E2.: Integrated Planning

Demonstrating Integration with Other State and/or Regional Planning Initiatives

Given that Kentucky elicited full risk assessments, risk assessment data, and mitigation strategy inclusions and/or evaluations from the following agencies, it is expected that these same agencies' current and future plans and planning mechanisms are and will be integrated with the Commonwealth of Kentucky's Enhanced Hazard Mitigation Plan. These agencies include:

- Kentucky Division of Water (KDOW) (under the Department for Environmental Protection under the Energy and Environment Cabinet)
- Kentucky Geological Survey (KGS) (i.e., research that affects land-use development, natural resources, and infrastructure under the University of Kentucky)
- Kentucky Division of Forestry (KDF) (under the Department for Natural Resources under the Energy and Environment Cabinet)
- Division of State Risk and Insurance Services (DSRI) (under the Finance and Administration Cabinet)
- Kentucky Division of Emergency Management (KYEM)

Similarly, the Commonwealth of Kentucky's Enhanced Hazard Mitigation Plan partnerships with United States Army Corps of Engineers (USACE) and National Weather Service (NWS) implies that their contributions to this mitigation plan will be included in commonwealth and regional planning where their contributions equally are welcome and integrated.

It is intended that the Kentucky Department for Public Health (KDPH) (under the Cabinet for Health and Family Services) will have its planning integrated with this hazard mitigation plan: As mentioned in previous sections, KDPH applied for a commonwealth-wide mitigation planning grant under the Pre-Disaster Mitigation (PDM) grant program of Fiscal Year 2016 that would conduct risk assessments and develop a mitigation strategy toward facilities responsible for public health and social services. Any mitigation strategy and risk assessment developed for this intended commonwealth-wide plan naturally is integrated into this hazard mitigation plan.

The Commonwealth of Kentucky Enhanced Hazard Mitigation Plan (CK-EHMP 2018) certainly is integrated regionally through the Area Development Districts (ADDs) described at multiple points throughout this document: Area Development Districts (ADDs) are responsible for developing all (save two) of Kentucky's county and city local hazard mitigation plans. Inasmuch as local hazard mitigation plans feed from and contribute to the Commonwealth's hazard mitigation plan, so the Commonwealth's plan is integrated regionally.

However, the integration regionally through the ADDs goes one step further: Kentucky's ADDs also are responsible for many regional plans and planning initiatives. This is especially so regarding plans for economic development, housing, and land-use. The ADDs have de facto contracts with Kentucky's Department for Local Government (DLG) through the Joint Funding Administration (JFA) that is described earlier in this document. These contracts allow the ADDs to receive and to distribute Community Development Block Grant (CDBG) funds that derive from the United States Department of Housing and Urban Development (HUD). Toward economic development, specifically, the JFA requires that each ADD develop a Comprehensive Economic Development Strategy (CEDS) for the federal Economic Development Agency (EDA). CEDS certainly are integrated with the ADDs' regional mitigation plans that is integrated with the Commonwealth's plan.

Other examples of ADD regional projects that would require integration of Kentucky's hazard mitigation plan with economic development, land-use, and housing regional plans include:

- Mapping of new business locations that identify emergency services resources and points of vulnerability;
- Mapping of manufacturing industries within a region;
- Supporting Revolving Loan Fund Program (RLFP);
- Implementing the federal Economic Development Agency's (EDA's) Partnerships for Opportunity and Workforce and Economic Revitalization (POWER) initiative; through the assignment of EDA POWER Coordinators;
- SSI/SSDI Outreach, Access, and Recovery (SOAR) technical assistance;
- Managing Kentucky Transportation Cabinet (KYTC) mapping projects; etc.

Finally, in the following section, this plan will mention that in order to conduct the risk assessment in flooding for the Commonwealth, Kentucky's Division of Water (KDOW) integrated its flood modeling results from its implementation of FEMA's Risk Mapping, Assessment, and Planning (RiskMAP) initiative into FEMA's Hazus software that is commonly used for commonwealth and regional planning. That KDOW's flood models that are the result of FEMA's RiskMAP initiative are integrated into Hazus that then is integrated into commonwealth and regional natural resources, economic development, land-use, housing, emergency management, infrastructure, and social services plans and planning initiatives exemplifies that the Commonwealth of Kentucky's Enhanced Hazard Mitigation Plan 2018 (CK-EHMP 2018) is integrated into other commonwealth and regional plans and planning mechanisms.

Demonstrating Integration of FEMA Mitigation Programs and Initiatives

That the Kentucky Enhanced hazard mitigation plan is integrated with FEMA's Hazard Mitigation Assistance (HMA) programs (i.e., the Hazard Mitigation Grants Program, the Pre-Disaster Mitigation program, and the Flood Mitigation Assistance program) is obvious: Generally, the state-level hazard mitigation plan's fundamental purpose is compliance with 44 CFR 201.4 that requires a state to develop and update every five (5) years a hazard mitigation plan in order to remain eligible for FEMA's Hazard Mitigation Assistance grants.

Consequently, this Enhanced plan is interpreting the desire to demonstrate integration with FEMA's HMA programs as demonstrating that the Commonwealth of Kentucky both has mitigation actions toward maximization and can evidence maximizing the (successful) pursuit of Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and Flood Mitigation Assistance (FMA) funding. To these ends, this Enhanced Plan would refer to the Standard Plan's Mitigation Strategy section and to the discussion of the Commonwealth of Kentucky's effective use of mitigation funding under the State Mitigation Capabilities section below.

This Enhanced multi-hazard mitigation plan document certainly is integrated with FEMA's National Flood Insurance Program (NFIP), Community Rating System (CRS), and RiskMAP initiatives and with the National Dam Safety Program. A particularly blunt display of this integration lies within the Standard plan document itself: FEMA's NFIP, CRS, and RiskMAP initiatives and FEMA's National Dam Safety Program primarily are administered by FEMA's Cooperating Technical Partner (CTP) in the commonwealth, Kentucky's Division of Water (KDOW) (an agency operating out of the Energy and Environment Cabinet and its Department of Environmental Protection). Consequently, Kentucky Emergency Management (KYEM) (i.e., the contract sponsors of this 2018 version of the Standard and Enhanced state-level multi-hazard mitigation plan) contracted directly with KDOW to develop the Standard plan's risk assessment for flooding, for dam failure, and for drought. KDOW was also contracted to develop the Repetitive-Loss/Severe Repetitive-Loss section of the Standard plan. That KYEM contracted with KDOW to develop the flooding, dam failure, and drought risk assessments acts as acknowledgment of the role that KDOW's administration of FEMA's NFIP, CRS, RiskMAP, and National Dam Safety Program has in integration with state and local hazard mitigation planning: Generally, the Kentucky Division of Water's experience and analysis of Kentucky's risks from flooding, drought, and dam failure, and its role in determining Repetitive-Loss- and Severe Repetitive-Loss-defined properties implies that its risk analysis for the commonwealth's hazard mitigation plan is colored by these experiences and this analysis.

The risk assessment for flooding conducted by the Division of Water indeed displays the above logic, i.e., that Kentucky Division of Water would integrate its experience and analysis in its role as Cooperating Technical Partner that implements FEMA's NFIP, CRS, and RiskMAP initiatives and its National Dam Safety Program. The flooding risk assessment was conducted using FEMA's Hazus software. FEMA's Hazus software is

manipulable: One of the manipulable variables of which KDOW (and its private-sector partners) took full advantage involved FEMA's inputs for flood models. The publicly-available version of Hazus uses standard ten-meter DMS flood models generally applicable (and conservatively-estimated) to any region in the country. KDOW and its private-sector partners replaced these standard ten-meter DMS models with less conservative, more accurate models that are the result of KDOW's implementation as FEMA's Cooperating Technical Partner (CTP) of its Risk Mapping, Assessment, and Planning (RiskMAP) initiative. This shows integration of this hazard mitigation plan's risk assessment with RiskMAP. An assessment of dam failure also is included in the Standard plan. Its analysis is integrated with the National Dam Safety Program, by default.

Outside of the plan document, the Commonwealth of Kentucky has displayed significant strides integrating FEMA's various programs over the years. Below briefly discusses these integrative relationships. These relationships are reflected in the Standard Plan through its mitigation strategy.

Flood Mitigation Assistance (FMA) x National Flood Insurance Program (NFIP)

One of the goals of the National Flood Insurance Program (NFIP) is to decrease the number of Repetitive-Loss (RL) and Severe Repetitive-Loss (SRL) properties. Whether a property is designated as an RL or SRL is defined in the 2004 Flood Insurance Reform Act: An RL property is one for which two (2) or more NFIP losses of at least $1,000 each have been paid within any ten-year rolling period since 1978. An SRL property is a residential, one- to four-person family[1] property that has had four (4) or more NFIP claims of greater than $5,000 or that has had two (2) to three (3) NFIP claims that cumulatively exceed the property's value. Given both the higher probability of danger to flooding from occupants residing in RL and SRL properties and given the burden on the public NFIP, FEMA provides incentives to identifying and conducting mitigation on RL and SRL properties. One of the vehicles for the mitigation incentive is FEMA's Flood Mitigation Assistance (FMA) grant program: If a mitigation project approved for an FMA grant deals with RL properties, FEMA is willing fund 90% of that project. If a mitigation project approved for an FMA grant deals with SRL properties, FEMA is willing to fund 100% of that project.

The Commonwealth of Kentucky fully integrates FEMA's FMA financing incentive to acquire and demolish or elevate RL and SRL properties that drain the NFIP's National Flood Insurance Fund (NFIF). It does so through Kentucky Emergency Management's (KYEM's) contract with the University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP). UK-HMGP devotes staff to focus solely or primarily on FEMA's Flood Mitigation Assistance (FMA) grant program. UK-HMGP staff throughout any given year identifies potential RL and SRL projects; conducts outreach to prepare a potential project

[1] The Community Rating System (CRS) ignores the one- to four-person family residential property distinction in the SRL definition. If a non-residential property meets the same criteria as a one- to four-person family property, then CRS considers that property an SRL property.

for an FMA application; provides technical assistance in the preparation of the FMA application that includes conducting the Benefit-Cost Analyses and editing applications; and manages the projects targeting RL and SRL properties if funded through FMA.

UK-HMGP's ability to concentrate on FMA grants for RL and SRL projects benefits the NFIP, local communities, and Kentucky Emergency Management (KYEM). Concentrating on the FMA grant allows for the active development of projects targeting RL and SRL properties. FMA grants toward RL and SRL properties, of course, benefit local communities by relieving typically economically disadvantaged areas of either most or all of their local contribution requirement to the grant. And UK-HMGP's concentration on FMA grants maximizes Kentucky's submission and implementation of mitigation projects overall in any given year: RL and SRL projects do not burden the HMGP program at the expense of an underutilized FMA grant cycle. KYEM can maximize HMGP funding for all other project types while UK-HMGP maximizes FMA funding with RL and SRL projects.

Flood Mitigation Assistance (FMA) x Hazard Mitigation Grants Program (HMGP)

Related to the previous discussion, FEMA's Flood Mitigation Assistance (FMA) grant program is integrated more broadly by the Commonwealth of Kentucky into FEMA's Hazard Mitigation Grants Program (HMGP) through both the Standard and Enhanced plan's elaboration on how the Commonwealth prioritizes mitigation projects: The Commonwealth determines which mitigation projects are to be submitted for potential approval to the Hazard Mitigation Grants Program (HMGP) that results from presidential disaster declarations. To this end, the Commonwealth must define how it objectively selects projects to be submitted for HMGP grants. Continuing from its 2013 hazard mitigation plan, the Commonwealth codifies that in ranking mitigation projects, those projects that acquire and demolish flood-prone properties are considered separate and preferable from a ranking of any other mitigation project type. Acquisition/demolition projects are the only project type to solve a mitigation issue 100%. Further, acquisition/demolition projects reduce overall state vulnerability to the risk from its foremost natural hazard, flooding. Acquisition/demolition projects reduce the National Flood Insurance Program's (NFIP's) exposure within the Commonwealth, as well. Kentucky's Standard and Enhanced plan codification of its prioritization of the acquisition/demolition project type separate and above other project types ties the Hazard Mitigation Grants Program (HMGP) that the Commonwealth leads in administering to FEMA's Flood Mitigation Assistance (FMA) program in two ways: One, the Commonwealth has helped create such high demand for acquisition/demolition projects that Kentucky is able to maximize the effective use of funding of both HMGP and FMA with these project types. Two, through the abovementioned contract partnership with the University of Kentucky Hazard Mitigation Grants Program (UK-HMGP), the Commonwealth itself has been able to develop acquisition/demolition projects that maximize the use of FMA and HMGP.

Hazard Mitigation Planning x RiskMAP

FEMA requires and subsequently funds through all three (3) of its Hazard Mitigation Assistance (HMA) grants (i.e., 1. the Hazard Mitigation Grant Program, 2. Pre-Disaster Mitigation, and 3. Flood Mitigation Assistance grants) hazard mitigation plans. The purpose and subsequent process of developing (or updating) a hazard mitigation plan produces two obvious points of integration with a valuable secondary outcome that results from the RiskMAP initiative and its process: At its core, the purpose of a hazard mitigation plan is to produce a mitigation strategy. This mitigation strategy includes goals and a list of "actions" that generally are comprised of capital projects for which communities potentially would seek federal and/or state assistance in financing. Additionally, the mitigation strategy will articulate how this list of actions is to be prioritized. All parts of the hazard mitigation planning process converge to this mitigation strategy: The goals, the actions, and the prioritization of actions for a community or for a collection of communities (i.e., multi-jurisdictional) is justified by conducting an inclusive and broad planning process; assessing the risk from natural hazards that affect the community or communities; identifying changes in development, population, land-use, etc.; and developing a timeline to keep the mitigation plan current. Of particular importance to this illustration of integration with FEMA initiatives, mitigation goals and a mitigation action list are supposed to be (at least partially) justified through the articulation of demand for such actions and projects via the planning process. For example, outside of any assessment of risk, if a floodplain coordinator or an emergency manager or city officials or an individual from the public expresses that their community needs enlarged culverts at points X, Y, and Z, this potential mitigation project needs to be taken seriously and added to a list of actions that this community might pursue. Additionally, in justifying its mitigation goals and action list, a community or set of communities will describe areas of particularly obvious vulnerabilities and weaknesses to natural hazards.

One of the secondary outcomes that results from the implementation of the RiskMAP initiative is the identification of "Areas of Mitigation Interest" (AOMIs). The definition of an AOMI is in the term itself: These are quite literally points on a map that signify an "area of mitigation interest." Similar to a hazard mitigation planning process, these "areas of mitigation interest" are identified primarily through outreach meetings called RiskMAP Discovery Meetings. The parties that implement FEMA's RiskMAP initiative (in Kentucky's case, its Division of Water) conduct public and inclusive meetings that include as one part of these Discovery Meetings the display of maps and the ability of individuals participating in the Discovery Meeting to circle and mark up areas where mitigation projects should be targeted according to the participants' experiences and expertise.

Through the University of Kentucky's Hazard Mitigation Grant Program Office (UK-HMGP) and its housing of the Commonwealth's hazard mitigation planner and individual responsible for local hazard mitigation plan reviews, the Commonwealth began integrating RiskMAP AOMIs into local hazard mitigation plans during this 2013-2018 commonwealth planning cycle. Admittedly, the current hazard mitigation plans approved for Kentucky's local governments reflect this integration only indirectly or superficially.

This has generally been the result of planning timeline issues, i.e., the hazard mitigation planning process for local governments (conducted by Kentucky's Area Development Districts) is conducted independently of RiskMAP's Discovery Meeting de facto planning process. However, it is the intent of UK-HMGP and its working relationships with Kentucky's Area Development Districts (ADDs) to use the plan maintenance schedules and any upcoming mitigation plan update cycle to more obviously integrate RiskMAP AOMIs with mitigation plans' mitigation strategies and vulnerability assessments.

Hazard Mitigation Grant Program (HMGP) x Building Code Effectiveness Grading Schedule (BCEGS)

During the 2013-2018 commonwealth planning cycle, FEMA changed one of the incentives in implementing its Hazard Mitigation Grant Program (HMGP): Of FEMA's Hazard Mitigation Assistance (HMA) grants (i.e., HMGP, Pre-Disaster Mitigation, and Flood Mitigation Assistance), only HMGP allows for grants to fund what FEMA terms "initiatives." Generally, any project undertaken using federal dollars must pass a Benefit-Cost Analysis (BCA). "Initiatives" are the exception. They describe those projects whose benefits are so obvious yet indirect that attempting to monetize them would be unnecessarily burdensome, rightfully suspect, and, thus, arbitrary. An example includes purchasing and installing warning sirens throughout a community. Monetizing the benefit of an individual hearing a siren and, thus, knowing that he or she must prepare for a potential disaster is incredibly indirect even as the benefit is obvious. In exchange for allowing certain project types to forego a Benefit-Cost Analysis, FEMA limits the quantity of "initiative" project to the number that can be financed with 5% of the HMGP allocation. However, in the past, the Commonwealth could request permission to use 10% of the HMGP allocation if it would use the permissible increased proportion for "wind-related" projects. During the 2013-2018 commonwealth planning cycle, this permissible increase in the proportion of the HMGP allocation to be used for additional "initiative" projects was changed from targeting "wind-related" projects to targeting those projects that would increase enforcement of and/or enhance local building codes.

The Building Code Effectiveness Grading Schedule (BCEGS) is a program developed and overseen by ISO/CRS-Verisk. It operates similarly to ISO/CRS-Verisk's other well-known program, the Community Rating System: Participating communities perform sanctioned activities, in this case, that increase enforcement and/or enhance local building codes in exchange for "points." Earn enough points and the community lowers its "Class" (i.e., Class 7 is better than a Class 8 which is better than a Class 9) in a ten-Class system (where Class 10 is default and signifies no improvement).

