y
LaRue Co.	Y	Y	Y	Y	Y
Hodgenville	*	PW	*	*	*
Marion Co.	Y	Y	Y	Y	State Inspector
Bradfordsville	*	No	*	*	*
Loretto	*	PW	*	Y	Y
Lebanon	*	No	*	*	*
Raywick	*	No	*	*	*
Meade Co.	Y	Y	Y	Y	Y
Brandenburg	*	PW	*	*	*
Ekron	*	*	*	*	*
Muldraugh	*	PW	*	*	*
Nelson Co.	Y	Y	Y	Y	Y (2 Inspectors)
Bardstown	*	PW	*	*	Y
Bloomfield	*	PW	*	*	*
Fairfield+	*	*	*	*	*
New Haven	*	PW	*	*	*
Washington Co.	Y	Y	Y	Y	N
Mackville	*	*	*	*	*
Springfield	*	PW	*	*	Y
Willisburg	*	*	*	*	*
(NA – Not Applicable), (* - Covered by County), (Y – Yes), (PW – Public Works)					

The duties and responsibilities of the professional city and county offices are outlined below.

Boards of Education: The Lincoln Trail Region has eight county boards of education and four independent districts. County boards are responsible for evaluating educational goals; providing financial resources for budgeting purposes; involving the public in the planning process; developing and maintaining a statement of mission, vision, and values; and evaluating the effectiveness of school policies and their implementation. All members of a school board are elected to serve by the people of each district.

Building Inspector: A city or county building inspector enforces the State and Local Building Codes, the National Flood Insurance Program, the Community Rating System, and other applicable codes through the process of inspections and permitting.

PVA, City/County Clerk, Sheriff: The Property Valuation Administrator (PVA) is responsible for the valuation of property for tax purposes. A city clerk is hired by the mayor and is responsible for the maintenance and safekeeping of the permanent records of the city and is the official custodian of records under KRS 61.870 to 61.884. Per KRS 83A.085, the city clerk must submit a list of current city information to the Department for Local Government no later than January 31 of each year. The county clerk is elected by the citizens of the county every four years and performs the clerical duties of fiscal court such as issuing, registering, recording, and keeping legal records; registering and purging voter rolls; conducting election duties; and conducting tax duties. A county clerk may serve as clerk of fiscal court. The county sheriff is elected every four years and operates on a budget annually approved by fiscal court. The sheriff is responsible for the collection of real property taxes and enforcement of state and local laws.

City Police: City Police Departments are responsible for the enforcement of local and state laws within their jurisdictions. KRS 95.440 requires cities of the second and third class as well as urban-county government to establish and maintain police and fire departments.

Road Departments: Road Departments are responsible for the repair and maintenance of all public roadways. This responsibility includes snow and debris removal.

Utility Departments: Local utility departments, in conjunction with utility commissions, local units of government and the Kentucky Utility Commission, work in concert to ensure that the entire region has access to safe and reliable water, gas, electric, communication, and sewer services. There could potentially be numerous service providers in any one county.

Emergency Management: Each county emergency management office is responsible for all operations that deal with both natural and man-made disasters. This responsibility extends to mitigation strategies, preparedness, response efforts and recovery operations. Kentucky Revised Statutes mandate that each county establish an emergency management office.

City and County Treasurer: City and County Treasurers are responsible for the oversight and management of either the city or county budget and fiscal programs.

Mayor and County Judge Executive: A mayor or a county judge/executive is elected every four years and is responsible for the oversight of the daily operations of either the city or county government, and the enforcement of city or county policies and regulations. According to the Kentucky Constitution, section 124, and KRS 67.040, a County Judge Executive serves as a member and presiding officer of the fiscal court and acts as the county's chief executive and administrative official.

Health Department/Social Services: In the Lincoln Trail Region, the Lincoln Trail District Health Department and Central Kentucky Community Action agencies provide individuals and communities with programs and services designed to protect public health, provide medical assistance, and administer numerous social service programs.

3.4.1.4 First Responder Resources

First responder resources are critical components of the region's level of resiliency and preparedness. Homeland Security grants have enabled many of the Lincoln Trail Region's local jurisdictions to acquire communication and first responder equipment.

Table 3.4.1.4.1 - Lincoln Trail Region First Responder Resources		
Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Breckinridge Co.	Sheriff, 9 officers & 2 staff Trained volunteer firefighters at, McDaniels, Custer, Webster, Harned County Emergency Mgr.	36 vehicles and 13 portable generators
Irvington	Police Chief and 3 Officers Fire Chief and 26 Trained Volunteer Firefighters	9 Vehicles 7 Pieces of Equipment
Cloverport	Police Chief, police officer Trained Volunteer Firefighters	2 Police Vehicles 4 Fire Vehicles
Hardinsburg +	Police Chief, 4 officers 7 trained volunteer firefighters	36 vehicles and 40 pieces of equipment

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Grayson Co.	Sheriff, 10 Deputies, 1 Process Server 55 Firefighters Emergency Manager and Deputy Emergency Manager	18 Sheriff Vehicles 20 Fire Vehicles
Caneyville	Police Chief Fire Chief, 15 trained volunteers	14 vehicles Utility Trailer 2 Generators Firefighter Gear Extrication Hydraulic Tools
Clarkson	Police Chief Fire Chief and trained volunteer firefighters	15 vehicles
Leitchfield	Police Chief & 18 Officers Fire Chief & 2 trained full-time firefighters, trained volunteer firefighters	20 police vehicles Trailer & generator 12 fire vehicles, 3 boat w/ motor 5 trailer (2 boat trailers, 2 box trailers, and air trailer) 3 generators

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Hardin Co.	<p>Sheriff - 48 Trained Officers 12 Fire Departments - 79 Full-time firefighters, 284 volunteer firefighters EMS - 18 Medics, 20 EMTs, 5 EMT-A's Emergency Management - 1 Director, 1 Deputy Director</p>	<p>Sheriff: 28 2-wheel drive vehicles 7 4-wheel drive vehicles Fire: County wide there are 33 Pumper/Engines, 6 Aerials (including tele squirts), 10 Tankers, 4 Rescue vehicles, 16 Brush Trucks, 4 Command type vehicles. EMS: 10 4-wheel drive ambulance 1 2-wheel drive ambulance 1 4-wheel drive ATV ambulance 3 4-wheel drive Tahoe's Emergency Management 1 4-wheel drive Tahoe 1 4-wheel drive 2500 2 4-wheel drive ATVs</p>
Elizabethtown	<p>59 Firefighters 64 Sworn Police Officers</p>	<p>6 Type I fire engines 2 Type I ladder trucks 3 Type IV Brush Units Hazardous Material and Technical Rescue Equipment housed in quick response trailers 75 Patrol Cars 1 SWAT equipped vehicles</p>
Radcliff +	<p>Radcliff Police Dept. has chief, 41 officers, 1 public relations officer & 11 staff personnel Fire Dept. has chief, 22 full-time pd. Firefighters & 7 volunteers</p>	<p>Radcliff law enforcement has a fleet of response vehicles. The fire dept. has 8 vehicles, 8 generators, a mobile incident command center, portable lighting and assorted equipment and gear.</p>
Sonora	<p>1- Fire Chief 19- Fire Fighters</p>	<p>2- Fire Engines 1- Tanker 1- Brush Truck 1- ATV 1- Command Vehicle</p>
Upton	<p>1- Fire Chief 2- Asst. Fire Chiefs 26- Fire Fighters</p>	<p>1- Tanker 2- Fire Engines 1- Rescue Truck 1- Brush Truck</p>
Vine Grove	<p>Fire: 1- Fire Chief 1- Deputy Fire Chief 2- Fire Capt. 2- Fire Lt. 22- Fire Fighters Police: 1- Chief 1- Police Lt. 1- Police Sgt. 9- Patrolman</p>	<p>Fire: 2- Fire Engines 1- Ladder Truck 1- Tanker 1- Brush Truck 1- Haz Mat Trailer 2- Command Vehicles 4x4 2- 4x4 ATVs Police: 12- 4x4 SUV Patrol vehicles 3- 4x4 ATVs</p>
West Point	<p>2 Police Officers 1 Fire Chief 16 Trained Volunteers Firefighters</p>	<p>4 Police Patrol Vehicles 1 Police ATV 3 Firefighting Vehicles Firefighting Gear and Equipment</p>

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
LaRue Co.	Sheriff and 8 officers, 3 fire departments at 3 locations. 1 ambulance station with 4 ambulances and approximately 6 paramedics and 6 emergency medical technicians staff.	EM/911 Truck Approximately 20 fire apparatus 3 all-terrain utility vehicles 4 ALS equipped ambulances 10 sheriff vehicles
Hodgenville	Police Officers (5 Certified, 1 uncertified) K9 Unit 37 Trained Firefighters	8 Law enforcement vehicles 4 Firefighting vehicles Pontoon

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Marion Co.	Sheriff and 7 Deputies 9 Certified Dispatchers EMS: 14 Paramedics, 16 EMTs, 5 EMT advanced Search and Rescue: 16 Members	Sheriff Dept. Vehicles 4 Ambulances 1 EMS Director Command Truck Search and Rescue: 3 vehicles, 4 boats, mobile command trailer, 1 dive trailer, 1 Kubota RTV Fire: 1 ladder truck, 13 fire engines, brush truck
Bradfordsville	Fire chief & 15 trained volunteer firefighters	Fire tanker and trucks Emergency generator at community center, sewer plant and fire station
Lebanon	Police chief & 17 officers Fire chief & 27 trained volunteer fire fighters	18 law enforcement vehicles Fire fighting vehicles and equipment
Loretto	Fire chief & trained volunteer firefighters	4 – class A pumpers 1 – class A pumper/tanker 2 – utility vehicles
Raywick	NA	NA

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Meade Co.	Sheriff & 12 officers County-wide fire protection with 139 trained volunteer firefighters at 11 stations throughout the county 3 EMS Stations, EM Director and deputy	Sheriff Dept. vehicles Earth moving equipment Water Dist. Trucks Fire District engines 1,000 gpm to 1,750 gpm, tankers, 1 squirt, 2 ladders, brush trucks and assorted firefighting equipment
Brandenburg	Police Chief and 4 Officers	7 Police patrol vehicles 3 Emergency generators Maintenance and road dept. vehicles
Ekron	NA	NA
Muldrough	Police Chief and 2 officers Fire Chief and 11 Certified Volunteer firefighters	4 Police Department Vehicles Fire Department Vehicles- 3 Engine Companies 1 Ladder/elevated master stream 1 Brush unit 3 Mobile diesel generators