So, HMGP is integrated with BCEGS through this hazard mitigation plan in that the Commonwealth intends to regularly and where advisable request permission to increase its proportion of "initiative" projects from 5% to 10% in exchange for projects to increase enforcement of and/or enhance local building codes. To request this 5% increase in allowed use of the HMGP allocation for "initiative" projects, the Commonwealth intends to emphasize projects implementing BCEGS.

Community Rating System (CRS) x Hazard Mitigation Planning

One of the activities that can be conducted by a community to earn a significant number of points toward lowering its Community Rating System (CRS) Class and qualifying for increased percentage reductions in the community's National Flood Insurance Program (NFIP)-provided flood insurance premiums is to annually develop and update a 510 Floodplain Management Plan (510 FMP).

A 510 FMP shares many characteristics with a hazard mitigation plan: It requires an inclusive planning process, a risk assessment, a mitigation strategy, and a schedule for maintenance. These characteristic similarities are advertised explicitly in the Community Rating System Coordinator's Manual.

During this commonwealth's 2013-2018 planning cycle, Kentucky saw obvious and significant expansions in interest, participation, and success in implementing CRS. Consequently, during the 2013-2018 planning cycle, the University of Kentucky's Hazard Mitigation Grants Program Office (UK-HMGP) – the entity that houses the individual responsible for reviewing local hazard mitigation plans – consulted, (informally) reviewed, interacted with ISO/CRS reviewers and their contractors, and edited local hazard mitigation plans for compliance with CRS's 510 FMP for individual communities interested or actively seeking additional CRS points.

UK-HMGP intends to continue this activity for the 2018-2023 commonwealth planning cycle. This integration of CRS with FEMA's HMA planning is becoming increasingly complex and nuanced each year and with each (frequent) update of the CRS Coordinator's Manual. Though superficially, a CRS 510 FMP shares topical similarities to FEMA's hazard mitigation plan, it has been the experience of UK-HMGP that the review and subsequent interpretation of what constitutes the topics and content of a CRS 510 FMP vis-à-vis a FEMA hazard mitigation plan has diverged significantly. CRS and FEMA planning integration will require more deliberation, more forethought, increased communication between UK-HMGP and ISO/CRS regarding frequently changing interpretations of content, and more coordination at the local level during upcoming FEMA hazard mitigation plan update processes.

Community Rating System (CRS) x Building Code Effectiveness Grading Schedule (BCEGS)

The Commonwealth of Kentucky has conducted significant outreach, technical assistance, and coordination toward its increase in Community Rating System (CRS) participation both by an increasing number of counties and cities and through an increasing lowering of CRS Classes within participating CRS communities.

Consequently, Kentucky has a significant number of CRS communities that either are Class 8 or Class 7 status (and qualify for 10% and 15% reductions in National Flood Insurance Program-provided flood insurance premiums, respectively).

To qualify for CRS Class 6, implementation of the Building Code Effectiveness Grading Schedule (BCEGS) (another program offered and overseen by ISO/CRS-Verisk) is required.

Consequently, this hazard mitigation plan reflects that the Commonwealth intends to target its mitigation action to increase BCEGS participation with CRS communities that most immediately would benefit from the integration (i.e., CRS Class 8 and Class 7 communities).

Emergency Management Performance Grant Program (EMPG) x Community Rating System (CRS)

For Kentucky, the Emergency Management Performance Grant Program (EMPG) funds all but one[2] local Emergency Management Agency.

The Commonwealth has implemented and will continue to implement an initiative that essentially compiles and coordinates Community Rating System (CRS) activities-cum-points that routinely are performed by the Commonwealth and can, thus, be given to local governments implementing CRS.

So, CRS and EMPG is integrated in that the results of state compilation of CRS activities-cum-points is distributed downward to emergency management agencies that will ultimately implement a CRS program.

[2] Scott County's Emergency Management Agency is the only EMA that does not receive EMPG funds.

Emergency Management Performance Grant Program (EMPG) x Hazard Mitigation Assistance (HMA)

The integration between FEMA's Emergency Management Performance Grant (EMPG) and its Hazard Mitigation Assistance (HMA) programs that include the Hazard Mitigation Grant Program, the Pre-Disaster Mitigation program, and the Flood Mitigation Assistance grant program is obvious and cyclical: EMPG funds all but one county Emergency Management Agency in Kentucky. Kentucky actively attempts to maximize participation in FEMA's HMA programs and articulates this action and its successes in its hazard mitigation plan. The results of HMA grants maximization are administered primarily through emergency management agencies. Emergency Management Agencies receive financing through EMPG. QED.

Emergency Management Performance Grant Program (EMPG) x Public Assistance Categories C-G (PA C-G)

The integration between the FEMA Emergency Management Performance Grant (EMPG) and Public Assistance Categories C-G (PA C-G) programs mimic the integration between EMPG and the HMA grants: Kentucky's emergency management agencies are the primary recipient of EMPG funds. PA C-G is primarily administered, at least partially, through Kentucky's local Emergency Management Agencies. Thus, the EMPG-financed emergency management agencies are integrated with FEMA's PA C-G.

Emergency Management Performance Grant Program (EMPG) x
Threat and Hazard Identification and Risk Assessment (THIRA) x
Hazard Mitigation Planning x
Hazard Mitigation Assistance (HMA)

The Emergency Management Performance Grant Program (EMPG) finances all but one of Kentucky's county Emergency Management Agencies.

Generally, county-level Emergency Management Agencies are responsible for developing local Threat and Hazard Identification and Risk Assessment (THIRA) exercises and subsequent analyses. County-level THIRA analyses are overseen by and on-site training is conducted by Kentucky Emergency Management (KYEM) through its Area Managers.

Where KYEM's Area Managers have been involved intimately with communities' hazard mitigation planning processes (primarily conducted multi-jurisdictionally through Kentucky's Area Development Districts), the Commonwealth has seen integration of county-level THIRA analyses into a community's adoption of its multi-jurisdictional mitigation plan. This integration currently is observable through mitigation actions shared with THIRA analyses. It is expressed in this hazard mitigation plan that the Commonwealth through both KYEM and its Area Managers and through the University of Kentucky's Hazard Mitigation Grants Program Office (UK-HMGP) (that houses the individual responsible for local plan review and editing) will further and make more obvious county-level THIRA analysis into multi-jurisdictional planning.

Finally, where THIRA analysis integration is observed in local mitigation planning mitigation strategies, so the integration with FEMA's Hazard Mitigation Assistance (HMA) grant programs derives: Applications to FEMA's Hazard Mitigation Grant Program (HMGP), its Pre-Disaster Mitigation (PDM) program, and its Flood Mitigation Assistance (FMA) program must reflect adoptions of mitigation actions within local multi-jurisdictional hazard mitigation plans.

Public Assistance Categories C-G (PA C-G) x Hazard Mitigation Grant Program (HMGP)

The integration of FEMA's Public Assistance C-G (PA C-G) and its Hazard Mitigation Grant Program (HMGP) is observed through Kentucky Emergency Management's (KYEM's) expressed promotion of and results following implementation of FEMA's Section 406 Mitigation projects.

Section 406 Mitigation refers to mitigation projects financed through FEMA's Public Assistance rather than through FEMA's Hazard Mitigation Assistance (HMA) grant programs (sometimes referred to as Section 404 Mitigation). Public Assistance can fund de facto mitigation projects if it can be argued and within certain financing limits that while replacing damaged infrastructure and assets as the direct result of a presidentially-declared disaster it would be more beneficial and lower the risk of repeated Public Assistance to improve those assets that currently are being replaced.

So, where Kentucky has succeeded in implementing Section 406 Mitigation, it is generally as a percentage of Public Assistance C-G projects.

The integration with the Hazard Mitigation Grant Program (HMGP) derives from how an increase in PA C-G and Section 406 Mitigation can affect demand for HMGP or distribution of sub-applicant and/or project type within any given HMGP grant: The Commonwealth expresses in this hazard mitigation plan its prioritization of HMGP funding toward communities declared within a presidential disaster. If a declared community can implement mitigation projects through FEMA's Public Assistance, then this lessens that community's need to participate in HMGP (and allows for increased participation from non-declared communities) or allows that community to apply for projects whose benefits are less immediate.

Hazard Mitigation Assistance (HMA) x National Dam Safety Program

Where applicable, legal, and where allocations are large enough to fund what are typically large-scale capital projects, the Commonwealth prioritizes projects for Hazard Mitigation Assistance funding (i.e., funding through Hazard Mitigation Grant Program, through the Pre-Disaster Mitigation program, or through the Flood Mitigation Assistance program) that deal with dams registered under and evaluated through the National Dam Safety Program. That where applicable and legal the Commonwealth would prioritize such projects derives from the Commonwealth's expressed prioritization of mitigation projects targeting critical facilities.

National Dam Safety Program x RiskMAP

Kentucky's Division of Water (KDOW) regulates about 954 of Kentucky's dams. (It does not manage all of Kentucky's dams, of course.) These dams will be participants in and receive guidance from the National Dam Safety Program that KDOW manages for FEMA as its Cooperating Technical Partner (CTP). Of the dams in the National Dam Safety Program that KDOW regulates, a disproportionate number of them are owned by two (2) state agencies: Kentucky State Parks and Kentucky Department of Fish and Wildlife (KDFW). Kentucky State Parks and Kentucky Department of Fish and Wildlife do not specialize in capital asset management in their quotidian activities. Dams are capital assets. Thus, KDOW specializes in managing the regulated dams owned by Kentucky State Parks and KDFW in its implementation of the National Dam Safety Program and while engaging in Risk Mapping, Assessment, and Planning (RiskMAP) activities.

Related, the National Dam Safety Program primarily provides guidance and best practices for the management of dams. Recently, the RiskMAP program has become involved in mapping reservoir areas. The RiskMAP standard for reservoir areas derives from recommendation by the National Dam Safety Program: For reservoir areas, mapping is done at the one-percent (1%) of 24-hour event. In its role as Cooperating Technical Partner (CTP) to implement the RiskMAP initiative, Kentucky Division of Water maps reservoir areas at a standard higher than what is recommended by the National Dam Safety Program: It maps reservoir areas at one-percent (1%) of six-hour event.

E3.: Commonwealth Commitment to a Comprehensive Mitigation Program

The Commonwealth of Kentucky is able to demonstrate its commitment to a comprehensive mitigation program using four (4) of the six (6) categories identified in 44 CFR 201.5 (b)(4): 1) by providing workshops and training and/or a coordinated capability development of local officials; 2) by developing legislative initiatives, mitigation councils, the formation of public/private partnerships, and/or other executive actions that promote hazard mitigation; 3) by providing a portion of the non-Federal match for the Hazard Mitigation Grants Program (HMGP); and 4) by encouraging local governments to use a current version of a nationally-applicable model building code

Training and Workshops; Coordinated Capability Development of Local Officials

A straightforward way to demonstrate Kentucky's commitment to a comprehensive mitigation program through its provision of trainings and workshops is to visit Kentucky Emergency Management's (KYEM's) Training and Exercise Program website: https://kyem.ky.gov/training/Pages/default.aspx.

As further evidence that Kentucky commits to a comprehensive mitigation program through training (and workshops), that KYEM offers considerable training each month is supported legally and formally through Kentucky Revised Statute (KRS) and as Kentucky Administrative Regulation (KAR): KRS 39A.050 (2)(I) requires that Kentucky's emergency management division "institute emergency management training programs." 106 KAR 1: 210 furthers KRS 39A.050 (2)(I) by defining an "Emergency Management Development Program" that conducts "emergency management training" to include approved seminars, workshops, courses, classes, or instruction "sponsored, specified, offered through, or approved by" Kentucky Emergency Management.

At the time of this plan update's final drafting, KYEM's Training and Exercise Program webpage consists of trainings and workshops targeting Response. However, below as Table E1., this Enhanced plan illustrates KYEM's commitment to a comprehensive mitigation program through training and workshops by isolating past FEMA/DHS trainings and workshops from 2014 – 2018 relevant to mitigation that have been sponsored, specified, and offered through KYEM and posted to its Training and Exercise Program webpage.

Table E1. Trainings Offered by KYEM Specific to FEMA and DHS

Course Title	Dates Held	Location Held
L-278: NFIP/Community Rating System	August 13-16, 2018	Kentucky Emergency Management
MGT-310: THIRA	April 6-7, 2017	Benton National Guard Armory
DHS National Planner's Course	March 27-31, 2017	Kentucky Emergency Management
MGT-418: Training Identification and Preparedness Planning	August 17-18, 2016	John Black Community Center
L-276: Benefit-Cost Analysis (Entry-Level Training)	July 28-29, 2015	Kentucky Emergency Management
Overview of FEMA's Environmental Planning and Historic Preservation (EHP)	June 26, 2015	Kentucky Emergency Management
L-212: HMA Quality Application Elements	July 14-16, 2015	Kentucky Emergency Management
L-213: HMA Application Review and Evaluation	July 20-21, 2015	Kentucky Emergency Management
L-214: HMA Project Implementation and Programmatic Closeout	July 22-23, 2015	Kentucky Emergency Management
L-273: Managin Floodplain Development through the NFIP	August 11-14, 2014	Lake Barkley State Resort Park
L-273: Managing Floodplain Development through the NFIP	March 31 – April 3, 2014	Richmond, Kentucky
L-276: Benefit-Cost Analysis (Entry-Level Training)	March 24, 2014	Kentucky Emergency Management

Expanding upon the Commonwealth's above (unexhaustive) demonstration of a commitment to support local mitigation through the provision of workshops and training, coordinated capability development of local officials, including Emergency Management and Floodplain Management certifications is most obviously demonstrated through workshops and trainings offered through the Governor's Emergency Management Workshop (GEMW)/Kentucky Emergency Services (KES) Conference, by the Kentucky Association of Mitigation Managers (KAMM), and by citing Kentucky's unique Applicant Agent certification.

The Governor's Emergency Management Workshop (GEMW)/Kentucky Emergency Services (KES) Conference represents a perennial and coordinated partnership amongst the Kentucky Emergency Services Conference (KESC), Kentucky Emergency Management (KYEM), and Kentucky Emergency Management Association (KEMA) to offer annually workshops and training toward the development of capability for local officials.

Table E2. below displays a unexhaustive list of trainings/workshops/capability development topics relevant to mitigation that have been presented at GEMW/KES Conferences from 2013-2018:

Table E2. GEMW/KESC Topics Illustrating Kentucky's Commitment to a Comprehensive Mitigation Program through Trainings; Workshops; Capability Development

G-205: Community Recovery
G-270.4: Recovery from Disasters
G-318: Local Mitigation Planning Workshop
G-393: Mitigation for Emergency Managers
THIRA at the County-Level
Kentucky Revised Statute (KRS) 39A-F Review [review of emergency management training legislative priority]
Procurement and Contracts per 2 CFR 200: Emergency Work vs. Permanent Work
City Emergency Manager Collaboration Meeting
U.S. Army Corps of Engineers (USACE) Flood Fight
Rapid Needs and Damage Assessment
FEMA Region IV PrepareAThon
Commodities Flow Survey
County Debris Management
The Private Sector and Emergency Management
Kentucky Division of Water Update on Mapping of the Commonwealth, the RiskMAP Program, and the Status of the National Flood Insurance Program (NFIP) in the Commonwealth
Updates on Public Assistance (PA)
Natural Resource Conservation Service (NRCS) [program overview; how it benefits local governments]
Response Planning for People with Functional Needs
Emergency Management Agencies (EMAs) and Early Warning Systems (EWSs)
Emergency Management Assistance Compact (EMAC)
[Uses, Functions of] Data and Damage Collector App

The Kentucky Association of Mitigation Managers (KAMM) was formed to promote natural hazard mitigation and management in Kentucky. KAMM's members represent local, state, and federal officials; floodplain coordinators/managers; planning and zoning officials; engineers; surveyors; GIS specialists; hydrologists; public safety personnel; and emergency managers. Its inception represents coordination that argues for Kentucky's enhanced status: KAMM was founded through both Kentucky Division of Water (KDOW) and Kentucky Emergency Management (KYEM).

Relevant to this section of the Enhanced mitigation plan, one of KAMM's core functions is to offer workshops and trainings for all parties involved in mitigation. It does so primarily through two mediums: KAMM Regional Trainings and the annual KAMM Conference.

KAMM currently divides itself into four "regions." Generally characterizing, Region I represents from central Kentucky to its southwestern- and westernmost borders; Region II represents from central Kentucky to its northwesternmost border; Region III represents from central Kentucky to its northern- and north easternmost borders; and Region IV represents from central Kentucky to its southern-, southeastern- and easternmost borders. Each region elects a "regional representative." A primary function of each "regional representative" is to target workshops and trainings to the mitigation demands of its constituents. Throughout the first and second calendar quarters of every year, KAMM hosts "Regional Trainings" in a variety of mitigation topics presented by an array of speakers and targeted to the demands of the region as expressed at the KAMM Annual Conference and through outreach by each region's "regional representative." Trainings do provide its participants with Continuing Education Credits (CECs) for a Certified Floodplain Manager (CFM) and Certified Emergency Manager (CEM).

Table E3. lists the training topics and other relevant information presented at KAMM Regional Trainings from 2013 to 2018.

Table E3. KAMM Regional Trainings, 2013-2018

KAMM Training Offered	Year	Dates Training Offered
Floodplain Management 101	2013	2/6; 2/7; 2/13; 2/14
National Flood Insurance Program (NFIP) Reforms [Biggert-Waters 2012]	2013	2/6; 2/7; 2/13; 2/14
Community Hazard Assessment and Mitigation Planning System Training	2013	2/6; 2/7; 2/13; 2/14
Floodplain Management 101	2014	2/6; 2/7; 2/18; 2/19; 2/24; 2/25; 3/20; 3/21
National Flood Insurance Program (NFIP) Reforms [Biggert-Waters 2012]	2014	2/6; 2/7; 2/18; 2/19; 2/24; 2/25; 3/20; 3/21
Mitigation 101	2014	2/6; 2/7; 2/18; 2/19; 2/24; 2/25; 3/20; 3/21
Natural Hazard Risks in Kentucky	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Program Basics and Risk Identification Tips and Tricks	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Community Rating System (CRS) and the KAMM User's Group	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Communicating with Officials	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Mitigation Planning and Funding Actions	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Community Hazard Assessment and Planning System and Mitigation Action Forms	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Local Mitigation Implementation	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Local Success Stories	2015	2/6; 2/20; 2/24; 3/3; 3/10; 3/12; 3/18; 3/23
Program Basics and Risk Identification Tips and Tricks	2016	3/9; 3/15; 3/29; 4/15
Permitting: Floodplain, 401 and 404	2016	3/9; 3/15; 3/29; 4/15
Community Rating System (CRS) Program Introduction	2016	3/9; 3/15; 3/29; 4/15
Local Success Stories	2016	3/9; 3/15; 3/29; 4/15
Mitigation Planning, Funding Actions [1.5 Hours]	2016	3/9; 3/15; 3/29; 4/15
Community Rating System (CRS) Advanced Topics [2.5 Hours]	2016	3/22; 4/5; 4/19; 4/28
Local Success Stories	2016	3/22; 4/5; 4/19; 4/28
Innovation in Mitigation: Using the Technology at our Disposal to Make Informed Decisions	2016	3/22; 4/5; 4/19; 4/28
National Flood Insurance Program (NFIP) Coordinator Role and NFIP Program Implementation	2016	3/22; 4/5; 4/19; 4/28
Program Basics and Risk Identification Tips and Tricks	2017	3/8; 3/15; 3/24; 3/30
Permitting: Floodplain, 401 and 404	2017	3/8; 3/15; 3/24; 3/30
Community Rating System (CRS) Program Introduction	2017	3/8; 3/15; 3/24; 3/30
Local Success Stories	2017	3/8; 3/15; 3/24; 3/30
Mitigation Planning and Funding Actions [1.5 Hours]	2017	3/8; 3/15; 3/24; 3/30
Using Data to Answer a Community's Needs	2017	4/5; 4/18; 4/25; 4/28
Data Creation and Acquisition	2017	4/5; 4/18; 4/25; 4/28
Data Exercise	2017	4/5; 4/18; 4/25; 4/28
Threat and Hazard Identification and Risk Assessment (THIRA) Guide [1.5 Hours]	2017	4/5; 4/18; 4/25; 4/28
State Regulation Changes	2018	4/24; 5/10; 5/23
Permitting	2018	4/24; 5/10; 5/23
Landslides	2018	4/24; 5/10; 5/23
Hazard Mitigation Plan Integration with Community Rating System (CRS)	2018	4/25; 5/10; 5/22
Hazus and Data	2018	4/25; 5/10; 5/22
RiskMAP Updates	2018	4/25; 5/22
Karst and Seismic Hazards	2018	5/10
Hazus and RiskMAP	2018	5/10
Hazard Mitigation Plan Breakdown	2018	5/15
Understanding Risk Assessments	2018	5/15
Geologic Hazards in Kentucky	2018	5/15
Department for Local Government (DLG) Flood Control Match Funding	2018	5/15
Acquisitions and EcoSystem Services	2018	5/15
Lessons Learned from Louisville Metropolitan Sewer District (MSD) Buyout Program	2018	5/15
Stream Restoration Project Ideas, Implementation	2018	5/15

KAMM also hosts a conference every year that presents a number of workshops, trainings, and examples of statewide coordination all targeted to mitigation. Again, these workshops and trainings offer professional credits for Certified Floodplain Managers (CFMs), for Certified Emergency Managers (CEMs), and for certified planners (AICPs, or American Institute of Certified Planners).

Table E4. lists the trainings and workshops that have been offered annually at the KAMM Conference from 2013 to 2018. It should be noted that at the time of this writing, the 2018 KAMM Conference has yet to occur. The list of trainings and workshops written here for 2018 represent a proposed conference agenda and is, of course, subject to change.

Table E4. Trainings; Workshops Offered at KAMM Annual Conference, 2013-2018

Training; Workshop	Duration	Conference Dates
Certified Floodplain Manager (CFM) Refresher Course and Exam	7 Hours	August 26-29, 2013
GPS Mapping Basics Workshop	4 Hours	August 26-29, 2013
FEMA Region IV Mitigation Division Director Keynote Address	1 Hour	August 26-29, 2013
National Weather Service (NWS) Plenary	1 Hour	August 26-29, 2013
Residential Safe Rooms	1 Hour	August 26-29, 2013
Kentucky Office of Homeland Security: In the Beginning…	1 Hour	August 26-29, 2013
New Stormwater Rules	1 Hour	August 26-29, 2013
U.S. Geological Survey Flood Inundation Mapping Science in Kentucky	1 Hour	August 26-29, 2013
Kentucky Geological Survey (KGS) Plenary	1 Hour	August 26-29, 2013
Letter of Map Revision 101 Workshop	2 Hours	August 26-29, 2013
Damage Assessments Workshop	2 Hours	August 26-29, 2013
Resilient Solutions Start with Community Workshop	2 Hours	August 26-29, 2013
National Flood Insurance Program (NFIP) Workshop	2 Hours	August 26-29, 2013
Elevation Certificate (EC) Workshop	4 Hours	August 26-29, 2013
Biggert-Waters NFIP Reauthorization Act	1 Hour	August 26-29, 2013
Kentucky Division of Water (KDOW) Plenary	1 Hour	August 26-29, 2013
Less Conversation, More Action	1 Hour	August 26-29, 2013
Nuances of Mitigation Project Management: Budgeting; Contracting; Invoicing	1 Hour	August 26-29, 2013
Lessons Learned through Green Infrastructure Impact Assessment	1 Hour	August 26-29, 2013
Mitigation Planning Process and Better Planning	1 Hour	August 26-29, 2013
New York City Public Hospital's Response to Hurricane Sandy	1 Hour	August 26-29, 2013
iFlood Tool	1 Hour	August 26-29, 2013
Gwinnett County, GA Stormwater Infrastructure Assessment Program	1 Hour	August 26-29, 2013
Geospatial Analysis at Your Fingertips: Online Imagery and Terrain Exploitation	1 Hour	August 26-29, 2013
Road to Resilience through Partnerships	1 Hour	August 26-29, 2013
Kentucky Division of Water (KDOW): A Planning Resource	1 Hour	August 26-29, 2013
Floodplain Construction Application and Process Basics and Beyond	1 Hour	August 26-29, 2013
LiDAR: Kentucky Statewide Overview, Basics, and Applications Workshop	3 Hours	August 26-29, 2013
Civic Consultants in Association with Kentucky Ready Mix Concrete Association	4 Hours	August 26-29, 2013
2013 Community Rating System (CRS) Coordinator's Manual Workshop	4 Hours	August 26-29, 2013
Building a State Disaster Management Team Plenary (Oklahoma Perspective)	1 Hour	August 26-29, 2013
How to Watch the Weather	1 Hour	August 26-29, 2013
State Hazard Mitigation Plan Risk Assessment Development and Uses	1 Hour	August 26-29, 2013
Basics of Dam Safety and Flood-Related ("Residual") Risks	1 Hour	August 26-29, 2013
Developing a KAMM Disaster Recovery Team	1 Hour	August 26-29, 2013
Developing Base Flood Elevations (BFEs) in an Approximate A-Zone	1 Hour	August 26-29, 2013
RiskMAP Discovery Meetings	1 Hour	August 26-29, 2013
Using Existing FEMA Computer Models for Floodplain Management Decisions	1 Hour	August 26-29, 2013
Community Hazard Assessment and Mitigation Planning System	1 Hour	August 26-29, 2013
Certified Floodplain Manager (CFM) Refresher Course	4 Hours	September 8-11, 2014
Elevation Certificate (EC) Workshop	4 Hours	September 8-11, 2014
Certified Floodplain Manager (CFM) Exam	3 Hours	September 8-11, 2014
Community Rating System (CRS) and Elevation Certificates (EC) Workshop	3 Hours	September 8-11, 2014
Association of State Floodplain Managers (ASFPM) Keynote	1 Hour	September 8-11, 2014
Grundy Home Bridge Project	½ Hour	September 8-11, 2014
Hopkinsville Flooding Success Story	½ Hour	September 8-11, 2014
Tips and Tricks for Community Rating System (CRS)	1 Hour	September 8-11, 2014
Silver Jackets	½ Hour	September 8-11, 2014
The New FEMA Map Service Center	½ Hour	September 8-11, 2014
Understanding FEMA's Letter of Map Change Process Workshop	2 Hours	September 8-11, 2014
Community Rating System (CRS) Introduction	1.5 Hour	September 8-11, 2014

Training; Workshop	Duration	Conference Dates
FEMA Non-Disaster Grant Programs	½ Hour	September 8-11, 2014
National Flood Insurance Program (NFIP) 101 Workshop	2 Hours	September 8-11, 2014
Mitigation 101	1 Hour	September 8-11, 2014
Training by AMEC	1 Hour	September 8-11, 2014
Training by National Weather Service (NWS)	1 Hour	September 8-11, 2014
FEMA Region IV Hazard Mitigation Assistance (HMA) Plenary	1 Hour	September 8-11, 2014
Public Assistance (PA) Mitigation Opportunities Plenary	1 Hour	September 8-11, 2014
Homeowners Flood Insurance Affordability Act (HFIAA) Plenary	1 Hour	September 8-11, 2014
Green Initiatives	1 Hour	September 8-11, 2014
Whitley County Landslide Mitigation Project Success Story	½ Hour	September 8-11, 2014
Landslides in Kentucky	½ Hour	September 8-11, 2014
Dam Safety	½ Hour	September 8-11, 2014
Kentucky Division of Water Floodplain Management Permit Review Process	½ Hour	September 8-11, 2014
Environmental/Historic Preservation (EHP) Workshop	3 Hours	September 8-11, 2014
LiDAR Workshop	3 Hours	September 8-11, 2014
Richmond Water Street Mitigation Project Success Story	1 Hour	September 8-11, 2014
Hazus-Compatible County Maps for Jefferson County, Kentucky	1 Hour	September 8-11, 2014
Stormwater Compliance	1 Hour	September 8-11, 2014
Western Kentucky University (WKU) Mitigation Education Initiatives	1 Hour	September 8-11, 2014
Training by Stantec	1 Hour	September 8-11, 2014
Area Development District (ADD) Regional Mitigation Plan Updating	1 Hour	September 8-11, 2014
RiskMAP Action Plan	½ Hour	September 8-11, 2014
Daviess County Mitigation Project Success Story	½ Hour	September 8-11, 2014
Tornado Safe Room Application Training	1 Hour	September 8-11, 2014
Commonwealth of Kentucky Enhanced Hazard Mitigation Plan, 2013 Update	1 Hour	September 8-11, 2014
Training by AECOM	1 Hour	September 8-11, 2014
Certified Floodplain Manager (CFM) Refresher Course	4 Hours	August 24-27, 2015
Certified Floodplain Manager (CFM) Exam	3 Hours	August 24-27, 2015
Elevation Certificate Workshop	4 Hours	August 24-27, 2015
Kentucky Emergency Management (KYEM) Keynote RE: Mitigation Programs	½ Hour	August 24-27, 2015
406 Hazard Mitigation	1 Hour	August 24-27, 2015
High Water Mark Training	1 Hour	August 24-27, 2015
Louisville Metropolitan Sewer District (MSD) Water Quality Standards	1 Hour	August 24-27, 2015
Kentucky Transportation Cabinet (KYTC) and National Flood Insurance Program: Bridging Floodplain Management and Design	½ Hour	August 24-27, 2015
Post-Flood Recovery Guidebook: A Planning Tool for Floodplain Administrators	½ Hour	August 24-27, 2015
Spatial Analysis of Terrain Using Cloud Services	½ Hour	August 24-27, 2015
KAMM Community Rating System (CRS) Users' Group	½ Hour	August 24-27, 2015
New Kentucky Community Rating System (CRS) Communities	½ Hour	August 24-27, 2015
Delivering Non-Regulatory Products to the Lower Levisa Watershed for Mitigation Action	½ Hour	August 24-27, 2015
City of London, Whitley Branch Drainage Improvement Success Story	½ Hour	August 24-27, 2015
The Draft Phase II MS4 Permit	½ Hour	August 24-27, 2015
Digital Detection for MS4 Program Efficiency	½ Hour	August 24-27, 2015
Community Rating System (CRS) Programmatic Changes Refresher	1 Hour	August 24-27, 2015
U.S. Army Corps of Engineers 101	1 Hour	August 24-27, 2015
FEMA Non-Disaster Mitigation Grant Programs	1 Hour	August 24-27, 2015
Hazard Mitigation Assistance (HMA) Application Development Plenary	1 Hour	August 24-27, 2015
Locating Vulnerable Properties for Mitigation in the Commonwealth Plenary	1 Hour	August 24-27, 2015
Planning Project Application Development Basics; Implementation	½ Hour	August 24-27, 2015
Building an Economically Resilient Magoffin County	½ Hour	August 24-27, 2015
Refining RiskMAP	½ Hour	August 24-27, 2015
Coordinated Needs Management Strategy (CNMS)	½ Hour	August 24-27, 2015

Training; Workshop	Duration	Conference Dates
Stream Restoration: A Tool for Improving Water Resources	½ Hour	August 24-27, 2015
Condition Assessments Mobile Apps in Chattanooga, TN	½ Hour	August 24-27, 2015
Pike County HMGP-Funded Mitigation Project Success Story	½ Hour	August 24-27, 2015
Flood Inundation Mapping for the Licking River and South Fork Licking River in Falmouth	½ Hour	August 24-27, 2015
What I've Learned about Dam Safety: Good, Bad, and Ugly	½ Hour	August 24-27, 2015
Elevation Certificates (ECs): Checks and Balances Workshop	1 Hour	August 24-27, 2015
GIS and Mapping for Community Rating System (CRS) Workshop	1 Hour	August 24-27, 2015
National Flood Insurance Program (NFIP) 101 Workshop	1 Hour	August 24-27, 2015
Floodplain Ordinances Workshop	1 Hour	August 24-27, 2015
Understanding FEMA's Letter of Map Change (LOMC) Process Workshop	2 Hours	August 24-27, 2015
Community Rating System (CRS) Credit for Local Stormwater Regulations and Master Plans and Impact Adjustments	1 Hour	August 24-27, 2015
Richmond Water Street Stormwater Project Success Story	1 Hour	August 24-27, 2015
Environmental Considerations of the Mountain Parkway Expansion	1 Hour	August 24-27, 2015
U.S. Army Corps of Engineers: Flood Fight Assistance and Rehabilitation Authorities	1 Hour	August 24-27, 2015
Climate and Weather Records: Why Should You Care?	1 Hour	August 24-27, 2015
WeatherReady: Establishing a Robust Hazardous Weather Response Plan	1 Hour	August 24-27, 2015
Watershed Informed Budgeting Listening Session	1 Hour	August 24-27, 2015
Community Assistance Contacts Survey System (CACSS)	1 Hour	August 24-27, 2015
Regrow Kentucky and the Commonwealth Council for Community Recovery and Resilience	1 Hour	August 24-27, 2015
National Flood Insurance Program (NFIP) 101 Workshop	2 Hours	August 22-25, 2016
FEMA Elevation Certificate (EC) Workshop	4 Hours	August 22-25, 2016
Kentucky Division of Water (KDOW) Permitting Workshop	2 Hours	August 22-25, 2016
Community Rating System (CRS) and Elevation Certificates Workshop	3 Hours	August 22-25, 2016
Research, Data Delivery, & Hazard Assessment at Kentucky Geological Survey (KGS)	½ Hour	August 22-25, 2016
U.S. Army Corps of Engineers Programs and Authorities	½ Hour	August 22-25, 2016
Overview of the New MS4 Permit	½ Hour	August 22-25, 2016
City of Radcliff Goes Green to Protect Karst	1 Hour	August 22-25, 2016
Hazard Mitigation in the Commonwealth of Kentucky	1 Hour	August 22-25, 2016
Willow Run Watershed Success Story: Integrated Planning and Green Infrastructure	1 Hour	August 22-25, 2016
FEMA Substantial Damage Estimator (SDE) Workshop	4 Hours	August 22-25, 2016
Community Rating System (CRS) 101: Obtaining a 5% to 10% Discount on Flood Insurance for Your Community Workshop	2 Hours	August 22-25, 2016
Understanding FEMA's Letter of Map Change (LOMC) Process Workshop	2 Hours	August 22-25, 2016
Changes to the National Flood Insurance Program (NFIP) Plenary	1 Hour	August 22-25, 2016
Flood Insurance Q&A	1 Hour	August 22-25, 2016
Coal Run Village: Flood Mitigation in Action	½ Hour	August 22-25, 2016
Flood Inundation Mapping along the North Fork of the Kentucky River in Hazard, KY	½ Hour	August 22-25, 2016
Mitigating Water Risk: Managing the Quality and Quantity of Water Resources	½ Hour	August 22-25, 2016
Mitigation's Role in Disaster Declarations	1 Hour	August 22-25, 2016
Empowering Your Community with Community Rating System (CRS) Credit	1 Hour	August 22-25, 2016
Unmanned Aerial Systems (UAS)	1 Hour	August 22-25, 2016
Match-Making: Documenting the Value of Plan Participation Given 2 CFR 200	½ Hour	August 22-25, 2016
Working Smart with Point Cloud Big Data	½ Hour	August 22-25, 2016
Interagency Nonstructural Flood Risk Management Workshop	3 Hours	August 22-25, 2016
Maximizing Grant Opportunities by Utilizing a Flood-Prone Structure Inventory	½ Hour	August 22-25, 2016
Community Engagement for Hydraulic Inventory Data Collection	½ Hour	August 22-25, 2016
Leveraging Funding to Create Opportunities	½ Hour	August 22-25, 2016
How to Move Up in Community Rating System (CRS) from a Local Perspective	½ Hour	August 22-25, 2016
Building Public and Private Mitigation Partnerships: Louisville Silver Jackets	1 Hour	August 22-25, 2016