Jurisdiction	Personnel Resources	Vehicle and Equipment Resources
Nelson Co.	County Sheriff 2 Sheriff Detectives 29 Sheriff Patrol Deputies EM/EMS Director 2 EMT 2 AEMT 17 Paramedic 128 Firefighters Central E-911 Dispatch Telecommunicators (24)	3 Generators (EMS Station and Senior Citizens Building Law Enforcement & Dispatch) Fire Department Vehicles - 10 tankers, 19 pumpers, 8 brush/rescue, 7 service trucks 9 ALS ambulance 2 EMS response cars 65 Law Enforcement Vehicles
Bardstown	Police Chief and 30 officers Fire Chief, Assistant Chief 18 firefighters and 6 volunteers	37 law enforcement vehicles 3 fire engines 1 ladder truck 1 foam tender 1 service truck 1 hazardous material trailer 1 boa. Backup emergency generators at City Hall, Fire Station, one on John Rowan Blvd., water treatment plant and 2 wastewater treatment plants
Bloomfield	Police chief & 1 officer Fire chief & 5 trained volunteer firefighters	2 law enforcement patrol vehicles 2 fire engines, 1 aerial truck, 2 fire tankers, 2 brush units & 1 support vehicle 2 water trucks, 1 dump truck, 1 portable emergency generator
Fairfield +	NA	NA
New Haven	Police Chief Fire Chief 19 Trained firefighters	1 Law enforcement vehicles 2 Fire truck pumpers 2 Emergency generators Mutual aid rescue equipment

3.4.1.5 Utilities and Services

The following chart outline some of the critical utility and service providers in the eight-county, Lincoln Trail Region.

Table 3.4.1.5.1 - Utility and Service Providers

Breckinridge County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	Big Rivers Electric Corp. Energy Corporation Meade Co. RECC East Kentucky Power Cooperative Nolin RECC	Breckinridge County
Natural/Propane Gas	Atmos Energy Corp. Valley Gas, Inc.	Breckinridge County
Potable Water	Cloverport Water & Sewer System (distribution only) Hardinsburg Water Dept. Irvington Water System (distribution only)	City of Cloverport City of Hardinsburg and Rural Breckinridge Co. City of Irvington
Sewer Service	Cloverport Sewer System Hardinsburg Sewer System Irvington Sewer System USCOE Rough River Lake	City of Cloverport City of Hardinsburg City of Irvington Local Package Plant
Low rent/Section 8 Housing	Housing Authority of Irvington Weatherholt Hills Apartments	City of Irvington City of Cloverport
Local Exchange Carriers	Brandenburg Telecom, LLC AT&T Kentucky	Breckinridge County

Grayson County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	Big Rivers Electric Corp. Meade Co. RECC East Kentucky Power Cooperative Farmers RECC Kentucky Utilities (a PPL company) Tennessee Valley Authority Warren RECC	Grayson County
Natural/Propane Gas	Leitchfield Utilities	City of Leitchfield
Potable Water	Caneyville Water & Sewer System (distribution only) Grayson Co. Water District Leitchfield Utilities	City of Caneyville Grayson County City of Leitchfield

Sewer Service	Caneyville Sewer System Clarkson Sewer System Leitchfield Utilities Commission Rough River Dam State Resort Park (pkg. plant)	City of Caneyville City of Clarkson City of Leitchfield Falls of the Rough
Low rent/Section 8 Housing	NA	
Local Exchange Carriers	Windstream Ky East Comcast Ky Telephone (internet only) Brandenburg Telephone	Grayson County Leitchfield Leitchfield Leitchfield
Hardin County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	Big Rivers Electric Corp. Meade Co. RECC East Kentucky Power Cooperative Nolin RECC Kentucky Utilities (a PPL company) Louisville Gas & Electric (a PPL company)	Hardin County
Natural/Propane Gas	Elizabethtown Water & Gas (distribution only) Louisville Gas & Electric (a PPL company)	City of Elizabethtown Hardin County
Potable Water	Hardin Co. Water Dist. #1 (Fort Knox) Hardin Co. Water Dist. #1 Hardin Co. Water Dist. #2 Vine Grove Water Dept. (distribution only) West Point Water Dept.	Fort Knox City of Radcliff, Northern Hardin County City of Elizabethtown Southern Hardin County City of Vine Grove City of West Point
Sewer Service	Airview Estates Subdivision (pkg. plant) East Hardin Middle School (Package plant) Elizabethtown Wastewater System Glendale Auto Truck Plaza (Package plant)	Airview Estates Subdivision School in Glendale City of Elizabethtown Truck Plaza in Glendale City of Radcliff

	Hardin Co. Water Dist. #1 Radcliff Sewer System Hardin Co. Water Dist., #2 Heartland Mobile Home Community (pkg. plant) Lincoln Trail Elementary School (pkg. plant) Sonora Auto Truck Plaza (pkg. plant) US Army Hardin Co. Water Dist. #1 Vine Grove Sewer System West Point Sewer System Petro Stopping Centers (pkg. plant)	Hardin County Mobile Home Community in Rineyville Lincoln Trail Elementary School Truck Plaza in Sonora City of Radcliff City of Vine Grove City of West Point Petro in Glendale
Low rent/Section 8 Housing	Housing Authority of Elizabethtown Housing Authority of Radcliff	City of Elizabethtown City of Radcliff
Local Exchange Carriers	Brandenburg Telecom, LLC AT&T Kentucky	Hardin County

LaRue County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	East Kentucky Power Cooperative Farmers RECC Inter-County Energy Cooperative Nolin RECC Salt River Electric Cooperative Corp. Kentucky Utilities (a PPL company)	LaRue County
Natural/Propane Gas	Louisville Gas & Electric (a PPL company)	LaRue County

Potable Water	Hodgenville Water Works LaRue Co. Water District #1(distribution only)	City of Hodgenville LaRue County
Sewer Service	Hodgenville Sewer System	City of Hodgenville
Low rent/Section 8 Housing	Housing Authority of Hodgenville	City of Hodgenville
Local Exchange Carriers	Windstream Kentucky East South Central Rural Telephone Comcast	LaRue County

Marion County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	East Kentucky Power Cooperative Inter-County Energy Cooperative Salt River Electric Cooperative, Corp. Taylor County RECC Kentucky Utilities (a PPL company)	Marion County
Natural/Propane Gas	Atmos Energy Corporation Louisville Gas & Electric (a PPL company)	Marion County
Potable Water	Lebanon Water Works Co., Inc. Marion County Water Dist. (distribution only)	City of Lebanon Rural Marion County

Sewer Service	Bradfordsville Sewer System	City of Bradfordsville
	Lebanon Sewer System	City of Lebanon
	Loretto Wastewater System (collection only)	City of Loretto
Low rent/Section 8 Housing	Housing Authority of Lebanon	City of Lebanon
Local Exchange Carriers	Windstream Kentucky East Windstream Spectrum	Marion County
Meade County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	Big Rivers Electric Coop Meade Co. RECC East KY Power Coop Nolin RECC Louisville Gas & Electric (a PPL company)	Meade County
Natural/Propane Gas	Louisville Gas & Electric (a PPL company)	Meade County
Potable Water	Brandenburg Water Works Doe Valley Utilities, Inc. Meade Co. Water District Muldraugh Water Dept. (distribution only)	City of Brandenburg Doe Valley Development Rural Meade County City of Muldraugh
Sewer Service	Brandenburg Sewer System Doe Valley Assoc., Inc. (pkg. plant) Muldraugh Sewer System (collection only)	City of Brandenburg Doe Valley Association City of Muldraugh
Low rent/Section 8 Housing	NA	NA
Local Exchange Carriers	Brandenburg Telecom, LLC AT&T Kentucky	Meade County

Nelson County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	East KY Power Coop Inter-County Energy Coop Salt River Electric Coop Corp. Kentucky Utilities (a PPL company) Bardstown Municipal Electric & Gas	Nelson County
Natural/Propane Gas	Louisville Gas & Electric (a PPL company)	Nelson County
Potable Water	Bardstown Municipal Water Department Bloomfield Water & Sewer Department (distribution only) New Haven Municipal Water Works (distribution only) North Nelson Water Dist. (distribution only)	Bardstown & adjacent area Bloomfield & Northeastern Nelson Co. City of New Haven & adjacent areas Northern Nelson County

Sewer Service	Abbey of Gethsemani (pkg. plant) Bardstown Sewer System Cox's Creek Elementary School New Haven Sewer System	Abbey at Gethsemani City of Bardstown Cox's Creek City of New Haven
Low rent/Section 8 Housing	Housing Authority of Bardstown	City of Bardstown
Local Exchange Carriers	Brandenburg Telecom, LLC. AT&T Kentucky Bellsouth	Nelson County New Haven

Washington County		
Utility or Service	Utility or Service Provider	Area Served
Electricity	East KY Power Coop Blue Grass Energy Coop Corp. Inter-County Energy Coop Salt River Electric Coop Corp. Kentucky Utilities (a PPL company)	Washington County

Natural/Propane Gas	Atmos Energy Corporation Louisville Gas & Electric (a PPL company)	Washington County
Potable Water	Springfield Water & Sewer Commission	Springfield and Washington County
Sewer Service	Springfield Water & Sewer Commission Washington County Elementary School (pkg. plant)	City of Springfield School in Willisburg
Low rent/Section 8 Housing	Housing Authority of Springfield	City of Springfield
Local Exchange Carriers	AT&T Kentucky	Washington County

Findings Summary: The mission statement of the Lincoln Trail Hazard Mitigation Committee (LTHMC) is: *To Reduce or Eliminate the Negative Physical and Economic Impacts Natural Hazards have on our communities.* All jurisdictions desire to accomplish this mission, but disparate resources hinder this effort. The capabilities assessment contained within this document would appear to indicate relative equality across all eight counties. However, each county is unique, with populations that range from more than 110,000 people to less than 13,000, and land mass areas ranging from 300 square miles to 600. Financial disparity is also prevalent due to each county's size and tax base. Many of our counties rely solely on volunteer first responders, while others can afford full-time, paid personnel, in addition to volunteer responders.

Kentucky Emergency Management's goal is to coordinate a system of mitigation, preparedness, response, and recovery actions that protect the lives, environment, and property of the people of Kentucky. Toward that end, Kentucky Emergency Management requires each county to prepare and update a countywide Emergency Operations Plan (EOP). Each county EOP enumerates policies and provisions for a coordinated local, state, and federal emergency response to any natural, technological, or manmade emergency or disaster. Each county EOP details preparedness activities for each local government, prior to a disaster. These preparedness actions include, but are not limited to, the selection and training of staff and emergency response personnel, development of operation plans, equipping an emergency operations center (EOC), and the establishment of procedures that will effectively prepare the area to respond to emergencies and disasters. These county plans and the extensive coordination requirements they contain, ensure that the aftermath of any natural or manmade disaster will be minimized. These planning efforts will minimize the length of power outages, expedite efforts to keep roads open, and reduce the amount of time and number of residents who may be displaced from their homes.

In contrast to county emergency operations plans, the Regional Hazard and Flood Mitigation Plan is designed to define activities that local units of government can take to decrease, eliminate, or diffuse their vulnerability to disasters prior to an actual disaster event.

The LTHMC has worked with local units of government in the Lincoln Trail Region, during the planning phase of this plan update, to inventory completed mitigation projects, report on current actions and develop future activities that will minimize community vulnerability across the region

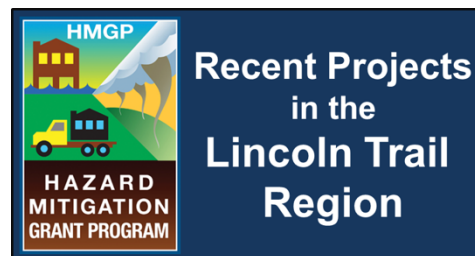
and decrease adverse impacts that may occur because of any future disaster. The Lincoln Trail Hazard and Flood Mitigation Plan Update will contain goals and objectives that pertain to the entire region, are county specific, and address single issues within individual cities. The plan exemplifies a planning effort that is pro-active in addressing actions that will effectively mitigate future natural hazards, as well as a documentation of mitigation initiatives that have solved some past vulnerability issues. To date, the region has accomplished several successful mitigation projects, some are still in progress and others are planned when sufficient funding can be secured.

3.4.1.6 Lincoln Trail Region Community Hazard Mitigation Projects

The hazard mitigation projects in the Lincoln Trail Region, fall into three categories:

1. Projects Completed
2. Projects Presently Underway
3. Future Projects

The Region has planned for projects that will mitigate loss of property and human life and eliminate repetitive losses when possible. The region has used local funds, State funding, FEMA funding, CDBG Funds, and Homeland Security funding to accomplish these projects.



3.4.1.6.1 Completed Projects (1997 through 2021)

Breckinridge County

County

Flood Mitigation: Two bridges in the County located on Marks Ridge Road West (CR-1520) and Shot Pouch Creek Road (CR-1405) were replaced to mitigate flooding issues that previously closed the roads and stranded local residents in their homes or prevented farmers from reaching their fields and livestock.

Landslide Mitigation: The County has purchased additional land to move Tar Springs Rd. The road had a landslide problem and was sliding downhill. This project has eliminated the hazard.

Emergency Operations: The county has completed purchases to update the emergency operations center.

Cloverport

Flood Mitigation: Three Ohio Riverfront properties were acquired and relocated to different sites. Land was converted to recreational use in perpetuity.

Slope Stabilization: Bank stabilization measures were taken to prevent damage to a housing complex for the elderly.

Irvington

Early Warning System: The City purchased and installed two new early warning sirens to enhance its public warning system.

Grayson County

County

Flood Mitigation: Grayson County built 3 new bridges to mitigate road flooding that stranded county citizens and prevented emergency response efforts from reaching them.

Public Safety: Purchased communication equipment for use among first responders

Caneyville

Early Warning System: The City joined the County's "One Call" service.

Public Safety: Caneyville subscribed to a service that would provide an emergency generator, laptop computer and communication system to the city, in the event of a power outage. This will enable continuity of operations.

Leitchfield

Public Safety: The City purchased an emergency generator for the water treatment plant. Potable water can be supplied to residents even during a power outage.

Public Safety: City Hall and Police Department now jointly use existing Police Department Generator

Hardin County

County

Early Warning System: Hardin County enhanced its public early warning system by purchasing and installing an outdoor siren in the unincorporated community of Stephensburg. The County also implemented a reverse 911 early warning system, countywide.

Mobile Command Post has been upgraded with new Digital radios, computer equipment, Amateur Radio, new antennas, and completely reconfigured.

Hardin County's Emergency Radio transmission system had a 2 million dollar upgraded, to a Digital Simulcast 6 tower system.

Elizabethtown

Early Warning System: Hardin County initiated a study to determine the placement of 16 audible warning sirens in Elizabethtown and the surrounding area. The project provided an early warning system where there had been none. The city also replaced 7 aging, outdoor sirens.

Flood Mitigation: The City purchased 3 repetitive loss properties to eliminate future flooding issues. Land was preserved as green space and a storm water retention basin. The City also mitigated flood issues by replacing a bridge on East Poplar St. to facilitate floodwater flow.

Public Safety: Elizabethtown would like to make upgrades to the Pritchard Community Center that serves as the area's long-term shelter for people displaced by local disasters.

Sonora

Public Safety: Completion of a new Fire Department Building

Upton

Early Warning System: Upton purchased and installed an outdoor siren.

Vine Grove

Public Safety: The Community Safe Room was completed in 2006

Flood Mitigation: The City repaired the banks of a creek to eliminate road flooding. Vine Grove also replaced sewer lines lying within a waterway to eliminate the potential for sewage to spill into storm water runoff.

West Point

Flood Mitigation: Repetitive loss properties were acquired, and their respective structures demolished. Land was preserved as community green space. Four houses, two mobile home parks and three vacant lots were purchased. The City also relocated 5 lift station electrical panels from a floodway to higher points and initiated a local storm water fee to fund future flood mitigation projects.

Public Safety: The City purchased an emergency generator for the wastewater treatment plant so that service could continue in the event of a power outage.

Flood Mitigation: Sewer Project to help with storm water infiltration.

LaRue County

County

Public Safety: The County purchased an emergency generator for both the County Courthouse and Hodgenville City Hall to ensure that critical services can be provided in the event of a power outage.

Early Warning System: Implemented RAVE public warning system.

Public Safety: Upgraded 911 computer hardware system.

Hodgenville

Public Safety: Emergency generators were purchased for the water plant and sewer plants.

Flood Mitigation: Storm water management improvements completed to address flooding issues on 3 city streets

Marion County

County

Flood Mitigation: The County built a replacement bridge over Scuffle Creek that frequently flooded and cut off access to 32 residences and farms.

Early Warning System: The county has conducted a campaign to re-initiate the CodeRED emergency alert system.

Bradfordsville

Public Safety: The City completed a safe room to serve the entire community. Signage was also installed to identify and locate the facility.

Early Warning System: An outdoor siren was installed in the city and weather radios were distributed to the elderly, disabled and rural residents.

Lebanon

Flood Mitigation: A storm water management project was completed to mitigate flooding in the Derring Ct. neighborhood. Three hundred feet of an existing storm drainage channel was relocated, improved, and straightened to mitigate repetitive flooding issues. Additional repairs were made to a storm water channel that was causing local flooding.

Meade County

County

Public Safety: Meade County purchased and equipped a mobile trailer to use wherever a long-term shelter needs to be established for displaced persons. The trailer carries supplies for a 100-person shelter.

Flood Mitigation: Meade County acquired land in the unincorporated community of Concordia to mitigate repetitive flood damage. Ten residential housing units and the land on which they were built was acquired. Structures were demolished and the land preserved as green space in perpetuity.

Public Safety: Purchased an 8,500-kw generator for emergency operations center

Flood Mitigation: Purchased 3 rain gauges

Public safety: The county constructed a new dispatch center/emergency operations center

Muldraugh

Public Safety: Muldraugh built Kentucky's largest, above ground safe room to mitigate loss of life and injury to the community's entire population. The facility can also serve as a long-term shelter for displaced residents.

Public Safety: The city also purchased a used decontamination trailer for use in the event of a hazardous material incident.

Public Safety: A generator was purchased for City Hall.

Nelson County

County

Public Safety: County purchased emergency backup generators for the County EOC, the 911 center and law enforcement facilities.

Flood Mitigation: Improvements made at the county landfill to address flooding issues.

Early Warning System: Addition of SMART 911 County wide alert system, 14 alert sirens distributed across the county, schools' system reverse 911-system, emergency responders active 911 – IamResponding Service

Bardstown

Public Safety: Bardstown relocated and buried power lines in an area that served 120 residences and 10 commercial facilities to eliminate power outages due to severe weather events.

Bloomfield

Public Safety: Bloomfield wired a smaller lift station to accept an emergency portable generator.

Flood Mitigation: The City completed storm drain and sewer improvement projects to mitigate flooding issues.

Public Safety: Purchase of a generator for city hall in the event of a power outage

Washington County

County

Public Safety: Washington County completed an emergency notification system for the County.

Flood Mitigation: The County completed the following bridge projects to mitigate flooding issues: Tick Creek, Walker Lane, Froman Lane, Grundy Home Road, Tatum Ridge Road, Roye Lane, and Willis Lane.

Bank Stabilizations: Washington County completed bank stabilization projects on Sulphur Lick Road, Glenns Creek Road, Coulter Lane, Hardesty Road, Trent Lane, Gregory Lane, and Hardesty Road.