Training; Workshop	Duration	Conference Dates
Community Rating System (CRS) Credit for Emergency Manager Role and Emergency Operations Plans: CRS Activity 610	1 Hour	August 22-25, 2016
Floodplain Management Checklist Plenary	1 Hour	August 22-25, 2016
Decision Support Services from National Weather Service (NWS) Plenary	1 Hour	August 22-25, 2016
Using a Multi-Beam Echo-Sounder for Surveying Underwater Bathymetry	½ Hour	August 22-25, 2016
Oriole Mines Abandoned Mine Lands (AML) Reclamation Project	½ Hour	August 22-25, 2016
Technical Mapping Advisory Council (TMAC) Recommendations	½ Hour	August 22-25, 2016
ArcGIS Online to Share Information with Stakeholders	½ Hour	August 22-25, 2016
Metcalfe County Weather Radio Distribution Initiatives	½ Hour	August 22-25, 2016
Union County and FEMA's New Levee Analysis and Mapping Procedures	½ Hour	August 22-25, 2016
Flood Mitigation Assistance (FMA) Grant Program	1 Hour	August 22-25, 2016
National Flood Insurance Program (NFIP) Best Practices	1 Hour	August 22-25, 2016
Hopkinsville's Approach to Flooding: Confronting Flooding from Multiple Angles	1 Hour	August 22-25, 2016
High Water Mark Training: Classroom and Field Work	8 Hours	August 28-31, 2017
401 Water Quality Certification; Floodplain Permitting Workshop	3 Hours	August 28-31, 2017
Elevation Certificate (EC) Review and Community Rating System (CRS) Workshop	3 Hours	August 28-31, 2017
National Weather Service (NWS) SkyWarn Weather-Spotter Training	2 Hours	August 28-31, 2017
Using Technology to Increase Risk Awareness	½ Hour	August 28-31, 2017
Kentucky 2040: Your Legacy	½ Hour	August 28-31, 2017
Spanning the Ohio River with a Bi-State Project	½ Hour	August 28-31, 2017
So, I'm a Floodplain Coordinator. Now What?	1 Hour	August 28-31, 2017
Flood Mitigation Assistance (FMA) Grants	1 Hour	August 28-31, 2017
The Falmouth Flood of 1997 and Beyond	1 Hour	August 28-31, 2017
Using Increased Cost of Compliance (ICC) Funds for Mitigation	½ Hour	August 28-31, 2017
Best Practices for Hazard Mitigation Planning	½ Hour	August 28-31, 2017
Forging the Middle Ground Between Regression Equations and Detailed Basin Modeling	½ Hour	August 28-31, 2017
FEMA HMGP (404) Acquisitions and National Flood Insurance Program (NFIP)	1 Hour	August 28-31, 2017
The University of Kentucky (UK) Nicholasville Road Flood Mitigation Project	1 Hour	August 28-31, 2017
Community Rating System (CRS) 2017 Coordinator's Manual Updates	1 Hour	August 28-31, 2017
The Environmental Review Process	1 Hour	August 28-31, 2017
City of Radcliff Happy Valley/Quiggins Sinkhole Drainage Mitigation Project	1 Hour	August 28-31, 2017
Community Rating System (CRS) Activity 330: Public Outreach	1 Hour	August 28-31, 2017
Kentucky Silver Jackets Interagency Project: Southeastern Kentucky Loss Avoidance Study	½ Hour	August 28-31, 2017
Understanding the Building Code Effectiveness Grading Schedule (BCEGS)	1 Hour	August 28-31, 2017
The Phase II Permit Renewal	½ Hour	August 28-31, 2017
A Bridge Too Far: Kentucky Transportation Cabinet Mitigation	½ Hour	August 28-31, 2017
Implementation of Post-Construction Approaches throughout the U.S.	½ Hour	August 28-31, 2017
Using the FEMA Substantial Damage Estimator (SDE) Workshop	4 Hours	August 28-31, 2017
U.S. Army Corps of Engineers (USACE) and Silver Jackets	1 Hour	August 28-31, 2017
Community Rating System (CRS) Credit for Emergency Manager Role and Emergency Operations Plans: CRS Activity 610	1 Hour	August 28-31, 2017
Shelbyville Experiences in Stormwater Master Planning	1 Hour	August 28-31, 2017
Landslides in Kentucky: Mapping, Modeling, and Collaboration	1 Hour	August 28-31, 2017
Threat and Hazard Identification and Risk Assessment (THIRA): How It Affects Mitigation	1 Hour	August 28-31, 2017
Using Green Infrastructure to Mitigate Combined Sewer Overflows	1 Hour	August 28-31, 2017
Commonwealth of Kentucky/Louisville Metro Catastrophic Urban Flood Plan	½ Hour	August 28-31, 2017
Presenting Floodplain Management Content Inside a College Human Geography Course	½ Hour	August 28-31, 2017
The Migration of National Weather Service (NWS) Damage Surveys into the GIS World	1 Hour	August 28-31, 2017

Training; Workshop	Duration	Conference Dates
Transformative Integration at the Kentucky Geological Survey: Providing Better Support for Natural Hazard Mitigation and Resiliency	1 Hour	August 28-31, 2017
Kentucky Transportation Cabinet (KYTC) Natural Hazard Vulnerability Assessment on the National Highway System	½ Hour	August 28-31, 2017
Dam Owner Liability: Education and Proposed New Dam Safety Regulations	½ Hour	August 28-31, 2017
Wabash River Modeling: Using River Meander Software to Predict Future Channel Migration	½ Hour	August 28-31, 2017
Department for Local Government (DLG) State Flood Control Match Program	½ Hour	August 28-31, 2017
Dam Removal Success with Design-Build Partnering	½ Hour	August 28-31, 2017
New Seismic Soils Maps for Kentucky Counties	½ Hour	August 28-31, 2017
Kentucky Risk Assessments Plenary	1 Hour	September 17-20, 2018
Mitigation Saves: Keynote from Kevin Mickey of the Polis Center at Indiana University and its Multi-Hazard Mitigation Council, National Institute of Building Sciences	1 Hour	September 17-20, 2018
Commonwealth of Kentucky Enhanced Hazard Mitigation Plan Update for 2018	1 Hour	September 17-20, 2018
Hazard Mitigation Funding Opportunities	1 Hour	September 17-20, 2018
Probable Maximum Precipitation: How the Process Has Improved	1 Hour	September 17-20, 2018
Statewide Hazus Modeling for Floods	1 Hour	September 17-20, 2018
Flood Mitigation Assistance (FMA) Grants for Mitigation Superheroes	1 Hour	September 17-20, 2018
Why Use GIS in the Community Rating System (CRS)?	1 Hour	September 17-20, 2018
Department for Local Government (DLG) Flood Control Match Program and Community Emergency Relief Fund (CERF) Programs	½ Hour	September 17-20, 2018
Structure-Based Risk Assessment	½ Hour	September 17-20, 2018
100% Passive: No Manpower; No Electricity	½ Hour	September 17-20, 2018
National Flood Insurance Program (NFIP) 101 Workshop	2 Hours	September 17-20, 2018
Elevation or Demolition of Flood Hazard Structures along the Ohio River	1 Hour	September 17-20, 2018
Community Rating System (CRS) Activity 330 Outreach Projects	1 Hour	September 17-20, 2018
Hazard Mitigation Planning: What Does It Look Like?	1 Hour	September 17-20, 2018
Communicating Flood Risks to the Public	1 Hour	September 17-20, 2018
National Levee Inventory and Review Liaison Program	½ Hour	September 17-20, 2018
Flood Inundation Mapping	½ Hour	September 17-20, 2018
Reissuing the Phase II MS4 Permit	½ Hour	September 17-20, 2018
1D vs. 2D Dam Breach Modeling	½ Hour	September 17-20, 2018
Floodplain Inundation Mapping Using Combined 1D/2D Models	½ Hour	September 17-20, 2018
Targeted Stream Restoration	½ Hour	September 17-20, 2018
All You Ever Needed or Wanted to Know about U.S. Army Corps of Engineers	1 Hour	September 17-20, 2018
Understanding the 406 Mitigation Process	1 Hour	September 17-20, 2018
Introduction to Simple Low Impact Development (LID) Stormwater Treatment Design	1 Hour	September 17-20, 2018
Scenic Lake Dam: Liquefaction Analysis and Deep Mixing Method (DMM) Construction	1 Hour	September 17-20, 2018
Don't Leave 406 Mitigation Funding on the Table!	1 Hour	September 17-20, 2018
Emergency Management, Hazard Mitigation, and Nonpoint Source Programs	1 Hour	September 17-20, 2018
Lessons Learned in Risk Communication and Risk Management for Dams from Hurricane Joaquin (South Carolina) and Hurricane Matthew (North Carolina)	1 Hour	September 17-20, 2018
Common Floodplain Permit and Elevation Certificate Errors	1 Hour	September 17-20, 2018
Green Infrastructure in Mitigation	1 Hour	September 17-20, 2018
Preparing a Community for Natural Disasters through Notification Systems and Tornado Safe Rooms	1 Hour	September 17-20, 2018
Is the Repetitive-Loss Area Analysis Right for Your Community to Obtain Points in the Community Rating System (CRS)?	1 Hour	September 17-20, 2018
Kentucky Transportation Cabinet (KYTC) Bridge Program	1 Hour	September 17-20, 2018
Stream Restoration Projects	½ Hour	September 17-20, 2018
The Future of Floodplain Management in Kentucky	½ Hour	September 17-20, 2018

Training; Workshop	Duration	Conference Dates
Incorporating Green Infrastructure/Low Impact Development into Local Hazard Mitigation Plans	½ Hour	September 17-20, 2018
The Flood of '18: A Top 10 Flood on the Lower Ohio Plenary	1 Hour	September 17-20, 2018
Hydrologic Warning Systems: Helping Mitigation Superheroes Respond to Floods	½ Hour	September 17-20, 2018
Boyd County Landslide Projects Success Story	½ Hour	September 17-20, 2018
2018 Ohio River Flood Recovery, Louisville Metro	½ Hour	September 17-20, 2018
I-69 ORX Project Update	1 Hour	September 17-20, 2018
Are You Ready to Get Community Rating System (CRS) Credit for Your Work in Emergency Management?	1 Hour	September 17-20, 2018
Ten Lessons Learned from 20+ Flood Response Plans	1 Hour	September 17-20, 2018
Large-Scale Automated Engineering Uses, Benefits, and Credibility	1 Hour	September 17-20, 2018
The Connections Between Emergency Management and Floodplain Management	1 Hour	September 17-20, 2018
Drone Support in 2018 Flooding in Campbell County for Return on Investment (ROI)	1 Hour	September 17-20, 2018

Finally, most obvious in addressing the development of local officials through certifications, Kentucky currently is the only state to offer its local officials a nationally- and professionally-recognized Applicant Agent Certification through completion of Kentucky Emergency Management's (KYEM's) Applicant's Agent Certification Program (i.e., Applicant's Agent Training).

Since its first implementation in March of 2011, the Applicant Agent Certification Program has been offered regularly to all applicants and potential applicants of FEMA Public Assistance (PA) and FEMA Hazard Mitigation Assistance (HMA) programs. The week-long (28-hour) course covers all aspects of the preparation for, response to, and recovery from disaster events. Attendees are encouraged to participate in rigorous mitigation and recovery training and in debris removal planning. Course topics include training in Individual Assistance (IA), Public Assistance (PA), volunteer coordination, and 404 and 406 Hazard Mitigation. In addition to the emphasis on the Federal Emergency Management Agency (FEMA) programs, other state and federal agencies deliver instruction on various state and federal disaster grants, services, and opportunities. The Program is targeted to Public Assistance and Individual Assistance. However, its fundamental purpose in certifying local officials to more systematically and thoroughly collect data and manage projects has obvious HMA application and project implementation benefits.

Entities that have received the Applicant Agent Certification in the past include: county fiscal courts, cities, Emergency Management Agencies (EMAs), sanitation districts, school districts, local health departments, county road departments, electrical cooperatives, housing authorities, and consulting firms.

Agencies that have received the Applicant Agent Certification in the past include: the Area Development Districts (ADDs), Kentucky Transportation Cabinet (KYTC), Kentucky Department for Public Health (KDPH), Kentucky State Police, Kentucky Court of Justice, Kentucky Department of Parks, Kentucky Department of Fish and Wildlife (KDFW), Kentucky National Guard, the University of Louisville (UofL), and the University of Kentucky (UK).

Table E5. lists the scheduling of the Applicant Agent Certification Program from 2013 to 2017. It is noticeable that this list is short. It is intended that after 2018, the Applicant Agent Certification Program will be held more frequently given Kentucky's increase in disaster declarations and its recent disproportionate turnover in local elected officials that prompts demand for the Certification.

Table E5. Applicant's Agent Certification Program Offerings, 2013-2017[3]

Dates Held	Location	Sponsored By
February 2-4, 2013	Kentucky Emergency Management	Kentucky Emergency Management
September 8-12, 2014	Campbell County Fire Training Center	Kentucky Emergency Management
May 24-26, 2016	Kentucky Emergency Management	Kentucky Emergency Management
September 6-9, 2016	Governor's Emergency Management Workshop	Kentucky Emergency Management
April 11-13, 2017	Kentucky Dam Village State Resort Park	Pennyrile ADD; Purchase ADD

[3] Due to significant changes by FEMA in late 2017, to the policies, procedures, and delivery of the Public Assistance Program; the KYEM Applicants Agent Certification Course requires a significant restructuring. Two (2) disaster declarations in early 2018, have delayed the rewrite and delivery of this course. It is anticipated that the course will resume in early 2019.

Legislative Initiatives; Mitigation Councils; Public/Private Partnerships

Legislative Initiatives

The following discussion for this Enhanced Plan of legislative initiatives as evidence of a commitment to a comprehensive mitigation program is linked to the Standard Plan's discussion of State Mitigation Capabilities and its evaluation of state laws, regulations, policies, and programs related to hazard mitigation. The Standard Plan focuses on the legislation and accompanying regulation that authorizes the roles of Kentucky Emergency Management and Kentucky Division of Water toward the agencies' roles and subsequent capacities to implement all aspects of emergency management (i.e., PA C-G *and* FEMA's Hazard Mitigation Assistance grants) and floodplain management (i.e., NFIP, Community Rating System, RiskMAP, etc.).

To illustrate Kentucky's commitment to a comprehensive mitigation program, this Enhanced Plan section will produce a list of Kentucky Revised Statutes (KRS) that the author determined to apply to mitigation activity. The following list likely is not exhaustive: "Mitigation" is (rightfully) broadly defined. It is probably not an exaggeration to assume that legislation authorizing activity from any of Kentucky's executive agencies can be interpreted as affecting mitigation at least tertiarily. For example, the following list excludes legislation from Chapter 154 of the Kentucky Revised Statutes. Chapter 154 is legislation dealing with development and economic development. Given mitigation's potential for positive economic externality, economic development legislation likely can be linked to more obvious mitigation activity legislation.

The following list, then, simply illustrates the Kentucky Revised Statutes (KRS) that are most obviously pertinent to mitigation.

Table E6. Kentucky Revised Statutes (KRS) Relevant to Mitigation

Title	Chapter	Revised Statute	Regarding
V: Military Affairs	36: Department of Military Affairs	36.040	Duties of Adjutant General- Authority to Enter into Agreements with Federal Agencies
V: Military Affairs	36: Department of Military Affairs	36.240	Unit of Civil Air Patrol: Coordination of Unit Activities with Federal Government.
V: Military Affairs	36: Department of Military Affairs	36.260	Kentucky Community Crisis Response Board: Duties of Board
VI: Financial Administration	48: Budget	48.160	State Matching for Federal Funds
IX: Counties, Cities, and other Local Unites	Water Districts	74.090	Condemnation
IX: Counties, Cities, and other Local Unites	Water Districts	74.100	Acquisition of existing systems -- Extension of mains and laterals -- How paid for.
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.420	Eminent Domain
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.655	Prerequisites for Acquisition of Land
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.710	Ordinance adopting provisions of state statutes on blighted or deteriorated areas -- Vacant property review commission
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.715	Acquisition and disposal of blighted property by local government.
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.720	Certification of blight deterioration -- Notice to owner demanding abatement.
IX: Counties, Cities, and other Local Unites	99: Urban Renewal and Redevelopment	99.725	Eminent domain proceedings by local government.
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.163	Meetings
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.177	Finances
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.181	Assigning Other Agency Functions to Commission
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.293	Official Map Authorized
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.297	Official map, contents -- Hearing, posting.
IX: Counties, Cities, and other Local Unites	100: Planning and Zoning	100.307	Permits for Unprofitable Land
XII: Conservation and State Development	147: State and Area Planning; Regional Development	147.070	State planning functions of Governor's Cabinet.
XII: Conservation and State Development	147: State and Area Planning; Regional Development	147.075	State Planning Committee.
XII: Conservation and State Development	147: State and Area Planning; Regional Development	147.090	Preparation and coordination of major state improvement projects.
XII: Conservation and State Development	147: State and Area Planning; Regional Development	147.100	Miscellaneous projects.
XII: Conservation and State Development	147: State and Area Planning; Regional Development	147.110	Use of federal funds and state planning funds: When combined with 147.090 and 147.100, applies to mitigation by allowing state agencies to accept federal resources to plan for state improvement and miscellaneous projects.
XII: Conservation and State Development	147A: Program Development	147A.027	Orientation and continuing education training for planning and zoning officials and staff.
XII: Conservation and State Development	147A: Program Development	147A.029	Disbursement of funds for Local Match Participation Program.