Public Safety: Purchase of Emergency Generator

Bridge Replacement/Flood Mitigation:

- Grundy Home Road bridge
- Osborne Road bridge
- Mayfield Lane bridge
- Cardwell-Tablow Road bank slide
- Hardesty Road bank slide
- Johnson Road bridge
- Seibert Creek Road bridge
- Glenns Creek Road bridge
- Mackville Texas bridge
- Spaulding Lane bridge 1
- Spaulding Lane bridge 2
- Hayes Lane Culvert
- Wesley Miller Lane bridge

Fredericktown Community

Flood Mitigation: Washington County acquired land in the unincorporated community of Fredericktown to mitigate repetitive flood losses. Twelve structures were either purchased and demolished, or elevated, depending on the preference of owners, to mitigate flood damage.

Mackville

Public Safety: The City has installed an emergency generator at the fire department and has set up a safe room at the local community center. Mackville also installed a siren to notify residents of potential bad weather.

3.4.1.6.2 Projects Presently Underway

Grayson County

County

Public Safety: The County Emergency Operations Center to be used in a disaster response situation. Also purchasing weather radios for distribution to all County critical facilities.

Advanced Warning: The county is updating outdoor warning sirens.

Caneyville

Flood Mitigation: Replacing oldest water lines in the city due to line breaks

Hardin County

Elizabethtown

Public Safety: Researching a fixed generator for the Pritchard Community Center to complete the original project. Exploring options for an overflow or auxiliary shelter.

LaRue County

Hodgenville

Public Safety: Water Meter Project

Public Safety: Wastewater Plant Upgrade Project

Marion County

County

Public Safety: Applying for grant money to upgrade emergency operation radio equipment.

Nelson County

County

Early Warning System: Replacing seven aged alert system sirens throughout the county.

Washington County

Springfield

Flood Mitigation: Springfield would like to install approximately 1,800 linear feet of a storm water management system to eliminate flooding issues in the Riser Ave. neighborhood.

Estimated cost = \$225,000

3.4.1.6.3 Future Projects (Pending Funding)

Breckinridge County

County

Flood Mitigation: Breckinridge County would like to raise a bridge on Tar Springs Rd. that regularly floods, making six family residences inaccessible during high water. Estimated cost = \$400,000

Flood Mitigation: The County would like to raise the roadbed of the Stonehill-Ford Rd. approximately 4 feet on both sides and install new drainage tiles to eliminate reoccurring flooding. This is a moderately traveled, connecting road; it is completely blocked during times of flooding. Estimated cost = \$150,000

Public Safety: The County has radio repeaters located on a water tower on Highway 259 in Harned. During a power outage, the repeaters are down and communication capability for EMS, EMA and fire departments is compromised. An on-site generator would resolve this issue. Estimated cost = \$8,400

Public Safety: The County needs to purchase a portable emergency generator capable of providing backup electricity to a public housing complex during a power outage. Estimated cost = \$30,000

Flood Mitigation: Cook Ridge Road off Highway 261 floods during heavy rain, making it impassable. The county would like to install a box culvert in the road to divert water. Estimated cost = \$200,000

Cloverport

Flood Mitigation: Verden Street in Cloverport often floods near the railroad track, the city would like to install a culvert in the road.

Advanced Warning: The city's emergency warning sirens appear to be not working and need to be fixed or replaced.

Public Safety: The city would like to construct a community safe room or convert another city building into an emergency community safe room.

Public Safety: The city would like to expand the range of emergency service's radio signal.

Flood Mitigation: The city would like to work on ditches in the community to better withstand high volumes of water.

Hardinsburg

Public Safety: Hardinsburg would like to construct a community safe room that could also serve as an alternate emergency operations center. Estimated cost = \$2 million

Public Safety: The city would like to purchase and install 3 new outdoor warning sirens.
Estimated cost = \$90,000

Public Safety: Purchase and install permanent generators for the water and sewer plant.
Estimated cost = \$100,000 each

Flood Mitigation: Hardinsburg wants in install culverts to mitigate flooding issues. Estimated cost = \$40,000 each

Grayson County

County

Public Safety: Grayson County would like to construct safe rooms throughout the County. They would also like to install an outdoor siren system and purchase emergency generators to maintain critical public services during a widespread power outage. Estimated cost = \$180,500 (generators), \$2 million (safe room)

Caneyville

Public Safety: Caneyville would like to construct a FEMA compliant safe room and purchase emergency generators for city facilities such as city hall, fire dept., sewer plant, lift stations and the community center. Estimated cost = \$166,500 (generators), \$1.2 million (safe room)

Flood Mitigation: Caneyville would like to dredge out the creek that flows through town and often floods the area. Estimated cost = \$200,000

Clarkson

Public Safety: Want to construct a Clarkson Fire Department substation on 1.57 acres of land approximately 6 miles outside the Clarkson city limits, but still within the Clarkson Fire Department Fire Protection District that was recently donated.

Leitchfield

Public Safety: Leitchfield would like to purchase a generator for City Hall so that critical public services can be provided in the event of a power outage. The city would also like to construct a community safe room and install outdoor warning sirens on the south and west sides of town. Estimated cost = \$40,000 (generator), \$1.2 million (safe room), \$6,000 (2 outdoor sirens)

Flood Mitigation: The stormwater drainage ditch through the northeast portion of the city is 30 years old and the walls and support are deteriorated and in need of repair.

Hardin County

County

Public Safety: The county wants to stabilize the toe of the slope by adding Riprap, Gabion Baskets, or some other approved method to the bank of Youngers Creek to prevent any further damage to Miller Road and reconstruct a portion of the shoulder that has eroded.

Flood Mitigation: The county would like to conduct drainage improvements to the sinkhole/cave that causes flooding on Boone Road at Trooper Hill through injection wells or other approved options. Estimated cost: \$25,000

Elizabethtown

Early Warning System: It would also like to upgrade its current outdoor warning sirens and purchase.

Public Safety: 6 portable generators for use at critical facilities in the event of a power outage. Estimated cost, \$360,00 (warning sirens), \$180,00 (Generators).

Flood Mitigation: The city would like to purchase properties in the city that frequently flood, including:

- Foxborough Estates neighborhood
- Henon Lane
- Willow Creek neighborhood
- Shepherd Hills neighborhood
- Osage Court & Clover Lane area
- Properties identified in the Stormwater Master Plan update to be completed in 2022

Public Safety: The city would like to expand the training capabilities of the fire department's facilities.

Flood Mitigation: Make Street improvements to drainage structure under Peterson Drive at Billy Creek adjacent to City Park (Carroll Soccer Complex)

Flood Mitigation: Improve storage capacity at Valley Creek Reservoirs to assist in flood control at Valley Creek # 3 (Trooper Lake) and Valley Creek # 8 (Fisherman Lake)

Public Safety: Purchase Truck with snowplow and salt spreader

Public Safety: Purchase Truck for leaf and brush pick-up

Public Safety: Purchase portable/pull-behind limb grinder

Sonora

Public Safety: 100 KW Generator, Safety Switch, and wiring needed to run Sonora Fire Station, and use it as a Shelter for storms. Cost of \$40,000.00

Upton

Public Safety: 50 KW Generator needed to power shelter at Upton Community Center

Vine Grove

Public Safety: Generators, Safety Switches and wiring for City Hall, Police Department, Fire Department, and Sewer Plant. Estimated Cost of \$200,000.00

Public Safety: Generators, Safety Switches, and wiring for 8 sewer lift stations. Estimated cost of \$75,000.00

Public safety: The fire department would like to expand its facility for firefighter housing and enhanced training capabilities.

West Point

Flood Mitigation: Would like to expand retention pond on 6th street that will require a buyout of 25 homes.

Flood Mitigation: 14th-15th Street drainage project to continue to Main Street

Flood Mitigation: West Point has two flood mitigation projects they wish to complete. The City would like to complete a storm water management project in the Riverview Dr. neighborhood to eliminate flooding issues there. Estimated cost = \$100,000

Flood Mitigation: The city would like to conduct project scoping to expand on the current list of flood mitigation projects

LaRue County

County

Advance Warning: In conjunction with the city of Hodgenville, the county would like to purchase and install approximately 10 tornado/advance warning sirens for the county, including in Buffalo, Magnolia, and Hodgenville

Flood Mitigation: The county wishes to elevate Blanton Road at the intersection of US31E, the intersection of Brooks Road and Hog Way, and Highway 222 near Nolan River Church to prevent flooding during heavy rains and standing ice during winter weather.

Marion County

County

Public Safety: Seek storm ready status.

Public Safety: Develop new Continuity of operations plan, Continuity of government plan, Volunteer management plan for disaster response, and a flood plan.

Bradfordsville

Flood Mitigation: Bradfordsville needs to overhaul its storm water management system to eliminate flooding in homes, businesses, and civic facilities and to eliminate the need to close roads due to standing water. Estimated cost = \$350,000

Flood Mitigation: The city would like to complete a study with the help of the Army Core of Engineers to better understand how the river floods them.

Flood Mitigation: The city would like to update flood maps for their community

Flood Mitigation: The city would like to pass an ordinance on approving new flood maps

Public Safety: The city would like to purchase and install a generator for the sewer treatment plant

Lebanon

Public Safety: Upgrade critical equipment at plant

Raywick

Public Safety: The city would like to purchase a generator to use at the community center in the event of a disaster

Meade County

County

Flood Mitigation: The county would like to fund a project scoping study for the Wolf Creek area of the county

Brandenburg

Flood Mitigation: Brandenburg would like to complete a project to stabilize the bank of the Ohio River to eliminate flooding issues that affects critical water wells and localized flooding. Estimated cost = \$1.2 million

Ekron

Public Safety: Ekron would like to construct a centrally located safe room that would provide all area residents with a safe shelter from any kind of severe weather event. The facility would be within a 5-minute walk for the entire community. Estimated cost = \$1 million

Muldraugh

Early Warning System: The City would also like to upgrade its outdoor weather siren system. Estimated cost = \$6,800 (sirens)

Public Safety: Would like to purchase and install a 100-kw natural gas backup generator at the main wastewater pumping station, plus switch gear, wiring, and natural gas piping. Estimated cost \$75,000

Flood Mitigation: Work on 5,200 feet of stormwater management culvert to reduce flash flooding hazards. Estimated cost \$650,000

Flood Mitigation: Cleaning and lining of class IV injection wells, within the city for stormwater removal. Estimated cost \$100,000.

Public Safety: Upgrading of police and fire department communication equipment in all vehicles and all portable handhelds to include radio, antennas, and coax cable in mobile units and portable handhelds, lapel mics, chargers, extra batteries. Estimated cost \$100,000

Nelson County

County

Public Safety: Pending 2020 emergency operations generator project from HMGP Grant DR-4428-KY-2020

Public Safety: Renovation of C.O.B.E.C building into the emergency operations center

Bardstown

Public Safety: Bardstown would like to purchase and install an emergency backup generator for the City's sewer pump station. They would also like to construct an emergency road that would allow access to the Town Creek Wastewater Treatment Plant in the event of flooding. Estimated cost = \$94,000 (generator), \$20,000 (road)

Flood Mitigation: The City wants to construct a watershed detention pond to prevent downstream flooding. Estimated cost = \$200,000

Bloomfield

Public Safety: Bloomfield would like to purchase 2 emergency generators to provide backup power to the water department in the event of a power outage. Estimated cost = \$30,000

Flood Mitigation: The City would like to raise the Perry Street Bridge and install larger culverts to mitigate flooding that closes the road. Estimated cost = \$250,000

Fairfield

Public Safety: Fairfield would like to purchase two emergency backup generators for use at the sites designated by the city to serve as emergency shelters. Estimated cost = \$3,500

New Haven

Public Safety: New Haven would like to complete a continuity of operations plans for emergency operations

Flood Mitigation: The city would like to complete and coordinate a river clean up on the Rolling Fork River, removing litter and debris to prevent flooding caused by the debris

Public Safety: The city would like to purchase a boat for emergency services to use in the event of emergency water operations

Public Safety: The city would like to purchase a portable generator to take to city facilities as needed during power outages

Flood Mitigation: New Haven would like the FEMA flood plain status reviewed and updated

Washington County

County

Flood Mitigation: Raise Booker Road 7 ft in front of bridge (approx. 700ft section) and add a box culvert to stop roadway from flooding.

Flood Mitigation: Build up road on back end of Fenwick Lane to prevent road from slipping downhill (approx. 500 ft).

Mackville

Public Safety: The city would like to purchase a portable generator.

Springfield

Flood Mitigation: The City would also like to complete a 400-foot storm water management project in the Maplewood Ave. neighborhood to address flooding issues. Estimated cost = \$8,000

Flood Mitigation: The Lebanon Hill neighborhood needs a storm water management system to address flooding issues. Estimated cost = \$90,000

Flood Mitigation: Springfield would also like to completely replace the downtown Main St. storm water management system to improve capacity and eliminate flooding. Estimated cost = \$350,000

Flood Mitigation: The Grundy Ave. neighborhood experiences flooding that could be eliminated by a proper storm water management system. Estimated cost = \$175,000

Flood Mitigation: Springfield plans to complete a large flood mitigation project within a Zone A flood area in the city. Part of the project would be the construction of a large storm water management system and part of the plan would be the acquisition and demolition of residences that have suffered repetitive flood losses. Estimated cost = \$250,000 (Storm water system), \$315,000 (acquisition activities)

Flood Mitigation: The city needs to reconstruct a low water bridge that isolates the public works garage due to flooding. Estimated cost = \$190,000

Public Safety: Springfield has a plan to purchase a backup generator system that would provide emergency power to its storm shelter, city hall and public works garage. Estimated cost = \$75,000

Public Safety: The city would install a “One Call System” as an enhancement of its current 911 program. Estimated cost = \$40,000

Public Safety: A plan to bury utility lines in the downtown business district would diminish the propensity for power outages and enable local businesses to continue to serve the community during severe weather events. Estimated cost = \$750,000

Flood Mitigation: West High Street water mitigation project to redirect runoff to not affect flooding on homes. Estimated cost = \$450,000

Willisburg

Public Safety: The city would like to purchase 2 generators and all associated wiring for the city's community centers.

3.4.2 Lincoln Trail Regional Hazard Mitigation Goals

The goals and objectives of the Lincoln Trail Regional Hazard Mitigation Plan evolved because of serious discussion, planning and careful thought among the eight counties and twenty-seven cities in the region. Local units of government, planning organizations, emergency management teams, concerned residents and first response agencies collected and analyzed hazard data relevant to the region and closely examined local levels of resiliency and preparedness. The planning process included training, review of past efforts, data analysis, and careful consideration of the region's vulnerability. Local funding was utilized to enable each county to improve its level of resiliency and preparedness through criteria established in the National Weather Service "StormReady" program. Projects completed included establishment of county emergency operations centers, "Code Red" early warning systems and the purchase of emergency power generators for emergency management. Funding was also used to improve citizen preparedness; weather radios, designed for use by people with hearing or sight impairments, were distributed to vulnerable populations throughout the eight-county region. The following goals and objectives have been part of the region's plan since the plan was first written but have been edited and expanded to reflect increased awareness of potential hazards.

Representatives from the region developed the mitigation goals and objectives based on the review and evaluation of research data and local vulnerability. While mitigation goals throughout the state and nation closely parallel those of this region, the goals, objectives, and action plans in this regional plan are specific to the Lincoln Trail ADD geographic location and population demographics.

Six mitigation strategies have been addressed previously, however, evaluation of those strategies led to consolidation of strategies into four, with emergency services and structural projects incorporated into four main strategies, which were used to develop goals and objectives. The four basic components of the mitigation plan goals are:

1. Prevention: Local governmental, regulatory, or planning actions and/or processes that regulate land use, development standards, the integrity of built structures, and allocation of local funds. This strategy controls public and private activity that can reduce or eliminate losses due to regional hazards.

Examples include, but are not limited to:

- Planning and Zoning
- Building Codes
- Land Use Controls
- Medium and Long-Range Planning
- Capital Improvement Programs

- Preservation/Protection of Open Spaces, Fragile Ecosystems and Local Geographic Features
- Storm Water Management
- Routine Inspection, Maintenance, and Repair of Infrastructure

2. Protection of Life and Property: Local governmental and agency actions that plan for, fund, and execute activities that protect human life and prevent the loss of property. Examples include:

- Acquisition
- Elevation
- Relocation
- Structural Retrofits
- Construction of Mitigation Projects
- Safe Rooms
- Inspection, Repair and Maintenance of All Infrastructure
- Flood Control Projects
- Emergency Power
- Continuity of Operations
- Public Warning Systems
- Emergency Response Services and Facilities
- Evacuation Plans

3. Public Education and Awareness: Local units of government can prepare and plan for hazard mitigation, but, ultimately, personal responsibility plays a key role in hazard mitigation and community resiliency. Educating the public, from a very early age, about disaster preparedness is a key component of this regional plan and an integral part of community resiliency. Information must be disseminated to all citizens on hazard mitigation and include:

- Real Estate Disclosure Statements
- Land Use Information
- Personal Preparedness and Responsibility
- Education on Hazards
- Child and Adult Education Programs and Classes
- Community Outreach Efforts
- National Flood Insurance Program

4. Protection of Natural Resources and Geographic Features: Actions taken to preserve natural resources, systems and geographic features ultimately serve to also mitigate hazards. These actions include:

- Sediment and Erosion control
- Stream and Corridor Restoration
- Protection of Sink Holes and Karst Topography
- Watershed Management
- Forest and Vegetation Management
- Conservation Efforts

- Wetlands Preservation
- Conservation of Riparian Forest Buffers

Regional Problem Statements, Goals and Objectives

In order to identify regional goals and effective action plans in the form of objectives, regional representatives identified problem statements. The problem statements illustrate regional challenges that face all the local jurisdictions. Without exception, the problems, goals, and objectives are generally applicable to the entire Lincoln Trail Region and could easily address some aspect of all hazards experienced in the area. Potential funding for each action is fluid and includes HMPG, CDBG, Homeland Security, ADF, AFG, and local funds and fees. The people responsible for implementing each action come from each unit of government and its first response agencies, as well as the Lincoln Trail Area Development District. The Lincoln Trail ADD Board of Directors and Hazard Mitigation Committee is made up of the eight County Judge Executives and Mayors from the counties' respective cities.

Problem Statements and corresponding goals and objectives were identified during the planning, review, and research stages of the Regional Hazard Mitigation Plan Update. The goals are basically unchanged, but rapidly improving technology has made data research and gathering more comprehensive.

Problem Statement 1: During the research and review process of the plan update, comprehensive and exact data for the specific Lincoln Trail region was difficult to find. Regional representatives did not believe that the level of hazard data available and the corresponding estimates of damage and losses were accurate.

Goal 1: The Region's first goal and corresponding objectives and action items remain in the plan with some minor modifications. The goal and objectives are generally applicable across the entire region. County specific projects follow the original plan.

Review of Original Plan

Since approval of the original Regional Plan in 2005, advancing technology and local awareness has resulted in additional and more accurate data collection. Mesonet stations have been completed throughout the region and this update includes that information. PDM (Pre-disaster Mitigation) funding allowed LTADD staff to map all structures in floodplains and all critical facilities throughout the region. Losses in floodplains can now be more accurately forecast. All eight counties have now completed the map modernization program, and each has had all critical facilities mapped. Additional sources of data have been accessed and Emergency Management Agencies throughout the eight counties have tracked local data and mitigation projects and achievements. All eight counties have received information and funding to become "StormReady", a program sponsored by the National Weather Service. Each county is aware of weather gauge technology that would enable each county to track localized weather information.