Title	Chapter	Revised Statute	Regarding
XII: Conservation and State Development	149: Forestry	149.310	Southeastern Interstate Forest Fire Protection Compact.
XII: Conservation and State Development	149: Forestry	149.405	Entry in forest lands during drought -- Emergency proclamation -- Notice.
XII: Conservation and State Development	151: Geology and Water Sources	151.035	Official repository for groundwater information.
XII: Conservation and State Development	151: Geology and Water Sources	151.110	Water resources policy -- Duties of cabinet.
XII: Conservation and State Development	151: Geology and Water Sources	151.112	Planning process for management and development of water resources.
XII: Conservation and State Development	151: Geology and Water Sources	151.114	Long range water supply plans.
XII: Conservation and State Development	151: Geology and Water Sources	151.118	Financing development of water supply plans.
XII: Conservation and State Development	151: Geology and Water Sources	151.120	Public water of Commonwealth, what constitutes.
XII: Conservation and State Development	151: Geology and Water Sources	151.200	Temporary allocation of water supply among users -- Permit for transfer or diversion of water between streams or watersheds.
XII: Conservation and State Development	151: Geology and Water Sources	151.210	Use of water by landowner for domestic purposes -- Impounding and conserving water, permitted when.
XII: Conservation and State Development	151: Geology and Water Sources	151.230	Minimum standards for flood plain management to be set by administrative regulation -- Local application and effect.
XII: Conservation and State Development	151: Geology and Water Sources	151.250	Plans for dams, levees, etc. to be approved and permit issued by cabinet -- Jurisdiction of Department for Natural Resources.
XII: Conservation and State Development	151: Geology and Water Sources	151.291	Responsibility for safety of water barriers owned by Commonwealth -- Transfer of ownership of water barrier -- Responsibility for safety after transfer -- Approval of transfer.
XII: Conservation and State Development	151: Geology and Water Sources	151.295	Regular inspections of dams and reservoirs.
XII: Conservation and State Development	151: Geology and Water Sources	151.299	Liability for costs of cabinet emergency work -- Action for recovery of costs -- Foreclosure sale to satisfy judgment.
XII; Conservation and State Development	151: Geology and Water Sources	151.320	Enforcement of floodplain development permits by executive of county or city
XII: Conservation and State Development	151: Geology and Water Sources	151.550	Community Flood Damage Abatement Program.
XII: Conservation and State Development	151: Geology and Water Sources	151.600	Public information program for flood plain management and flood hazard mitigation programs.
XII: Conservation and State Development	151: Geology and Water Sources	151.601	601 County and multicounty 2020 water management planning councils.
XII: Conservation and State Development	151: Geology and Water Sources	151.605	Water service coordinators -- Supplemental funding -- Assistance by state agencies.
XII: Conservation and State Development	151: Geology and Water Sources	151.607	Annual review and prioritization of planning councils' plans.
XII: Conservation and State Development	151: Geology and Water Sources	151.611	Stream Restoration and Mitigation Authorities -- Powers -- Limitation on authority -- Legislative preferences on funding uses.
XII: Conservation and State Development	151: Geology and Water Sources	151.612	Assistance in establishing Stream Restoration and Mitigation Authority.
XII: Conservation and State Development	151: Geology and Water Sources	151.613	Authority membership -- Qualifications -- Terms -- Compensation -- Officers.

Title	Chapter	Revised Statute	Regarding
XII: Conservation and State Development	151: Geology and Water Sources	151.614	Authority powers and duties -- Reports.
XVII: Economic Security and Public Welfare	198B: Housing, Buildings, and Construction + Building Codes	198B.032	Housing, Buildings and Construction Advisory Committee.
XVII: Economic Security and Public Welfare	198B: Housing, Buildings, and Construction + Building Codes	198B.040	General powers and duties of the department.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.302	Establishment of 2020 water management areas by area development districts.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.304	Establishment of water service account within infrastructure revolving fund.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.306	Conditions for receiving assistance from fund for water-related infrastructure projects.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.308	Establishment of program to detect water loss from distribution lines -- Loans forgiven -- Funding.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.312	Incentive program encouraging infrastructure projects that provide and improve water service to needy areas -- Funding priorities.
XVIII: Public Health	224A: Kentucky Infrastructure Authority	224A.314	Study of water resource potential of underground coal mines and high yield water wells -- Funding for study.
XIX; Public Safety and Morals	227: Fire Prevention and Protection	227.240	Investigating and reporting on fires.
XIX; Public Safety and Morals	227: Fire Prevention and Protection	227.260	Records of fire inspections, investigations and losses.

Mitigation Councils

Kentucky Mitigation Council (KYMC)

The Kentucky Mitigation Council (KYMC) was developed in 1995. It meets quarterly to advise and consult with Kentucky Emergency Management's (KYEM) Mitigation staff. The official purposes of the Kentucky Hazard Mitigation Council are to:

- Identify and evaluate state and local hazards and vulnerabilities;
- Identify hazard mitigation strategies;
- Coordinate hazard mitigation resources;
- Review, rank, and recommend mitigation actions that have applied for funding under the FEMA Hazard Mitigation Grant Program (HMGP);
- Implement hazard mitigation projects and programs;
- Assist the State Hazard Mitigation Office on interim and final project inspections;
- Provide technical assistance to the State Hazard Mitigation Officer and local officials to reduce the hazard vulnerability of people, property, and infrastructure;
- Survey selected damages following a Presidential Disaster Declaration in order to develop (in conjunction with the Federal Hazard Mitigation Council) an Interagency Hazard Mitigation Report;
- Participate in regular and special business meetings;
- Receive and conduct hazard mitigation training;
- Assist Area Development Districts (discussed below) in developing regional (and oft-times multi-jurisdictional) hazard mitigation plans; and
- Plan for and develop the Commonwealth of Kentucky's hazard mitigation plan.

KYMC consists of up to 25 voting members in addition to technical advisors. Voting members represent: Kentucky Emergency Management (KYEM), the Kentucky Division of Water (DOW), Department for Local Government (DLG), the Kentucky Office of Homeland Security (KOHS), the Area Development Districts (ADDs), the Kentucky Transportation Cabinet (KYTC), the National Weather Service, the United States Army Corps of Engineers, the Kentucky Heritage Council, universities and colleges, local governments, and the Kentucky Association of Mitigation Managers (KAMM).

According to by-laws passed in 2016, voting members for KYMC are comprised of the following:

- Department for Local Government (DLG) (2 Members)
    - Economic Development Branch Representative
    - Kentucky State Clearinghouse Representative
- Kentucky Transportation Cabinet (KYTC)
- Kentucky Council of Area Development Districts (KCADD)
- Kentucky Office of Homeland Security (KOHS)
- Kentucky Heritage Council (represented by State Historic Preservation Officer)
- National Weather Service (NWS)
- United States Army Corps of Engineers (USACE)
- Kentucky Association of Mitigation Managers (KAMM)
- Local Practitioners (4 Members)
- University and College Emergency Management representatives (2 Members)
    - University of Kentucky (UK) Representative
    - University of Louisville (UofL) Representative
- Kentucky Division of Water (KDOW) (2 Members)
    - Agency Representative
    - NFIP Coordinator
- Kentucky Emergency Management (KYEM) (7 Members)
    - Division Director
    - Assistant Director of Administration
    - Recovery Branch Manager
    - Area Managers (2 Representatives)
    - Intergovernmental Liaison
    - State Hazard Mitigation Officer (SHMO)

Non-voting technical advisors include:

- University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP)
- University of Louisville Center for Hazards Research and Policy Development (UofL CHR)
- Federal Emergency Management Agency (FEMA)
- Kentucky Emergency Management (KYEM) staff positions not included as aforementioned voting members

Silver Jackets

Kentucky also participates in the “Silver Jackets” program. This is a state-level program which includes participation from the United States Army Corps of Engineers (USACE), FEMA, other Federal agencies, and multiple state agencies. The goal of the program is to create an interagency team to develop and implement solutions to state natural hazard priorities. The Silver Jackets Program provides a formal and consistent strategy for an interagency approach to planning and implementing measures to reduce the risks associated with natural hazards. The program’s primary goals are to leverage information and resources, improve public risk communication through a united effort, and create a mechanism to collaboratively solve issues and implement initiatives.

The Silver Jackets program provides communities with an opportunity to work with all appropriate state and Federal agencies to develop a comprehensive flood risk management program. The Kentucky Emergency Management (KYEM) State Hazard Mitigation Officer (SHMO) and staff and University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP) staff promote mitigation project development through its representation on the Silver Jackets team, thereby integrating both FEMA and the Commonwealth’s goals to mitigate flood-related damages and losses statewide. Related to this last statement, the Silver Jackets Program is one means by which Kentucky shows commitment to a comprehensive mitigation program by implementing mitigation into its post-disaster recovery operations.

Federal agencies participating in Kentucky’s Silver Jackets include the United States Army Corps of Engineers (USACE), the Federal Emergency Management Agency (FEMA), the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA), United States Geological Survey (USGS), and the National Weather Service (NWS). Commonwealth of Kentucky and local agencies participating in Silver Jackets include Kentucky Division of Water (KDOW), Kentucky Emergency Management (KYEM), University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP), the Kentucky Geological Survey (KGS) at the University of Kentucky, Louisville/Jefferson County Metropolitan Sewer District (MSD), and Franklin County.

Of particular note evidencing both commitment to a comprehensive mitigation program and to plan integration, during this 2013 to 2018 mitigation plan cycle, Kentucky’s Silver Jackets team began integrating itself with Indiana’s Silver Jackets team. The integration’s benefits are obvious given Indiana’s border proximity with the following major population centers for Kentucky: downtown Louisville/Jefferson County, City of Madisonville (pop. 19,399), City of Owensboro (pop. 59,273), City of Henderson (pop. 28,841), and City of Radcliff (pop. 22,490). The integration is beneficial to Indiana given Kentucky’s border proximity to the following major population centers for Indiana: Evansville (pop. 119,477), Jeffersonville (pop. 61,051), and Clarksville (pop. 21,920). Further, of course, these population centers represent cross-state economic activity and productivity, as well.

On June 20, 2017, the Kentucky and Indiana Silver Jackets team met formally (as the “INKY” Silver Jackets) to discuss the following topics: fluvial erosion hazards programs, flood inundation mapping, low-head dams, non-levee embankments, flood resilience planning, loss avoidance studies, technology development, data sharing, stream gaging challenges and successes, opportunities for collaborative efforts and pilot projects, and networking contacts.

Moving beyond Kentucky’s 2013 to 2018 planning cycle, Kentucky Silver Jackets team has begun and intends to continue integrating with Ohio’s Silver Jackets team toward collaboration on the entire Ohio River Basin.

Kentucky Association of Mitigation Managers

The Kentucky Association of Mitigation Managers (KAMM) represents another mitigation council that conveys Kentucky's commitment to a comprehensive mitigation program.

The Kentucky Association of Mitigation Managers (KAMM) serves as Kentucky's official Association of State Floodplain Managers (ASFPM) chapter; but, was formed to promote the integration with floodplain management and mitigation in Kentucky. KAMM's members generally represent local floodplain coordinators, planning and zoning officials, engineers, surveyors, GIS specialists, hydrologists, and local emergency managers.

The purpose of KAMM is to provide a means for state and local floodplain managers to join with others within the emergency management and hazard mitigation field. As previously listed, KAMM provides trainings and workshops, many of which provide professional credits to emergency managers, floodplain coordinators/managers, and planners. Additionally, KAMM exists to advance the study, research, and exchange of information on the technical aspects of floodplain management to reduce flood damage within the Commonwealth of Kentucky. Kentucky Emergency Management (KYEM) Mitigation Branch and University of Kentucky Hazard Mitigation Grants Program (UK-HMGP) staff currently serve on the KAMM Executive Board, helping to ensure mitigation is interwoven into floodplain management activities.

Since its founding, KAMM has served as a pivotal capability for Kentucky's mitigation program and implementation of FEMA programs and initiatives: It has always been able to provide significant training and outreach and has been a means for networking and the subsequent communication and integration that results. However, it is not controversial to claim that over the past five years since Kentucky's previous Enhanced mitigation plan was written, KAMM's breadth, organization, and subsequent influence in mitigation has grown: KAMM officially became a non-profit 501 (c)(3) organization during the 2013-2018 Kentucky mitigation plan cycle. It formalized a Memorandum of Agreement with the Kentucky Association of Mapping Professionals (KAMP). KAMM provides a significant in-kind source for Kentucky's contribution to its mitigation grants.

KAMM's membership has very obviously diversified, evidencing its importance to the mitigation community and the Commonwealth's commitment to a comprehensive mitigation program. To illustrate this, below is a list of KAMM membership organization representation from its 2017 and current (i.e., 2018) rolls:

Table E7. KAMM Membership Organization Representation, 2017 and 2018

Organization Represented as KAMM Member
AECOM
Augusta, City of
Bailey Surveys, Inc.
Bardstown, City of
Barren River Area Development District
Bath County Fiscal Court
Bell Engineering
Benton, City of
Berea, City of
Big Sandy Area Development District
Boone County Building Department
Bowling Green, City of
Boyd County Fiscal Court
Brandenburg, City of
Buffalo Trace Area Development District
Bullitt County Planning and Zoning
Burgess and Niple Engineering and Architecture
Calvert City, City of
Campbell County Emergency Management Agency
Campbell County Fiscal Court
Campbell County Planning and Zoning
Campbellsville E-911
Carrollton Utilities
Carter County Floodplain Office
Christian County Emergency Management Agency
City-County Planning Commission (CCPC) (Bowling Green, City of/Warren County)
Civil and Environmental Consultants, Inc.
Community and Development Services (CDS) (Hopkinsville, City of)
Covington, City of
Crittenden County Fiscal Court
Daviess County Emergency Management Agency
Daviess County Fiscal Court
Daviess County Public Works
DCI Engineers
Department for Local Government (DLG)
Edmonson County Emergency Management Agency
Elizabethtown, City of
Erickson Contract Surveying
Falmouth, City of
Federal Emergency Management Agency (FEMA), Region IV
Florence, City of
Frankfort, City of
Fulton County Fiscal Court
GeoMorphics, Inc.
Georgetown-Scott County Planning Commission (GSCPC)
Georgia Gwinnett College
Glasgow, City of

Organization Represented as KAMM Member
Gomez and Sullivan Engineers
GPD Group, Inc.
Grant County Emergency Management Agency
Grayson, City of
Hardin County Engineering Department
Hart County Emergency Management Agency
Hartford/Beaver Dam Planning and Zoning Commission
Henderson City-County Planning Commission
Henderson County Codes Department
Hopkins County
Hopkins County Joint Planning Commission
Hopkinsville Surface and Stormwater Utility (HSSU)
Integrated Engineering
Jacobi Toombs and Lang Engineers
Kentucky Division of Abandoned Mine Lands (DAML)
Kentucky Division of Geographic Information (DGI)
Kentucky Division of Water (KDOW)
Kentucky Geological Survey (KGS)
Kentucky Transportation Cabinet (KYTC)
L&R Engineers, Inc.
Lake Cumberland Area Development District
Land Design and Development, Inc.
Lawrence County Fiscal Court
Leslie County
Lincoln Trail Area Development District
London, City of
Louisville Metropolitan Sewer District (MSD)
Louisville/Jefferson County Metropolitan Government
Madison County Fiscal Court
Magoffin County
Mason County Fiscal Court
Maysville/Mason County Emergency Management Agency
Mercer County Joint Planning and Zoning Commission
Metcalfe County Emergency Management Agency
Millersburg, City of
Moore Enterprises
Morehead, City of
Mountain Association for Commmunity and Economic Development (MACED)
Mt. Washington, City of
Murray, City of
National Weather Service (NWS)
Neel-Schaffer, Inc.
Nicholasville, City of
Northern Kentucky Area Development District
Oldham County Planning and Development Services
One Chief, LLC
Owen County Emergency Management Agency
Owensboro, City of

Organization Represented as KAMM Member
Paintsville, City of
Paintsville/Johnson County Emergency Management Agency
Pendleton County Emergency Management Agency
Pendleton County Fiscal Court
Pendleton County Joint Planning Commission, Department of Planning and Zoning
Pennyrile Area Development District
Perry County Emergency Management Agency
Phoenix-Diamond, Inc.
Pike County Fiscal Court
Pikeville, City of
Planning and Development Services of Kenton County
Prestonsburg Fire Department
PRIME AE Group, Inc.
Purchase Area Development District
QK4, Inc.
Raceland, City of
Radcliff, City of
Richmond, City of
Rowan County Fiscal Court
Scottsville-Allen County Planning Commission
Shelby County Emergency Services
Shelbyville, City of
Shepherdsville, City of
Silver Grove, City of
Simpson County Emergency Management Agency
Stantec
Strand Associates, Inc.
Taylorsville-Spencer County Joint Planning and Zoning
Tetra Tech
United States Army Corps of Engineers (USACE)
United States Geological Survey (USGS)
University of Kentucky
Vine Grove, City of
Warren County Emergency Management Agency
Warren County Public Works
Washington County Emergency Management Agency
Washington County Fiscal Court
Wayne County Fiscal Court
Winchester, City of

Public/Private (Non-Profit) Partnerships

University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP)

The Martin School of Public Policy and Administration at the University of Kentucky houses the Hazard Mitigation Grants Program (UK-HMGP) Office. UK-HMGP exists primarily to perform the functions designated to it by Kentucky Emergency Management (KYEM). UK-HMGP represents a commitment to a comprehensive mitigation program: KYEM contracts the Martin School of Public Policy and Administration to use its expertise in public administration, its staff, its resources, its historical/institutional knowledge about the commonwealth, its graduate assistants, its flexibility with staff travel, and its various technical and facility options that are available in all counties throughout the state. Through this contract, KYEM does not have to support expanded infrastructure: The UK-HMGP Office removes from KYEM the sunk cost of staff recruitment and development, staff maintenance, and the need for recurring budget allocations. This combines flexibility and specialization while reducing custodial and recurring budgetary obligations. Contracting with the UK-HMGP Office and the Martin School of Public Policy and Administration brings efficiency: KYEM can do more and accomplish more in mitigation in less time and expending less money by being able to offload projects and mitigation research to UK-HMGP while it focuses on its other necessary day-to-day agency tasks and pursues other mitigation-related projects manageable by its existing staff and budget. Because UK-HMGP exists primarily to support KYEM, UK-HMGP can devote itself entirely to and specialize in mitigation activity and outreach to a degree and an extent that would be unmanageable if operated from within a state agency tasked (as all state agencies countrywide are) with ever-increasing responsibility and scope.