Table 3.4.2.1 - Regional Goal #1			
Goal 1: Gather and Maintain a Comprehensive and Accurate database of jurisdictional specific natural hazard and parcel data.	Category of Action	Estimated Cost to Implement Action	Potential Responsible Entity
Objective 1.1: Establish methodology for gathering natural hazard data			
Action 1.1a: Align criteria and procedures for gathering and reporting natural hazard event data with the National Environmental Information Center.	Prevention	NA	LTADD
Action 1.1b: Identify county contact for collecting natural hazard data.	Prevention	NA	LTHMC, Emergency Manager
Objective 1.2: Collect, store, and analyze natural hazard event data			
Action 1.2a: Incorporate GIS into mapping and tracking natural hazard event data	Prevention	\$10,000	LTADD, Emergency Manager
Action 1.2b: Encourage updating flood plain and area maps.	Prevention, Awareness	NA	LTHMC, Local Government, Emergency Manager
Action 1.2c: Maintain and update maps of critical facilities	Prevention, Awareness	\$3-5,000 per county	LTADD, Emergency Manager, Planning/Zoning

Problem Statement 2: Since the last Lincoln Trail Regional Hazard Mitigation Plan update in 2010, all professionals across the 8-county area have come to better understand the capabilities and resources each brings to the region in response potential. Still, more work is needed to inform each jurisdiction of the power and potential for an effective first response, when mutual aid agreements are in place, professional knowledge is shared, and resources are pooled. A heightened sense of unity and strength will greatly reduce response time, better assist residents, and decrease any kind of social or economic impact on local communities in the event of natural disaster.

Goal 2: Goal 2 and the corresponding objectives and action steps remain in the plan with some minor modifications. The regional council agrees that the goal and objectives are generally applicable across all jurisdictions. County specific projects follow the original plan.

Review of Original Plan

The Lincoln Trail Region has worked to ensure that all first responders and emergency service agencies have improved their coordinated capabilities. The Region has been participating in the National Incident Management System (NIMS) since its inception in 2005 and supports the NIMS

goal for “all response and support agencies to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life and property and harm to the environment.”

Although there is little regional support for Citizen Emergency Response Teams (CERT), the region has a Medical Reserve Corps (MRC) through the local district health department. Volunteers trained in medical and non-medical areas make up the MRC and can be called up in the event of a disaster. The region also has an organization made up of ham radio operators that assists in disaster response, damage assessment and recovery.

Regional emergency response equipment and infrastructure has been acquired and installed throughout the area with funding through Homeland Security, ADF, local funds and other grants. Updated communication equipment, generators, community warning systems and weather tracking technology have been purchased and installed in all 8 counties.

Table 3.4.2.2 - Regional Goal 2			
Goal 2: Improve emergency response time, constituent service and education, and regional organizational efficiencies.	Category of Action	Estimated Cost to Implement Action	Potential Responsible Entity
Objective 2.1: Organize regional first responders. Educate the public about personal responsibility, services, and available resources, in the event of a natural disaster.			
Action 2.1a: Create a regional inventory of services available to respond to a natural hazard.	Prevention Awareness	NA	Emergency Management LTADD
Action 2.1b: Disseminate information on family preparedness to the public	Prevention Awareness	\$200-\$500 per county	Local Governments LTADD
Objective 2.2: Organize volunteers to enhance emergency response capabilities.			

Action 2.2a: Organize and train volunteers from agencies across the region	Prevention	NA	Emergency Managers Local Agencies
Objective 2.3: Maintain an inventory of local first response resources and facilities.			
Action 2.3a: Encourage the use of mutual aid agreements that allow the use of first response equipment regionally, when & where needed.	Prevention	NA	Emergency Managers Local units of government
Action 2.3b: Purchase emergency response equipment needed	Prevention	Project Specific	Local Government

Problem Statements 3 & 4: Several natural hazards are prevalent in the nation, but do not affect the Lincoln Trail Region. Analysis of hazard data, identifies the following hazards as most prevalent:

- Floods
- Tornados
- Winter Storms
- Severe Thunderstorms (some with imbedded hail)

Thunderstorms are most frequent, followed by floods and flash flooding. Tornados do not occur as frequently but have caused more loss of life over the past 50 years, than the other hazards combined. Hailstorms have resulted in the greatest property damage regionally. As of 7-31-2015, the region has received over \$8,316,959 in FEMA assistance for flood losses since 01-01-1978.

The following goals and objectives were developed in response to the following criteria:

1. Several jurisdictions have facilities that accommodate vulnerable populations such as children, the elderly, and disabled persons.
2. Regionally, there are an estimated 20 critical facilities and numerous residential structures located in floodplains.
3. Funding opportunities to address natural hazard issues are underutilized.

Eliminating and/or diminishing the physical and economic impact of natural disasters are goals of this plan. The LTHMC recognizes that this must be a regional endeavor that involves all stakeholders from individual citizens to local units of government. Responsible action requires this plan to provide an in-depth knowledge of the scope of natural disasters and the appropriate mitigation actions to protect citizens and property from hazards.

Goals 3 & 4: The following goals and modified objectives and action steps are generally applicable to jurisdictions throughout the region.

Review of Original Plan:

The Lincoln Trail Region has sponsored numerous efforts to promote individual and community preparedness. Efforts, to disseminate educational material to citizens on the importance of individual preparedness to mitigate the effects of hazards on personal safety and property, have increased.

LTADD advises all jurisdictions on the availability of mitigation funding and local applications for assistance have greatly increased over the last five years. Several projects have been completed including flood mitigation projects to address low water fords and bridges. Three applications for safe rooms were approved, and safe rooms have been completed in the Cities of Bradfordsville and Muldraugh. A safe room is currently under construction in Vine Grove. The City of Bardstown completed a project to bury power lines to prevent power outages in areas of residential and commercial development. Regionally, ADF, Homeland Security, Local, and Hazard

Mitigation funds have been utilized for the purchase of communication equipment, generators, weather radios, weather gauges, and public alert/warning systems.

Table 3.4.2.3 - Regional Goal 3			
Goal 3: Educate all regional stakeholders about natural hazards and the shared responsibility to mitigate impacts on public health, welfare, and safety.	Category of Action	Estimated Cost to Implement Action	Potential Responsible Entity
Objective 3.1: Educate entire region on prevalence of natural hazards in this area.			
Action 3.1a: Disseminate information regionally, concerning emergency response and mitigation measures	Prevention Awareness	\$500-\$1000 per county annually	LTADD Emergency Management
Action 3.1b: Advertise and promote the availability and benefits of the National Flood Insurance Program.	Prevention Awareness	\$500-\$1000 per county annually	Flood Plain Managers Insurance Agencies
Action 3.1c: Distribute information on personal preparedness and safety	Prevention Awareness	\$200-\$400 per county annually	LTADD Local Government
Action 3.1d: Provide potential property buyers with hazard data and maps	Prevention Awareness	\$1000-\$2000 per county	P&Z Insurance Agencies

Action 3.1e: Develop, maintain, and publicize evacuation routes	Prevention Awareness	\$3000-\$5000 per county	Emergency Management Local Government
Action 3.1f: Support the “FAST” program of the Area Agency on Aging to facilitate response to the elderly in coordination with the regional MRC, in the event of a disaster.	Prevention Protection	NA	LTADD Aging Dept. Regional Medical Reserve Corps
Action 3.1g: Provide local units of government with Continuity of Operations Planning (COOP).	Prevention Protection	NA	LTADD Regional Health Dept. State
Objective 3.2: Inform the Public about the damage that results from wind borne debris as a result of a tornado or severe storm.			
Action 3.2a: Educate the public about the advantages of proper tree maintenance.	Prevention Protection	\$2000-\$3000 per county	Local Government Utility Companies
Objective 3.3: Maximize citizen preparedness for severe weather			
Action 3.3a: Educate the public about public warning systems, shelter locations, and individual preparedness measures.	Prevention Protection Awareness	\$500-\$2000 per county	Media Local Government Emergency Management
Objective 3.4: Publicize Hazard Mitigation Program Grants and their potential benefits			
Action 3.4a: Post notice of available funding opportunities on the LTADD website	Public Education & Awareness	NA	LTADD

Table 3.4.2.4 - Regional Goal 4	
Goal 4: Develop and implement cost effective policies and measures that aid in mitigating the effects of natural hazards to human safety, infrastructure, and natural resources throughout the region.	
Objective 4.1: Decrease losses associated with flooding, landslides, and karst topography/sinkholes.	

Action 4.1a: Train local officials and planning & zoning commissions on the importance of incorporating hazard mitigation into land use planning.	Prevention Education Protection	NA	LTADD FEMA
Action 4.1b: Use acquisition programs to increase green space and recreational opportunities in flood prone areas.	Prevention	Specific to Project	Local Government
Action 4.1c: Protect natural resources and environmentally sensitive areas with regulations and zoning that precludes development in areas such as floodplains, wetlands, steep slopes, and karst topography/sinkholes.	Prevention	NA	Local Government Planning & Zoning Commissions
Objective 4.2: Reduce the vulnerability of critical facilities from effects of all natural hazards			
Action 4.2a: Prioritize mitigation projects that reduce the vulnerability of critical facilities from natural hazards.	Prevention	Project Specific	Local Government
Action 4.2b: Partner with all stakeholders to accomplish proper maintenance on utility easements.	Prevention	Project Specific	Local Government Utilities
Objective 4.3: Develop and implement regulations, ordinances, building codes, or zoning that improve community resiliency.			
Action 4.3a: Require safe rooms in residential developments of manufactured housing or mobile homes.	Prevention	NA	Local Government Planning & Zoning
Action 4.3b: Reduce storm water flooding with systems funded with storm water utility fees. Require such systems in new developments with subdivision regulations.	Prevention	Project Specific	Local Government Planning & Zoning.
Objective 4.4: Create jurisdiction specific hazard mitigation policies that: 1. Increase CRS rating in NFIP communities 2. Decrease disruptions to services and transportation 3. Minimize damage to public infrastructure.			

Action 4.4a: Develop a flood plain management ordinance that does not permit the base flood elevation (BFE) to be raised.	Prevention	NA	Local Government Planning & Zoning
Action 4.4b: Incorporate cumulative substantial damage data or improvement requirements into flood prevention ordinance.	Prevention	NA	Local Government Planning & Zoning
Action 4.4c: Develop maintenance policy to routinely clean debris from waterways.	Prevention	Jurisdiction Specific	Local Government
Action 4.4d: Prioritize cleanup and repair of roads after a natural hazard event.	Prevention	Jurisdiction Specific	Local Government
Action 4.4e: Bury utility lines in areas with repetitive power outages due to natural hazards.	Prevention	Jurisdiction Specific	Local Government Utility Companies
Objective 4.5: Improve severe weather warning systems to serve the population of the region.			
Action 4.5a: Encourage the purchase of weather radios for homes, businesses, and all care giving and educational facilities.	Prevention	\$50 per unit	Individuals Emergency Management
Action 4.5b: Track population growth to determine the need for additional outdoor warning systems.	Prevention	Jurisdiction Specific	LTADD Local Government Emergency Management

3.4.3 Implementation of Mitigation Measures

Approximately 60 elected officials and representatives from throughout the 8-county region, along with LTADD staff, prioritized the actions developed from the Regional Plan's goals and objectives. The table below shows the scoring criteria used in the prioritization process and reflects circumstances within each county. It should be noted that any kind of severe weather event could impact the scoring criteria for each jurisdiction. However, the goals and objectives contained in this plan are generally applicable throughout the region.

Implementation of these actions is dependent upon local resources, imminent need, and the availability of grant funds. However, a timetable has been assigned to each of the three ratings. The table lists actions and each county's corresponding score. Review of the scoring criteria helps to illustrate the similarities among the eight counties and underscores the potential for multi-jurisdictional projects and grant applications. As funding opportunities arise, jurisdictions can reference these tables to choose projects.

Timetable and corresponding score.

- High = 1 – 3 years to implement

- Medium = 4 – 6 years to implement
- Low = 7 – 10 years to implement

Table 3.4.3.1 - Prioritization Table	
Parameter	Scoring Criteria
Appropriateness of Action	1 – High: Reduces vulnerability 2 – Medium: Needed, but not linked to vulnerabilities 3 – Low: Inconsistent with identified needs
Consistent with existing plan and capabilities assessment	1 – High: Consistent with plan and priorities 2 – Medium: Somewhat consistent 3 – Low: Conflicts with plans and priorities
Potential to save lives, reduce property damage and loss of services	1 – High: Major impact 2 – Medium: Some impact 3 – Low: Minimal impact
Cost benefit analysis (refer to estimated cost column with actions)	1 – High: Extremely beneficial 2 – Medium: Beneficial 3 – Low: Minimum benefit

Table 3.4.3.2 - 2015 Ratings of Actions for Lincoln Trail Region by County								
Goal 1: Gather and Maintain a Comprehensive and Accurate Database of jurisdiction specific natural hazard and parcel data	Breckinridge	Grayson	Hardin	LaRue	Marion	Meade	Nelson	Washington
Action 1.1a: Align criteria and procedures for gathering and reporting natural hazard event data with the National Environmental Information Center.	H	H	H	M	H	H	H	H
Action 1.1b: Identify County contact for collecting natural hazard event data	M	H	H	H	H	H	H	H
Action 1.2a: Incorporate GIS into mapping and tracking natural hazard event data.	M	H	H	H	H	H	H	H
Action 1.2b: Encourage updating flood plain and area maps.	H	H	H	H	H	H	H	H
Goal 2: Improve emergency response time, constituent service and education, and regional organizational efficiencies.	Breckinridge	Grayson	Hardin	LaRue	Marion	Meade	Nelson	Washington
Action 2.1a: Organize regional first responders. Educate the public about personal responsibility, services, and	M	H	M	M	H	H	H	H

available resources, in the event of a natural disaster.								
Action 2.1b: Disseminate information on family preparedness to the public	H	H	H	H	H	H	H	H
Action 2.2a: Organize and train volunteers from agencies across the region	M	M	M	H	M	H	H	H
Action 2.3a: Encourage the use of mutual aid agreements that allow the use of first response equipment when & where needed.	H	H	H	H	H	H	H	H
Action 2.3b: Purchase emergency response equipment needed.	H	H	H	H	H	H	H	H
Goal 3: Educate all regional stakeholders about natural hazards and the shared responsibility to mitigate impacts on public health, welfare, and safety.	Breckinridge	Grayson	Hardin	LaRue	Marion	Meade	Nelson	Washington
Action 3.1a: Disseminate information regionally, concerning emergency response and mitigation measures.	M	H	M	M	M	H	M	H
Action 3.1b: Advertise and promote the availability and benefits of the National Flood Insurance Program.	M	M	H	H	M	H	H	M
Action 3.1c: Distribute information on personal preparedness and safety.	H	H	H	H	H	H	H	H
Action 3.1d: Provide potential property buyers with hazard data and maps.	M	M	L	L	H	H	M	M
Action 3.1e: Develop, maintain, and publicize evacuation routes.	M	M	H	H	H	H	M	H

Action 3.1f: Support the “FAST” program of the Area Agency on Aging to facilitate response to the elderly in coordination with the regional MRC, in the event of a disaster.	H	H	H	H	H	H	H	H
Action 3.1g: Provide local government with Coop training.	H	H	H	H	H	H	H	H
Action 3.2a: Educate the public about the advantages of proper tree maintenance.	M	M	L	M	M	H	H	M
Action 3.3a: Educate the public about public warning systems and shelter locations.	H	H	H	H	H	H	H	H
Action 3.4a: Post notice of available funding opportunities on the LTADD website.	M	H	M	M	H	H	H	H
Goal 4: Develop and implement cost effective policies and measures that aid in mitigating the effects of natural hazards to human safety, infrastructure, and natural resources throughout the region.	Breckinridge	Grayson	Hardin	LaRue	Marion	Meade	Nelson	Washington
Action 4.1a: train local officials and planning & zoning people on the importance of incorporating hazard mitigation into land use planning.	M	H	M	M	H	H	H	H
Action 4.1b: Use acquisition programs to increase green space and recreational opportunities in flood prone areas.	M	M	L	M	M	M	H	M
Action 4.1c: Protect natural resources and environmentally sensitive areas with regulations and zoning that precludes development in areas such as floodplains, wetlands, steep slopes, and karst topography/sinkholes.	M	H	M	M	H	H	H	H
Action 4.2a: Prioritize mitigation projects that reduce the vulnerability of critical facilities from natural hazards.	H	H	H	H	H	H	H	H
Action 4.2b: Partner with all stakeholders to accomplish proper maintenance on utility easements.	M	H	L	M	H	H	H	M

Action 4.3a: Require safe rooms in residential development of manufactured housing & mobile homes.	M	H	M	H	H	M	M	M
Action 4.3b: Reduce storm water flooding with systems funded with storm water utility fees. Require such systems in new developments with subdivision regulations.	M	H	H	M	H	H	H	H
Action 4.4a: Develop a flood plain ordinance that does not permit the BFE to be raised.	M	H	H	M	H	H	H	H
Action 4.4b: Incorporate cumulative substantial damage data or improvement requirements into flood prevention ordinances.	M	H	M	M	H	H	H	M
Action 4.4c: Develop maintenance policy to routinely clean debris from waterways	M	H	M	H	H	H	H	H
Action 4.4d: Prioritize cleanup and repair of roads after a natural hazard event.	M	H	H	M	H	H	H	H
Action 4.4e: Bury utility lines in areas with repetitive power outages due to natural hazards	H	H	H	H	H	H	H	H
Action 4.5a: Encourage the purchase of weather radios for homes, businesses, and all care giving and educational facilities.	H	H	H	H	H	H	H	H
Action 4.5b: Track population growth to determine the need for additional outdoor warning systems.	H	H	H	H	H	H	H	H

3.4.4 - **Multi-Jurisdictional Strategy**

The preceding actions are applicable to all jurisdictions throughout the region and are based on risk assessment (section 3.3). The Lincoln Trail Regional Hazard Mitigation Plan has been adopted by each jurisdiction by resolution. Each local government understands that the implementation of these actions is dependent on several factors, such as available funding and cooperative agreements.

The information contained within the Regional Plan has assisted the eight Lincoln Trail Counties to increase mitigation efforts and complete projects, since the last update in 2015. The vulnerabilities in the plan have guided these efforts and been helpful in completing grant applications. An inventory of projects completed and underway was outlined in this section.

Through review of past successful projects and existing vulnerabilities, each county and city developed a list of future projects that pertain to the specific populations and conditions in each jurisdiction. During October and November of 2015, the elected officials of the Region, had the opportunity to review and discuss this list and add and/or change projects and prioritizations. The prioritization process comes from the original plan and is based on project cost, number of constituents served, and the potential impact on the region if no action is taken. When funds become available, this project list will be referenced to determine what project(s) should be undertaken.

Local partnerships among adjoining cities and counties will remain a priority when projects are chosen. This cooperative effort will be a vital component in the success of this regional plan.

Priority Ranking Reference

1 = High – 1-3 years to implement

2 = Medium – 4-6 years to implement

3 = Low - 7–10 years to implement

Table 3.4.4.1 - Future Mitigation Projects: Breckinridge County					
Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Raise Bridge on Tar Springs Road	County 6 Households	Prevention Protection	Flooding	\$400,000	1
Raise Roadbed of Stonehill-Ford Rd.	County 20,432 population	Prevention Protection	Flooding	\$150,000	1
Purchase One Generator for Repeater in Harned	County 20,432 population	Prevention Protection	All Identified Weather Hazards	\$8,400	1
Purchase One Generator for Public Housing Site	County 25 Households	Prevention Protection	All Identified Weather Hazards	\$30,000	2
Install Box Culvert on Cook Ridge Road	County 20,432 population	Prevention	Flooding	\$200,000	2

Install A Culvert on Verden Street	Cloverport 1,119 Population	Prevention Protection	Flooding	N/A	1
Fix/Replace Emergency Sirens	Cloverport 1,119 Population	Prevention	All Identified Weather Hazards	N/A	1
Construct/Convert A Safe Room	Cloverport 1,119 Population	Protection	All Identified Weather Hazards	N/A	1
Expand Range of Emergency Radio Signal	Cloverport 1,119 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Work On City Ditches to Prevent Flooding	Cloverport 1,119 Population	Prevention	Flooding	N/A	1
Construct Safe Room in Hardinsburg	Hardinsburg 1,231 population	Protection	Thunderstorms & Tornados	\$2 Million	1
Install Three New Outdoor Sirens	Hardinsburg 1,231 population	Protection	Thunderstorms & Tornados	\$90,000	1
Install New Generator at Water/Sewer Plant	Hardinsburg Serves Co. of 20,432	Prevention Protection	All Identified Weather Hazards	\$200,000	2
Install Storm Water Culverts	Hardinsburg 1,231 population	Prevention Protection	Flooding	\$40,000 Each	2