Because UK-HMGP operates autonomously and analogously to faculty within the Martin School of Public Policy and Administration at the University of Kentucky, UK-HMGP can devote its resources to pursuing those aspects of mitigation that are particularly time-consuming and ill-suited to the labor, staffing, and general administrative regulations and control limitations of an executive agency. As an example, UK-HMGP staff devote its time to developing projects targeting Repetitive-Loss and Severe Repetitive-Loss properties specifically intended for submission to FEMA's Flood Mitigation Assistance (FMA) grant program. Another example, UK-HMGP houses the commonwealth's current hazard mitigation planner. This position further manages all mitigation planning projects throughout the commonwealth and reviews, edits, rewrites, and provides personalized and intensive mitigation planning outreach toward local hazard mitigation plans. The above two examples represent exceedingly time-consuming tasks. Writing and maintaining the commonwealth's hazard mitigation plan while managing projects, providing one-on-one technical assistance, reviewing/editing/rewriting local hazard mitigation plans, and constantly training to integrate the ever-broadening expansion of federal and state planning and data collection initiatives requires the capability to work outside of strict 37.5-hour labor rules and other productivity-consuming controls that generally characterize and govern executive agencies.

Area Development Districts

Kentucky's Area Development Districts (ADDs) serve as de facto examples of public/private (non-profit) partnerships. For the purposes here, the important thing to note is that ADDs are not state agencies. They are partnerships of local governments/counties: By sharing the ADDs' staffs, counties collectively are able to access the professional expertise which many counties and cities individually could not afford.

ADDs also serve important integrative functions for mitigation: ADDs help their communities apply for large-scale capital projects or for perennial resource needs. These project types typically involve the knowledge of and subsequent leveraging of multiple federal and state resources that operate under varying rules, regulations, and limitations. ADDs coordinate much of this resource integration/leveraging.

The idea that would become the "Area Development District" was conceived for Kentucky in the early 1960s with the creation of Area Development *Councils* that were organized *within* each county comprising "Kentucky." The federal Appalachian Regional Development Act and the Public Works and Economic Development Act (both passed in 1965) allowed for the establishment and authorization of the Area Development *District* which provided an organizational and administrative linking of counties who shared common economic and general development interests[4]. The Appalachian Regional Development Act of 1965 was the vehicle for direct federal aid to Appalachia which spurred the need for ADDs specifically in that region. The Public Works and Economic Development Act established the Economic Development Administration within the U.S. Department of Commerce which would provide federal grants aimed toward employment and industrial policy within economically distressed areas more generally. This provided impetus to establish the ADD concept state-wide: Professional administration and substantial resources would be required to apply for these grants and manage them. From 1966 to 1972, all 15 Kentucky's ADDs were established.

It is also relevant to note that Kentucky's ADDs are not only partners to the Commonwealth of Kentucky's local governments due to their continued usefulness and success in providing the environment and support necessary for Kentucky to increase its commitment to a comprehensive mitigation program. Rather, Kentucky's ADDs are codified into Kentucky's laws: Kentucky Revised Statute (KRS) 147A.050 legally establishes the 15 Kentucky Area Development Districts (ADDs).

[4] This, of course, implies that most such "Districts" are arranged according to "geographic" commonalities: Geography is assumed to be correlated with economic and development needs. Thus, economic/development commonalities are correlated with geographic commonalities.

Private Sector Working Group (PSWG)

To show its commitment to a comprehensive mitigation program via partnership with the private (and non-profit) sectors, the Commonwealth of Kentucky via Kentucky Emergency Management (KYEM) established a Private Sector Work Group (PSWG) that mirrors the philosophy behind its national counterpart.

From KYEM's website[5]:

> "The goal in the creation of the program was to draft a comprehensive disaster response and recover plan that builds on the strengths, experience and expanding capabilities of our private-sector partners. The resulting Private Sector Working Group forms a well-organized collaborative network of Commonwealth corporate, business and industry entities that work in concert with emergency management tasking to re-establish the necessary community infrastructure required to speed up the recovery process.
>
> "The Private Sector Working Group meets on a bi-monthly basis, supplemented with conference calls and KYEM annual workshop educational tracks. Meeting agenda items include updates of recent response and recovery efforts, member presentations, technology updates, upcoming training initiatives, regional and national PS overviews and sector-based workshop sessions. During agency EOC [Emergency Operations Center] activations, members are notified to monitor and respond to mission requests via the WebEOC Virtual Business EOC and SharePoint portals.
>
> "…Following lessons learned in the 2009 Ice Storm [FEMA-HMGP-DR-1818], Kentucky began engaging national, regional, state, and local corporate, business, and industry in a collaborative planning effort, building private-public partnerships in support of disaster response and recovery.
>
> "The PSWG includes 'Decision Maker' representatives building the program with a bottom-up format; determining the needs of the private sector during a crisis event; and providing member organizations with opportunities for situational awareness, training, exercise, and advancements in technology.

[5] Kentucky Emergency Management. "Private Sector Working Group." Website: https://kyem.ky.gov/Who%20We%20Are/Pages/PSWGMore.aspx. [Accessed August 31, 2018].

“The program is funded through the agency general-fund budget process. The PSWG program staffing is accomplished through the existing Resource Management Section. Funding streams for technology acquisition and infrastructure integration is accomplished through EOC upgrade projects.

“Collaborative efforts continue within the PSWG in the development of a variety of concept-based projects including training initiatives for senior crisis managers, mutual aid concepts, application integration, sector-specific resource management and regional state-private sector partnerships.

“The primary objective of the program is to build on the strengths, experience, and expanding capabilities of [the Commonwealth of Kentucky’s] private sector partners. To that end, the PSWG has demonstrated the effectiveness of the program during exercise events and responses to Commonwealth disasters.

“During Day 1 of [a]National Level Exercise (NLE)…, more than 100 Private Sector representatives responded to an email-based notification of the alert system. Mission-tasking to the Private Sector Working Group brought real-time responses posted to the Virtual BEOC hosted on a secure WebEOC portal, with sitreps and briefing documents access via a SharePoint portal.

“PSWG members enabled ingress of their service fleet to the impact zone with the use of the virtual applications E-Placard and E-Roster. In one example, a national Private Sector corporate member was given a no-notice mission to provide air and ground logistics to an eight-county area within the New Madrid Seismic Zone. A response was received within 30 minutes of the tasking, via a real-time conference call involving eight senior corporate managers located in different logistics sections across the country.

“Private Sector response to recent Commonwealth disasters included in-person staffing at the State EOC and access from their corporate centers through the Virtual Business EOC. Mission-tasking for energy, utility, transportation, and commodity Private Sectors is integrated into the Resource Management process.

> "The program began with an initial schedule of quarterly meetings and consistent membership of 20-30 organizations. Plenary sessions were hosted to determine the needs of [the Commonwealth of Kentucky's] Private Sector members in responding to disaster events within the Commonwealth. Following sessions were devoted to workshops with sector-based groups – [i.e.,] Utilities, Commodities, Transportation, Communications, Infrastructure/Logistics and Food/Hospitality – to format the infrastructure requirements to bring the Private Sector back on line within the most efficient timeline.
>
> "[Later]…the program increased the in-person contacts to bi-monthly meetings with interim conference calls and membership of 50-60 organizations. Extensive training and exercise events were directed toward Private Sector readiness for [a National Level Exercise] event. During this period, the program tested and implemented several major technology advances to include virtual credentialing applications E-Placard and E-Roster, a dedicated SharePoint Portal, and integration with WebEOC through the Virtual BEOC.
>
> "Key members of the PSWG are routinely seated in the State EOC during event activations. Those organizations routinely include major power, utility, and commodity crisis managers. In addition, the full complement of Private Sector representatives has unlimited real-time access to sitreps and resource management mission requests through participation in the Virtual Business EOC (VBEOC) hosted on [Kentucky Emergency Management's] WebEOC and SharePoint portals.
>
> "In March 2010, KYEM established Kentucky's Private Sector Working Group (PSWG). The PSWG, administered by KYEM, endeavors to build partnerships within the private sector community to help identify and fill gaps in the resources and supply-chain during emergency response and recovery efforts. The PSWG is designed to act as a force multiplier between the private and public sectors in order to mitigate the impact of critical incidents, natural disasters, and crisis response events."

It is important to acknowledge that despite the seemingly core purpose and much of the activity of KYEM's Private Sector Working Group's concentration on disaster response, the PSWG's input has had integrative effects with mitigation. This is especially true within the nexus comprising Public Assistance and mitigation, i.e., in assisting in vulnerability identification for PA C-G and 406 Mitigation.

Providing a Portion of the Non-Federal Match for the HMGP

A mitigation project selected by the Commonwealth for application and approved for a Hazard Mitigation Grant Program grant by FEMA receives said grant as reimbursements for eligible expenditures made upfront toward completion of the Scope-of-Work of the approved mitigation project. The FEMA Hazard Mitigation Grant Program (HMGP) grant reimburses 75% of eligible expenditures made toward the approved mitigation project. The (sub-)recipient of the FEMA HMGP grant is responsible for 25% of the outlays required to complete the approved mitigation project.

The Commonwealth of Kentucky shows its commitment to hazard mitigation by recognizing that for many local jurisdictions, this 25% contribution still prohibits hazard mitigation projects, or, at the very least, prohibits some of the more costly and capital-intensive projects that many local jurisdictions need to undertake in order to effectively mitigate the deleterious effects from natural hazards. Consequently, the Commonwealth of Kentucky contributes 12% of the 25% non-federal match for which the (sub-)recipient of an HMGP-funded project is responsible.

This 12% contribution to the approved mitigation project funded with an HMGP grant is provided as cash manifest as a higher percentage reimbursement for eligible expenditures made toward the approved mitigation project. In other words, the sub-recipient of an HMGP grant will receive 87% reimbursement for eligible outlays toward the completion of the approved mitigation project Scope-of-Work rather than just receive 75% federal reimbursement.

The 12% contribution applies only the Hazard Mitigation Grant Program and applies only to certain types of entities receiving the HMGP grant. The sub-recipient entities eligible to receive the Commonwealth’s 12% contribution toward the 25% contribution required of an HMGP grant primarily consists of counties and cities.

Encouraging Local Governments to Use a Current Version of a Nationally-Applicable Model Building Code or Standard that Addresses Natural Hazards as a Basis for Design and Construction of State-Sponsored Mitigation Projects

Legislation (Kentucky Revised Statute 198B.050) governs that "[the Commonwealth through the Department of Housing, Buildings, and Construction under the Public Protection Cabinet] shall adopt and promulgate a mandatory Uniform State Building Code that establishes standards for the construction of all buildings…in the state. The code shall provide that the review and approval, as necessary, of building plans for conformance with the Uniform State Building Code prior to construction approval shall be conducted only by the department [i.e., the Department of Housing, Buildings, and Construction] or a local government or governments delegated such responsibilities by this chapter [i.e., Kentucky Revised Statute Chapter 198B], and any exceptions to this policy shall be explicitly stated in the code."

As of June 2018, Kentucky (through its Department of Housing, Buildings, and Construction) has adopted as the Uniform State Building Code both the Kentucky Building Code 2018 and the Kentucky Residential Code 2018.

As cited from the "2018 Kentucky Building[6]" code [p. i]:

> "The *Kentucky Building Code* is based upon the *2015 International Building Code* published by the International Code Council, Inc., with Kentucky-specific amendments. It provides design and construction standards to ensure the public safety, health, and welfare insofar as they are affected by building construction and to secure safety to life and property from all hazards incident to the occupancy of buildings, structures, or premises. This edition presents the code with changes approved by the Department of Housing, Buildings and Construction through April 2018.
>
> "The *Kentucky Building Code* is a 'mini/maxi' code, meaning that it is a statewide, uniform, mandatory building code and no local government shall adopt or enforce any other building code governing commercial construction. The *Kentucky Residential Code* shall govern detached single family dwellings, two-family dwellings and townhouses and is adopted as 815 KAR 7:125."

[6] The 2018 Kentucky Building Code can be downloaded from the Department of Housing, Buildings, and Construction's website: http://dhbc.ky.gov/bce/Pages/default.aspx. [Last accessed 9/2/2018]

The "2018 Kentucky Residential Code[7]" contains identical language save the replacement of "Building" with "Residential" [p. i]:

> "The *Kentucky Residential Code (KRC)* is essentially *the 2015 International Residential Code* published by the International Code Council, Inc., with the specific Kentucky amendments. It provides minimum standards to ensure the public safety, health and welfare insofar as they are affected by building construction, and to secure safety to life and property from all hazards incident to the occupancy of buildings, structures, or premises. This edition presents the code with changes approved by the Kentucky Department of Housing, Buildings and Construction through April 2018.
>
> *"The Kentucky Residential Code* is a 'mini/maxi' code, in that it establishes minimum and maximum building code requirements for detached single-family dwellings, two-family dwellings and townhouses and no local government shall adopt or enforce any other building code on these units."

Of particular note about the adoption of the Kentucky Building Code for 2018 resembling the 2015 International Building Code is the following connection made by John Ingargiola, Lead Physical Scientist for FEMA's Building Science Branch, at the 2017 International Code Council (ICC) Annual Conference held in Columbus, Ohio in September of 2017[8]: FEMA was one of the first federal agencies to work within the original model building code development process. The International Building Code (IBC) that the Kentucky Building Code mimics used to be the Building Officials Code Administrators International's (BOCA's) National Building Code (NBC), the International Conference of Building Officials' (ICBO's) Uniform Building Code (UBC), and the Southern Building Code Congress International's (SBCCI's) Standard Building Code (SBC).

In 1984, FEMA successfully got adopted into what was then the NBC, UBC, and SBC and would later become the IBC National Flood Insurance Program (NFIP) criteria.

In 1985, FEMA developed the *NEHRP Recommended Seismic Provisions* for potential inclusion into model building codes. In 1991, BOCA and SBCCI adopted these recommended seismic provisions into their respective model building codes (i.e., the NBC and SBC) that would later become part of the IBC.

Regarding the most recent model building code, code adoptions regarding current standards for wind (and other atmospheric hazards) derive primarily from the American

[7] The 2018 Kentucky Residential Code can be downloaded from the Department of Housing, Buildings, and Construction's website: http://dhbc.ky.gov/bce/Pages/default.aspx. [Last accessed 9/2/2018].

[8] Mahoney, Michael, & John Ingargiola. (2017). "The Future of Hazard Resilience: Building Codes and Best Practices." Presented by John Ingargiola. Presented at International Code Council (ICC) 2017 Annual Conference in Columbus, Ohio.

Society of Civil Engineers (ASCE) Standard ASCE/SEI 7 series from which International Building Codes are based. FEMA, however, is integrated into ASCE/SEI committees.

So, if the Kentucky Building Code 2018 de facto is the International Building Code (IBC) 2015, then Kentucky has adopted a nationally-applicable model building code that addresses natural hazards as a basis for design and construction: The IBC 2015 represents historic and continuing integration with design and construction toward the flood risk, toward the earthquake/seismic risk, and toward risk from wind events. Further, the difference between the Kentucky Building Code 2018 and the IBC 2015 concern "Kentucky-specific amendments." These "Kentucky-specific amendments" add design and construction criteria that address the hazards associated with karst (i.e., the risk for sinkholes) and addresses the landslide hazard. Kentucky's Building Code 2018 incorporates natural hazards as a basis for design and construction.

Whether the Kentucky Building Code 2018 and its mirroring of the 2015 International Building Code counts as "current" is relevant. Again, from the 2017 International Code Council (ICC) conference in Columbus, Ohio, we know that then-new FEMA policy required that the 2015 IBC be adopted as a requirement for receiving federal assistance. Further, Executive Order 13717 (E.O. 13717) requires that for *new* replacement structures, federally-funded structures must be built to a seismically-acceptable building code that references specifically the 2015 IBC that is based ASCE/SEI 7-10. Given FEMA policy and E.O. 13717, this Enhanced Plan interprets the adoption of the Kentucky Building Code 2018 as based on the 2015 IBC as being "current."

The Commonwealth encourages its local governments to adopt model building codes in a few ways. One way obviously stems from the above discussion: The Commonwealth adopts de facto the current International Building Code by adopting the Kentucky Building Code for 2018 on August 22, 2018 (effective January 1, 2019). The 2018 Kentucky Building Code is overseen by Kentucky's Division of Building Code Enforcement (DBCE) under the Department of Housing, Buildings, and Construction (DHBC) (under the Public Protection Cabinet). DBCE, then and according to its mission statement (i.e., its raison d'être), is responsible for reviewing plans and making inspections of new building construction, as well as additions, alterations, renovations and buildings involved in a change of occupancy (use) to ensure compliance with adopted codes and referenced standards. DBCE has and continues to encourage local governments to allow DBCE to enact its mission statement by submitting plans and requesting inspections on new building construction, etc. This encouragement is especially true and given if the new building construction is wholly or partly paid using federal dollars.

A second way that Kentucky encourages local governments to adopt model building codes involves a type of new construction particularly relevant to Kentuckians in areas of economic distress and/or geographic difficulty: manufactured housing. Illustrating commonwealth and federal agency integration, while the adoption of the 2018 Kentucky Residential Code de facto implies adoption of a current International Residential Code, there is an amendment to the 2018 Kentucky Residential Code regarding manufactured homes that presumably differs from the International Residential Code. The International

Residential Code contains an Appendix E that concentrates on standards for manufactured homes. Meanwhile, the 2018 Kentucky Residential Code exempts[9] manufactured homes. But, the 2018 Kentucky Residential Code exempts manufactured homes for an integrative/collaborative reason: Manufactured homes in Kentucky are supposed to comply with federal Department of Housing and Urban Development (HUD) construction standards. Consequently, Kentucky's Division of Building Code Enforcement (DBCE) houses a separate Manufactured Housing Section. The Manufactured Housing Section under DBCE (under DHBC under the Public Protection Cabinet) acts as the State Administrative Agency (SAA) that is under contract with HUD. Thus, the Manufactured Housing Section under DBCE certifies for HUD under its contract as SAA that all new manufactured homes imported into the Commonwealth or constructed within the Commonwealth comply with HUD standards.

Additionally, the Manufactured Housing Section under DBCE licenses retailers of manufactured homes and recreational vehicles and issues certificates of acceptability to manufacturers of homes to do business with the Commonwealth. The Section certifies installers of manufactured homes to set homes to the standards required by statutes and regulations.

As an SAA, the Manufactured Housing Section is required to respond to any complaint filed regarding manufactured housing. It inspects "used" units – either manufactured homes or recreational vehicles – entering the Commonwealth titled in other states for the purpose of titling within the Commonwealth. It also is involved in communities and mobile home parks when local health departments or fire departments request assistance to life safety issues.

Part of the Manufactured Housing Section of the DBCE's outreach and encouragement for local governments to adopt nationally-applicable model standards involves partnering with the Kentucky Manufactured Housing Institute to provide the online training necessary for individuals to be certified installers or managers of manufactured housing.

Related, a third way that Kentucky encourages local governments to adopt nationally-applicable model building codes and standards is through legislative requirement to certify building inspectors for local governments. That Kentucky's Department of Housing, Buildings, and Construction (DHBC) trains and certifies local building inspectors is codified as Kentucky Revised Statute (KRS) 198B.090(1)(a). Specifically, KRS 198B.090(1)(a) requires the Department of Housing, Buildings and Construction to create and administer a building inspector's certification program, which is designed to ensure uniform statewide enforcement of applicable state building codes. KRS 198B.090(1)(a) is implemented through Kentucky Administrative Regulation (KAR): 815 KAR 7:070 establishes the testing, training and continuing education requirements for qualifying persons to become inspectors for the enforcement of the Kentucky Building Code, and to identify the level of their responsibilities for this enforcement.

[9] 2018 Kentucky Residential Code does not exempt the exterior electric, water, and sewer connections from it. And it does not exempt additions from the 2018 Kentucky Residential Code.

A fourth way that Kentucky encourages local governments to adopt nationally-applicable model building codes again involves the 2018 Kentucky Residential Code. As mentioned above, in addition to adopting de facto a current version of the International Building Code through its adoption of the Kentucky Building Code for 2018, Kentucky also adopted a current version of the International Residential Code (IRC). The content, timing, and adoption of either a new Kentucky Building Code or Kentucky Residential Code is settled by the Kentucky Building Code Task Force and Kentucky Residential Code Task Force. Interestingly for this statewide mitigation planning cycle, in 2015 while the Kentucky Residential Code Task Force was reviewing the 2015 International Residential Code for possible amendment-cum-adoption, the Task Force was assigned an additional function by Kentucky's legislature through House Joint Resolution (HJR) 134. HJR 134 required the Kentucky Residential Code Task Force of the DBCE of the DHBC to research the pros and cons of statewide enforcement of the Kentucky Residential Code for one- and two-family dwellings. The Kentucky Residential Code Task Force was supposed to present its findings to the Interim Joint Committee on Local Government in November of 2015. Findings were updated in March of 2016. While the findings of the Kentucky Residential Code Task Force seemingly have not been officially published, that such legislative and research initiative was undertaken in 2015 and 2016 is evidence of Kentucky's commitment to a comprehensive mitigation program by its encouragement to local governments to adopt nationally-applicable model building codes and standards, i.e., in this case researching what it would take for the Commonwealth centralize enforcement of the Kentucky Residential Code for local governments.

Finally, the Commonwealth of Kentucky evidences its commitment to a comprehensive mitigation program through the encouragement of local governments to adopt and implement nationally-applicable model building codes indirectly through Kentucky's encouragement and implementation of increasing participation in the Community Rating System (CRS) that is implemented by ISO/CRS (i.e., Verisk). It is uncontroversial that Kentucky has provided significant outreach and literal implementation of CRS to an increasing number of its communities. Though discussed elsewhere in this document, one method of promoting an increase in CRS participation has been to identify those requirements for entering and maintaining CRS status (i.e., gaining and continuing to keep CRS "points") that could be met through state activity. This statewide activity that can be shared downward to local governments has been instrumental in increasing participation in CRS. The Commonwealth will continue its push to increase CRS participation. This affects the vertical encouragement of adopting nationally-applicable model building codes through CRS requirements as local governments gain additional points to increase their CRS "class": To receive a Class 6 or higher (out of a 10 Class system), a local government must have implemented the Building Code Effectiveness Grading Schedule (BCEGS) (also an ISO/CRS program) and received a score. Though a bit dated, the most current list of CRS communities published by FEMA[10] (October 2016) shows Louisville/Jefferson County Metropolitan Government as having reached a rare Class 3 designation. More relevantly, Lexington-Fayette Urban County Government (LFUCG) and the City of Hopkinsville – two major population and economic centers in

[10] See FEMA. (October 2016). "Community Rating System (CRS) Communities and Their Classes." https://www.fema.gov/media-library/assets/documents/15846. [Last access 9/2/2018].

Kentucky – were designated as Class 7. Kentucky will be encouraging these local communities to implement BCEGS to continue their CRS Class gain. Further, Kentucky has twelve (12) communities listed as Class 8. Again, these will be communities to target for BCEGS implementation (i.e., encouragement of model building codes and standards) as Kentucky continues its overt drive to increase both the depth and breadth of CRS participation for its local governments.

E4.: Commonwealth Capability to Implement Mitigation Actions

Ranking Mitigation Measures and Prioritizing Between Funding Programs, Jurisdictions, and Proposals Addressing Different or Multiple Hazards

As addressed earlier the Standard Plan, mitigation actions and measures generally are ranked first by cost effectiveness, i.e., by being able to pass a Benefit-Cost Analysis (BCA) using FEMA methodology. That cost effectiveness is of primary concern derives from experience in implementing mitigation actions in the Commonwealth using FEMA's Hazard Mitigation Assistance (HMA) grant programs: The Commonwealth of Kentucky always has a demand for mitigation action that far exceeds the supply of FEMA grant assistance available in any given year. This is especially so given the recent decrease in monetary size of individual Hazard Mitigation Grant Program (HMGP) allocations following presidentially-declared disasters in Kentucky. For the past decade (from 2009), Kentucky has had on average one (1) to two (2) presidential disaster declarations per year[11]. However, in the past five (5) years (i.e., since 2013), individual presidential disaster declarations have resulted from multiple, "smaller"[12] hazard events meaning the Hazard Mitigation Grant Program (HMGP) allocation (that is determined as a function of Public Assistance and Individual Assistance expenditures) for each declaration has had less funding relative to other HMGP allocations in the past. The point is that with so much mitigation demand relative to funding supply, being able to show cost-effectiveness is a first concern.

After cost-effectiveness, mitigation actions and measures are ranked according to whether or not they protect critical facilities. An action or measure that protects critical facilities and populations as opposed to protecting only populations will rank higher.

Outside of the abovementioned general ranking, the Commonwealth does acknowledge project type as relevant to ranking. It does not, in other words, compare apples to oranges. So, acquisition/demolition projects are not ranked with all other mitigation action types. They are ranked separately from all other project types and are ranked primarily according to cost-effectiveness. The reasoning for this is twofold: One,

[11] The average is 1.6 presidential disaster declarations from 2009:

- 2009 = 3
- 2010 = 2
- 2011 = 2
- 2012 = 1
- 2013 = 0
- 2014 = 1
- 2015 = 4
- 2016 = 1
- 2017 = 0
- 2018 = 2 (as of September 2018)

[12] Arguably, not less damaging, however: "Smaller" events refers primarily to timeframes in how an "event" is defined. If federal regulation or policy determines that an "event" must be continuous, i.e., cannot stop and then start again, then "multiple" events will result in "smaller" disaster declarations but will do the same damage overall.

acquisition/demolition projects are the only project type that mitigates the effects from hazards completely (100%). Two and related, Kentucky's two (2) most deleterious hazard types are flooding and landslides. If pursued aggressively and ranked highly, then acquisition/demolition projects guarantee to alleviate the Commonwealth from the disproportionate dangers presented by these two (2) hazard types.

Similarly, what HMGP would refer to as "initiative" projects are ranked independently of what HMGP would refer to as "regular" projects. Again, this is apples to oranges. By definition, an "initiative" project cannot be ranked according to cost-effectiveness. Consequently, two (2) considerations govern the ranking of "initiative" mitigation actions: First, the monetary or scoping size of the project matters foremost: Of the FEMA Hazard Mitigation Assistance (HMA) grants, only the Hazard Mitigation Grant Program (HMGP) allows the application of "initiatives." However, "initiatives" are bound by a 5% to 10% limit: Only 5% of the HMGP allocation can be used for "initiative" projects, e.g., generators, sirens, early warning systems, and educational outreach programs. Ten percent (10%) is allowable if an additional 5% of the HMGP allocation is devoted to an initiative project related to building code enhancement. With such strict limits within generally smaller allocations, the monetary size and project scope of an initiative project will take precedence over other considerations. Otherwise (i.e., assuming similar scopes and cost estimates), a declaration of relative need for the project will help determine the ranking of "initiatives."

Prioritizing between funding programs has been addressed at various points throughout the Standard Plan. To summarize:

- Actions that address Repetitive-Loss (RL) or Severe Repetitive-Loss (SRL) properties will be targeted for FEMA Flood Mitigation Assistance (FMA) grants. RL and SRL properties are a reason for existence for FMA as evidenced in its willingness to finance 90% or all of a project addressing RL and SRL properties, respectively.
- For each release of FEMA's Pre-Disaster Mitigation (PDM) grant program, a list of priorities from FEMA is included. For any actions meeting those priorities, PDM will be targeted.
- PDM also has been and will continue to be frequently targeted for local and regional hazard mitigation plans. PDM grants offer continuity: Local hazard mitigation plans need to be funded and updated on a schedule exogenous to funding opportunities. The unpredictable funding from the Hazard Mitigation Grant Program (HMGP) cannot be relied upon for this need for continuity. Similarly, PDM is a frequent target for new hazard mitigation plans, especially hazard mitigation plans being developed or updated for Kentucky's universities and colleges.
- The Hazard Mitigation Grant Program (HMGP) is a general target for any of Kentucky's eligible mitigation actions: The Commonwealth of Kentucky finances 12% of the 25% local contribution required for an HMGP grant.
- Hazard Mitigation Grant Program (HMGP) is of particular importance for initiative projects (e.g., sirens, generators, early warning systems, and outreach). It is also important for Kentucky's multi-jurisdictional, multi-hazard mitigation plans when this funding source is available. Similarly, if available and not in competition with a multi-jurisdictional, multi-hazard mitigation plan HMGP is an obvious source for enhancements to existing mitigation plans, i.e., the "Risk Assessment Add-On."

Prioritizing jurisdictions applies to (sub-)applicants to FEMA's Hazard Mitigation Grants Program (HMGP). Prioritizing jurisdictions involves two (2) inputs: First, if a jurisdiction was directly affected by the presidentially-declared disaster event that prompted the HMGP, then that jurisdiction receives priority for HMGP funding. However, second, a jurisdiction must pass a commonwealth "risk assessment": Regularly, the Commonwealth submits "risk assessment" reports specific to cities, counties, and entities eligible for grant funding. These "risk assessments" focus on financing capabilities and practices. A jurisdiction with a low or negative financial "risk assessment" will be avoided in the distribution of FEMA's Hazard Mitigation Assistance and other federal grant programs.

Assessing the Effectiveness of Mitigation Actions

Kentucky Emergency Management (KYEM) employs what are termed Area Managers. Area Managers are assigned to regions of the Commonwealth. One of their primary tasks is to assess the effectiveness of mitigation projects that have been completed using FEMA funding. Assessment is done regularly; however, assessment primarily is concerned with compliance with FEMA grant rules.

As far as strategizing for a record of effectiveness (i.e., cost avoidance), the Commonwealth currently is involved with a cost avoidance being conducted by the United States Army Corps of Engineers (USACE) and will continue to pursue such effectiveness assessment as funding and capability becomes available.

The Commonwealth through Kentucky Emergency Management (KYEM), Kentucky Division of Water (KDOW), and the Area Development Districts (ADDs) will continue to message to recipients of FEMA grants to continue to record damages to FEMA-funded projects even after they are built.

E5.: Effectively Using Mitigation Programs to Achieve Mitigation Goals

The Commonwealth of Kentucky concludes that it has, indeed, made full use of funding available from FEMA mitigation grant programs. It supports this conclusion primarily using two (2) reasons: 1) that the Commonwealth of Kentucky habitually "over-submits" applications for available funding under FEMA mitigation grant programs, and 2) that the exception proves the rule.

"Over-Submission"

One way to argue that the Commonwealth of Kentucky has fully made use of available mitigation funding through the FEMA assistance programs is to argue that the Commonwealth of Kentucky generally "does not leave money on the table." Granted, the term "leaving money on the table" applies to negotiation: If one purchases for $100 what he or she could have purchased for $80, then $20 is "left on the table." But a looser interpretation of the idiom applies here: The Commonwealth of the Kentucky not only applies for the funding *available* from FEMA hazard mitigation programs. This would be analogous to accepting the "price" FEMA (in this case) stipulated without negotiation, thus potentially "leaving money on the table." However, the Commonwealth of Kentucky "negotiates." "Negotiation" simply is a means by which one ensures that he or she is receiving the minimum price (and, conversely, the maximum value) for a product in a given situation. The "product" here is FEMA grant funding to be targeted toward mitigation. And the Commonwealth of Kentucky attempts to ensure that it receives the "maximum value" in FEMA grant funding to be targeted toward mitigation by having available for application eligible projects whose value combined is in excess the funding available from FEMA. This the Commonwealth terms "over-submission." And, very loosely, it is a form of "negotiation": Allowing FEMA to take away funding because applications were limited to the amount that FEMA was offering to finance mitigation activity throughout the Commonwealth is akin to paying more, or paying a higher price for, the mitigation activity toward which FEMA is offering funding. It is "leaving money on the table." So, generally, the Commonwealth of Kentucky "over-submits" mitigation projects (or, essentially, is able to ask for more than what is being offered) with the intention that should a mitigation project intended to be funded through FEMA grant programs is denied or must be withdrawn, Kentucky still is attempting to ensure that it maximizes the amount of funding being offered with a waiting list of projects available for application.

Throughout this 2013-2018 planning cycle, the Commonwealth of Kentucky consistently has "over-submitted" eligible mitigation projects for funding from FEMA's Hazard Mitigation Grant Program in order to ensure ("negotiate") the maximum value of project funding being offered by FEMA.

FEMA's Hazard Mitigation Grant Program (HMGP) is available to local jurisdictions after a disaster that has befallen a state is deemed severe enough to warrant a "presidential declaration." The now "presidentially-declared disaster" is assigned a four-digit number.

Once the Individual Assistance (IA) and Public Assistance (PA) for the jurisdictions directly affected by the presidentially-declared disaster has been addressed, FEMA's HMGP goes into effect: FEMA offers an amount of funding that is a function of IA and PA expenditures by FEMA toward which *all* local jurisdictions – regardless of whether they were directly affected by the presidentially-declared disaster under which the HMGP is offered – can apply to be used toward hazard mitigation activity that is intended to protect against the ruinous effects of *future* disasters, wherever they may occur throughout the Commonwealth of Kentucky.

The amount offered by FEMA for each HMGP that coincides with a presidentially-declared disaster is termed the "lock-in amount."