These Breckinridge County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.2 - Future Mitigation Projects: Grayson County

Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Construct Two Safe Rooms in County	County 26,420 population	Prevention Protection	Thunderstorms & Tornadoes	\$2,000,000	1
Purchase Five Generators to Power Critical Facilities	County 26,420 population	Prevention Protection	All Identified Weather Hazards	\$180,500	2
Construct New Community Safe Room	Caneyville 529 population	Prevention Protection	Thunderstorms & Tornadoes	\$1,200,000	1
Purchase Four Generators	Caneyville 529 population	Prevention Protection	All Identified Weather Hazards	\$166,500	1
Dredge Creek	Caneyville 529 population	Prevention Protection	Flooding	\$200,000	1
Fire Station Sub Station	Clarkson 933 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Generator for City Hall	Leitchfield 6, 404 population	Prevention Protection	All Identified Weather Hazards	\$40,000	1
Construct New Community Safe Room	Leitchfield 6, 404 population	Prevention Protection	Thunderstorms & Tornadoes	\$1,200,000	2
Purchase and Install Two Outdoor Sirens	Leitchfield 6, 404 population	Prevention Protection	Thunderstorms & Tornadoes	\$60,000	1
Repairing the walls and support of the deteriorating drainage ditch	Leitchfield 6,404 population	Prevention Protection	Thunderstorms & Floods	N/A	1

These Grayson County projects will be funded with local money, homeland security, FEMA, and hazard mitigation funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.3 - Future Mitigation Projects: Hardin County					
Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Fix the Bank of Youngers Creek	County 110,702 population	Prevention Protection	Flooding	N/A	1
Drainage Improvements near Boone Road	County 110,702 population	Prevention Protection	Flooding	\$25,000	1
Purchase 6 Emergency Generators	Elizabethtown 31,394 population	Prevention Protection	All Identified Weather Hazards	\$180,000	1
Upgrade Early Warning Sirens	Elizabethtown 31,394 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Flood Prone Properties Survey (6)	Elizabethtown 31,394 population	Prevention Protection	Flooding	N/A	1
Expand Fire Fighter Training Capacity	Elizabethtown 31,394 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Drainage Improvements Under Peterson Drive at Billy Creek	Elizabethtown 31,394 population	Prevention Protection	Flooding	N/A	1

Improve Storage Capacity at Valley Creek Reservoirs	Elizabethtown 31,394 population	Prevention Protection	Flooding	N/A	1
Purchase a Truck with Snowplow and Salt Spreader	Elizabethtown 31,394 population	Protection	All Identified Weather Hazards	N/A	1
Purchase a Truck for Leaf and Brush Pick Up	Elizabethtown 31,394 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Purchase a Portable/Pull-Behind Limb Grinder	Elizabethtown 31,394 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Generator for Community Shelter	Sonora 565 population	Protection	All Identified Weather Hazards	\$40,000	1
Generator for Community Shelter	Upton 704 population	Protection	All Identified Weather Hazards	N/A	1
Purchase Four Emergency Generators	Vine Grove 6,559 population	Prevention Protection	All Identified Weather Hazards	\$200,000	1
Install Transfer Switches and generators for 8 Lift Stations	Vine Grove 6,559 population	Prevention Protection	All Identified Weather Hazards	N/A	2
Install Storm Water System in Riverview Area	West Point 952 population	Prevention Protection	Flooding	\$100,000	1
Ohio Riverbank Stabilization	West Point 952 population	Prevention Protection	Flooding	\$5,000,000	1

Would like to expand retention pond on 6th street that will require a buyout of 25 homes.	West Point 952 population	Prevention Protection	Flooding	N/A	1
14th-15th Street drainage project to continue to Main Street	West Point 952 population	Prevention Protection	Flooding	N/A	1

These Hardin County projects will be funded with local money, homeland security, FEMA, and hazard mitigation funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.4 - Future Mitigation Projects: LaRue County					
Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Raise Flooded Road	County 14,867 population	Prevention Protection	Flooding	\$100,000	1
Pump Station Generators	County 14,867 population	Prevention Protection	All Identified Weather Hazards	\$400,000	1
Install new emergency sirens across the county	County 14,867 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Complete Storm Water Mitigation Project Along Main Street	Hodgenville 3,235 population	Prevention Protection	Flooding	\$200,000	1

These LaRue County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.5 - Future Mitigation Projects: Marion County

Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Develop new Continuity of operations plan, Continuity of government plan, Volunteer management plan for disaster response, and a flood plan	County 19,581 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Seek Storm Ready Status	County 19,581 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Storm Water System Overhaul for Entire Community	Bradfordsville 270 population	Prevention Protection	Flooding	\$350,000	1
Complete a study of how the river floods the community	Bradfordsville 270 population	Prevention Protection	Flooding	N/A	1
Update Flood Maps	Bradfordsville 270 population	Prevention Protection	Flooding	N/A	1
Generator Purchase for Sewer Plant	Bradfordsville 270 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Upgrade Equipment at the sewage treatment plant	Lebanon 6,274 Population	Prevention Protection	All Identified Weather Hazards	N/A	1

Purchase a Generator for City Hall	Raywick 155 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
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These Marion County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.6 - Future Mitigation Projects: Meade County					
Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Project Scoping in Wolf Creek Area	County 30,003	Prevention Protection	Flooding	N/A	1
Bank Stabilization on Ohio River Downtown Brandenburg	Brandenburg 2,894 population	Prevention Protection	Flooding	\$1,200,000	1
Construct New Community Safe Room	Ekron 175 population	Prevention Protection	Thunderstorms & Tornadoes	\$1,000,000	1
Upgrade City's Outdoor Warning System	Muldraugh 1,040 population	Prevention Protection	Thunderstorms & Tornadoes	\$6,800	2
Construct 5,200' of a Storm Water System	Muldraugh 1,040 population	Prevention Protection	Flooding	\$500,000	1
Purchase one emergency generator at the main wastewater pumping station	Muldraugh 1,040 population	"Prevention Protection"	All Identified Weather Hazards	\$100,000	1

Cleaning and lining of class IV injection wells for stormwater removal	Muldraugh 1,040 population	Prevention Protection	Flooding	\$100,000	1
Upgrading of police and fire department communication equipment in all vehicles and all portable handhelds	Muldraugh 1,040 population	Prevention Protection	All Identified Weather Hazards	\$100,000	1

The Meade County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.7 - Future Mitigation Projects: Nelson County

Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Renovation of C.O.B.E.C building into emergency operations center	County 46,738 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Purchase Backup Emergency Generator for City Sewer Pump	Bardstown 13,567 population	Prevention Protection	All Identified Weather Hazards	\$94,000	1
Construct Emergency Road to Wastewater Treatment Plant	Bardstown 13,567 population	Prevention Protection	Flooding	\$20,000	2
Construct Watershed Detention Pond	Bardstown 13,567 population	Prevention Protection	Flooding	\$200,000	1
Purchase Two Emergency Generators	Bloomfield 961 population	Prevention Protection	All Identified Weather Hazards	\$30,000	2
Raise Perry St. Bridge & Install Larger Culverts	Bloomfield 961 population	Prevention Protection	Flooding	\$250,000	1
Purchase Two Emergency Generators	Fairfield 118 population	Prevention Protection	All Identified Weather Hazards	\$3,500	1
Continuity of Operations Plans	New Haven 798 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Coordinate River Clean Up	New Haven 798 population	Prevention	Flooding	N/A	1
Boat Purchase	New Haven 798 population	Protection	All Identified Weather Hazards	N/A	1

Purchase Portable Generator	New Haven 798 population	Prevention Protection	All Identified Weather Hazards	N/A	1
Review of FEMA Flood Plain Status	New Haven 798 population	Prevention	Flooding	N/A	1

These Nelson County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.

Table 3.4.4.8 - Future Mitigation Projects: Washington County					
Project	Location/ Population Benefit	Category of Action	Hazard(s) Addressed	Estimated Cost	Priority Ranking
Raise booker Road in front of bridge and add box culvert	County 12,027 population	Prevention Protection	Flooding	N/A	1
Build up road on back end of Fenwick Lane to prevent slipping downhill	County 12,027 population	Prevention Protection	Flooding	N/A	1
Purchase portable generator for use at city facilities	Mackville 222 Population	Prevention Protection	All Identified Weather Hazards	N/A	1
Install 400' Storm Water Mgmt. System on Maplewood Ave.	Springfield 2,846 population	Prevention Protection	Flooding	\$8,000	1
Install Storm Water Mgmt. System in Lebanon Hill Neighborhood	Springfield 2,846 population	Prevention Protection	Flooding	\$90,000	1
Replace Main St. Storm Water Mgmt. System	Springfield 2,846 population	Prevention Protection	Flooding	\$350,000	1

Install Storm Water Mgmt. System on Grundy Ave.	Springfield 2,846 population	Prevention Protection	Flooding	\$175,000	1
Install Storm Water Mgmt. System in Zone A Flood Area	Springfield 2,846 population	Prevention Protection	Flooding	\$250,000	1
Relocate 7 Homes on Ballard St. & Eddleman Ct. from Zone A Flood Area	Springfield 2,846 population	Prevention Protection	Flooding	\$315,000**	1
Reconstruct Low Water Bridge	Springfield 2,846 population	Prevention Protection	Flooding	\$190,000	3
Purchase Emergency Backup Generator	Springfield 2,846 population	Prevention Protection	All Identified Weather Hazards	\$75,000	2
Install “One Call System” to Enhance 911 Program	Springfield 2,846 population	Prevention Protection	All Identified Weather Hazards	\$40,000	2
Bury Utility Lines in Business District	Springfield 2,846 population	Prevention Protection	All Identified Weather Hazards	\$750,000	3
West High Street water mitigation project to redirect runoff	Springfield 2,846 population	Prevention Protection	Flooding	\$450,000	1
Purchase 2 generators for use at community centers	Willisburg 300 Population	Prevention Protection	All Identified Weather Hazards	N/A	1

These Washington County projects will be funded with local money, homeland security, FEMA, and hazard mitigation grant funds as they become available. All decisions will be analyzed using cost/benefit analysis to determine that funds are used wisely to benefit the greatest number of people.