During Kentucky's 2013-2018 planning cycle, Kentucky suffered from eight (8) presidentially-declared disasters. They were numbered by FEMA, in chronological order by date of declaration, as DR-4196, DR-4216, DR-4217, DR-4218, DR-4239, DR-4278, DR-4358, and DR-4361. Tabulated below is a list of Kentucky's 2013 – 2018 disaster declarations, followed by the date each was "declared," the number of counties affected (includes any county eligible for either or both Public and/or Individual Assistance), and the "lock-in amounts" offered by FEMA that represent the maximum amount of funding for which all local jurisdictions within the Commonwealth of Kentucky could apply under FEMA's Hazard Mitigation Grant Program:

Table E8. Disaster "Declarations" and "Lock-In Amounts" for 2013-2018 Hazard Events

Declared Disaster (DR)	Date "Declared"	Number of Kentucky Counties Affected[13]	"Lock-In Amount"[14]
4196	September 30, 2014	4	$1,171,965
4216	April 30, 2015	64	$ 973,182
4217	May 1, 2015	19	$3,605,584
4218	May 12, 2015	68	$4,326,215
4239	August 12, 2015	34	$3,352,221
4278	August 26, 2015	22	$ 942,171
4358	April 12, 2018	22	$2,919,302
4361	April 26, 2018	35	$3,890,330

[13] The number of counties affected for DR-4196 through DR-4278 is derived from the Preliminary Damage Assessment Report that has the Governor requesting Public Assistance and Individual Assistance for x counties. The number of counties affected derives from the declaration map for DR-4358 and DR-4361.

[14] The "lock-in" amounts for DR-4196 through DR-4278 represent final amounts recorded in FEMA's NEMIS system. DR-4358 and DR-4361 still are relatively new disaster declarations at the time of this writing. The "lock-in amounts" recorded here, again, derive from FEMA's NEMIS system, but are subject to change.

Having seen what was the maximum amount that FEMA could offer through its HMGP program, following is tabulated the 2013 – 2018 disaster declaration accompanied by FEMA's HMGP "Lock-In Amount" and the total amount of funding available for request by the Commonwealth of Kentucky by "over-submitting" project applications. The total number presented represents *all* projects available for submission at the time of each release of each HMGP allocation:

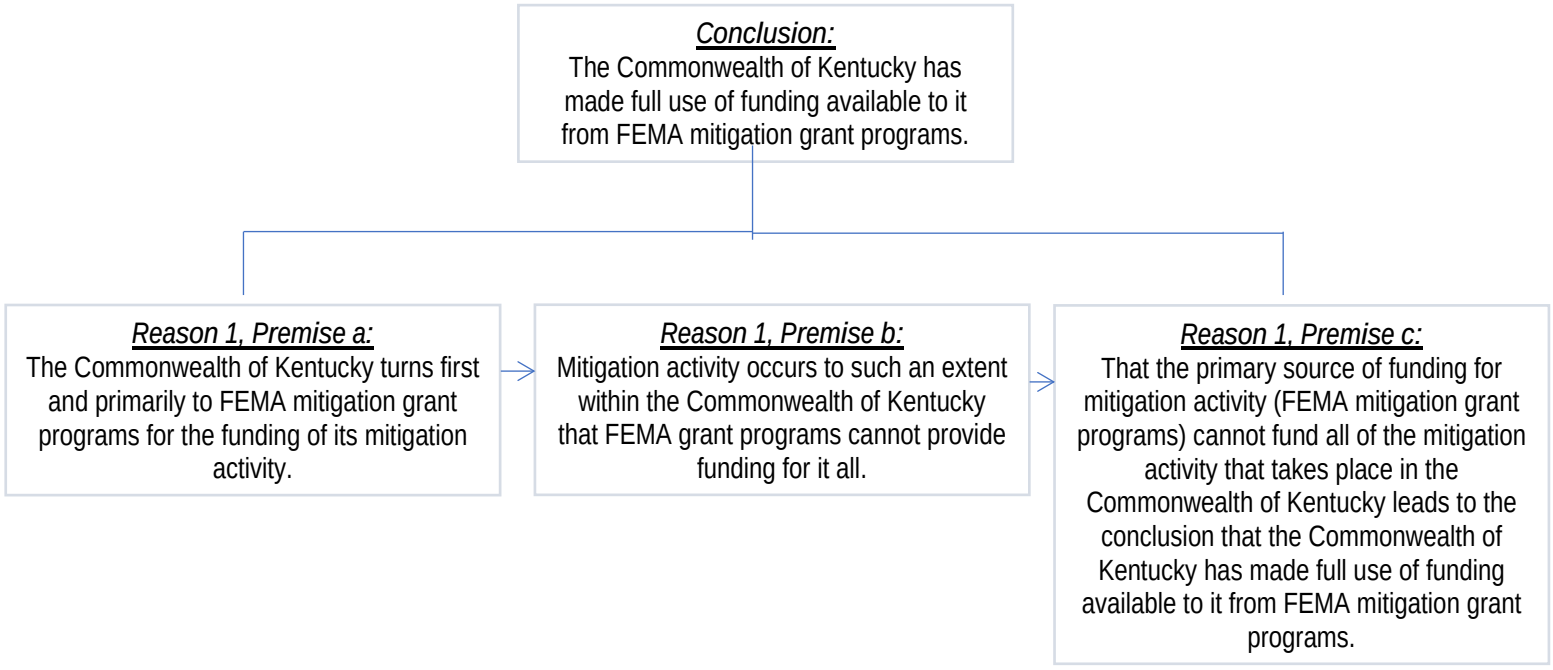
Table E9. Amounts and Percentages of "Over-Submission"

Declared Disaster (DR)	"Lock-In Amount" (I)	Amount Available by Kentucky Via "Over-Submission" (II)	"Over-Submission" Amount (II – I)	Percentage (%) "Over-Submitted" [((II/I) – 1) x 100]
4196	$1,171,965	$ 4,938,373	$ 3,766,408	321.4%
4216	$ 973,182	$11,755,043	$10,781,861	1,107.9%
4217	$3,605,584	$32,804,526	$29,198,942	809.8%
4218	$4,326,215	$12,870,368	$ 8,544,153	197.5%
4239	$3,352,221	$19,266,397	$15,914,176	474.7%
4278	$ 942,171	$11,500,152	$10,557,981	1,120.6%
4358	$2,919,302	$ 4,509,262	$ 1,589,960	54.5%
4361	$3,890,330	$ 7,129,284	$ 3,238,954	83.3%
Totals	$21,180,970	$104,773,405	$83,592,435	394.7%

Thus, from 2013 to 2018, FEMA offered the Commonwealth of Kentucky over $21 million dollars toward which its local jurisdictions could apply to fund eligible mitigation activity. And from 2013 to 2018, the Commonwealth of Kentucky had available applications for FEMA Hazard Mitigation Grant Program funding totaling nearly $105 million. This represented close to an average and overall 395% "over-submission" rate for Kentucky's entire 2013 – 2018 planning cycle.

The Exception Proves the Rule

The "rule" is that the Commonwealth of Kentucky has made full use of funding available to it from FEMA mitigation grant programs. One way to support this claim is to show the "rule's" negative: That the Commonwealth of Kentucky has used significant levels of funding for mitigation projects that *do not* derive from FEMA mitigation grant programs. The premises are: a) FEMA grant programs are the primary source of mitigation activity funding in the Commonwealth of Kentucky, and b) that there is *so much* mitigation activity throughout the Commonwealth of Kentucky that FEMA mitigation grant programs *are not able* to address it all. Thus, the exceptions (those projects *not funded* by FEMA mitigation grant programs) prove the "rule" that the Commonwealth of Kentucky has to have made full use of funding available from FEMA mitigation grant programs: FEMA could not provide Kentucky with enough funds! Below is the argument visually:



The Commonwealth of Kentucky, then, provides the following “exceptions”:

1) The Louisville Metropolitan Sewer District (Louisville MSD) in Jefferson County, from 2013 to 2018, had locally financed approximately $14,145,470 in mitigation activity beyond the nearly $26 million in funding that it received from FEMA mitigation grant programs between 2015 and 2018. Of the approximate $14 million of mitigation financed by Louisville MSD, about $1.5 million was spent on an initiative created by Louisville MSD called the “Quick Buy Program.” The Quick Buy Program began in 2015 to purchase homes in Louisville that had been “substantially damaged” and needed more timely mitigation than FEMA’s Hazard Mitigation Assistance (HMA) grant programs would allow. Eligible homeowners are offered the damaged value of their homes. Flood insurance closes the gap between the damaged value and the full value of the home. Twenty-four (24) homes were purchased under the Quick Buy Program in 2015 and 2016. One (1) additional home was purchased in 2018.

Table E10. Mitigation Actions Funded by Louisville MSD, 2013-2018

Project Name	Description	Cost
Quick Buy Program	The Quick Buy Program began after the 2015 flooding to purchase homes that had been substantially damaged in a quicker time frame than HMGP funding. Eligible homeowners were offered the damaged value of the homes, with flood insurance making up the remaining amount to reach that full value of the home. Twenty-four homes were purchased under this program in 2015 and 2016. One additional home was purchased in 2018.	$1,500,000
Greasy Ditch/Northern Ditch Flood Study	An H&H study was performed for Greasy Ditch, which is a tributary to Northern Ditch, and a hydrology study was performed for Northern Ditch to improve the existing flood models and mapping. These models were completed in FY17 and FY18.	$169,989
Buechel Branch Flood Study	The existing H&H study for Buechel Branch is currently being updated to reflect current conditions and to provide better information and potential mitigation options for the Buechel Branch watershed.	$80,844
Countywide Flooding Mitigation Prioritization Plan	In 2015, a prioritiziation report was developed to identify and evaluate various mitigation alternatives to redude flood damage in Jefferson County. The project focused on the top 50 project areas in the riparian flooding areas and the top 18 project areas in the combined sewer service area.	$374,637
Plumbing Modification Program	To date, backflow prevention devices have helped more than 17,000 customers protect their basements from sewer backups. If eligible, MSD will pay a licensed plumbing contractor to install overflow prevention devices to the plumbing layout to prevent basement flooding caused by overflows in the sanitary sewer system.	Since FY13, MSD has spent approximately $12,000,000 on the Plumbing Modification Program
Annual Outreach to Floodprone Properties	Annual letter and newsletter sent to properties located in floodprone areas in Jefferson County. Newsletter includes information about flood insurance, MSD's Plumbing Modification Program, flood safety, floodplain regulations, elevation certificates, etc.	Approximately $4,000 annually

2) Louisville Metropolitan Sewer District (Louisville MSD) is an entity separate from Louisville/Jefferson County Metropolitan Government (Louisville Metro). From 2013 to 2018, Louisville Metro spent close to $9 million on mitigation measures not funded by FEMA's Hazard Mitigation Assistance (HMA) grant programs.

Table E11. Mitigation Actions Funded by Louisville Metro, 2013-2018

Mitigation Action	Year	Cost
Mobile Emergency Operations Center	2013	$ 350,000
New Outdoor Warning Siren x 2	2013	$ 40,000
New Outdoor Warning Siren x 2	2014	$ 40,000
Outdoor Warning Siren Upgrade x 3	2015	$ 75,000
New Outdoor Warning Siren x 1	2016	$ 20,000
Outdoor Warning Siren Upgrade x 1	2016	$ 25,000
Outdoor Warning Partial Upgrade x 3	2016	$ 30,000
Computer-Aided Design (CAD) 9.1 Upgrade to 9.3	2016	$ 150,000
Tower Lighting	2017	$ 80,000
Outdoor Warning Siren Upgrade x 3	2017	$ 75,000
New Outdoor Warning Siren x 3	2018	$ 60,000
Outdoor Warning Siren: 2-Way Communications Conversations (Thunderbolt/TRIAD) x 49	2016-2017	$ 58,500
Radio System Upgrade	2016-2018	$7,800,000
	TOTAL	$8,803,500

3) The Lexington-Fayette Urban County Government (LFUCG) has locally financed over $74 million in storm-water improvement projects between 2013 and 2018. LFUCG's local commitment to stormwater- and sanitary sewer-related mitigation projects reflects a demand for mitigation activity that exceeds the supply of funding that could derive from federal (i.e. FEMA) mitigation grant programs. This pronounced demand for mitigation activity must derive funding *beyond* the maximum that FEMA mitigation grant programs could provide is further evidenced with the success that LFUCG consistently has had in applying for and being awarded FEMA mitigation grant program funds. The following table lists the storm-water- and sanitary sewer-related mitigation projects locally financed by LFUCG.

Table E12. Mitigation Actions Funded by LFUCG, 2013-2018

Project Name	Project Type	Year	Total Funded	Funding Source[15]
Brighton East Rail Trail	Bikeway/Pedway	2015	$ 84,363.50	TE/SLX/MAP
Brighton Rail Trail Phase 4	Bikeway/Pedway	2017	$ 4,300.00	RTP/MAP
Clays Mill Road Section 2B	Roadway	2013	$ 212,017.00	SLX/TC
Clays Mill Road Section 2C	Roadway	2016	$ 794,830.93	SLX/TC
Coolavin Rail Trail	Bikeway/Pedway	2016	$ 111,995.00	GF/Bond
Cooper-Waller-Harrodsburg Road	Roadway, Pedestrian Crossings	2016	$ 16,670.00	MAP
Gainesway Trail Project	Bikeway/Pedway	2017	$ 14,620.00	CMAQ/MAP
Isaac Murphy Memorial Art Garden	Bikeway/Pedway	2015	$ 29,248.50	FD39/TCSP/TE/Private
Liberty at Winchester Road	Roadway, Pedestrian Crossings	2016	$ 13,296.20	MAP
Meadow Lane at New Circle Road	Roadway, Pedestrian Crossings	2016	$ 14,406.00	MAP
Meadows-Northland-Arlington-Phase 5A	Roadway	2015	$ 1,639,377.11	CDBG/HUD/WQMF
Meadows-Northland-Arlington-Phase 5B	Roadway	2014	$ 795,561.56	CDBG/HUD
Meadows-Northland-Arlington-Phase 5C	Roadway	2015	$ 822,479.48	CDBG/HUD
Meadows-Northland-Arlington-Phase 5D	Roadway	2016	$ 867,514.01	CDBG/HUD
Rose Street Bike Lane	Roadway/Bikeway	2017	$ 7,825.51	SLX/MAP
Southland Drive Bike Lane Project	Bikeway	2015	$ 47,886.23	CMAQ/MAP/Private
Tates Creek Sidewalk Project	Sidewalk	2013	$ 88,807.74	CMAQ/MAP
Anniston/Wickland	Stormwater Improvement/Mitigation	2015	$ 1,012,758.00	KIA Grant
Derby Drive	Stormwater Improvement/Mitigation	2014	$ 46,154.00	WQMF
Elam Park	Stormwater Improvement/Mitigation	2017	$ 395,635.00	WQMF
Elmwood Drive	Stormwater Improvement/Mitigation	2016	$ 35,998.00	WQMF
Idle Hour North	Stormwater Improvement/Mitigation	2014	$ 536,559.00	KIA; LFUCG via WQMF
Rogers Road	Stormwater Improvement/Mitigation	2013	$ 2,869,342.00	KIA; LFUCG via WQMF

[15] Acronyms for Funding Sources:

- CDBG: Community Development Block Grant
- CMAQ: Congestion Mitigation and Air Quality
- FD39: Kentucky Transportation Cabinet Secretary's Emergency/Discretionary Fund
- GF: LFUCG General Fund
- HUD: U.S. Department of Housing and Urban Development
- KIA: Kentucky Infrastructure Authority Loan through Sanitary Sewer Fee
- MAP: Municipal Aid Program
- RTP: Recreational Trails Program
- SLX: Surface Transportation Program
- TC: Toll Credits
- TCSP: Transportation and Community System Preservation Funds
- TE: Transportation Enhancement Projects
- WQMF: LFUCG Water Quality Management Fee

Project Name	Project Type	Year	Total Funded	Funding Source[15]
Walhampton	Stormwater Improvement/Mitigation	2015	$ 973,654.00	KIA; LFUCG via WQMF
Wilson Downing Tributary Study, Improvements	Stormwater Improvement/Mitigation	2015	$ 999,624.00	WQMF
Town Branch Hydrologic/Hydraulic Study	Stormwater Improvement/Mitigation	2015	$ 109,770.00	Bond
Southland/Wolf Run Investigation, Analysis	Stormwater Improvement/Mitigation	2017	$ 305,000.00	WQMF
Phase 1 Analysis/Evaluation: Woodhill-Peachtree	Stormwater Improvement/Mitigation	2017	$ 42,879.00	WQMF
Stormwater Infrastructure Management Program	Stormwater Improvement/Mitigation	2018	$ 200,000	WQMF
Century Hills Upsize	Sanitary Sewer Remedial Measures Program	2014	$ 1,622,187.39	KIA
East Lake Trunk Upsize	Sanitary Sewer Remedial Measures Program	2014	$ 751,073.99	KIA
Idle Hour Trunk	Sanitary Sewer Remedial Measures Program	2014	$ 1,241,217.18	Sanitary Sewer
Bob O'Link Trunk	Sanitary Sewer Remedial Measures Program	2014	$ 2,935,691.26	KIA
West Hickman Main Trunk A	Sanitary Sewer Remedial Measures Program	2015	$ 4,508,348.33	KIA
Woodhill Trunk	Sanitary Sewer Remedial Measures Program	2015	$ 3,602,657.28	KIA
Wolf Run Main Trunk A	Sanitary Sewer Remedial Measures Program	2015	$ 459,510.05	KIA
Wolf Run WWS Tank	Sanitary Sewer Remedial Measures Program	2015	$ 5,825,481.45	KIA
Lower Cane Run WWS Tank	Sanitary Sewer Remedial Measures Program	2016	$12,155,683.60	KIA
Town Branch WWS Tank	Sanitary Sewer Remedial Measures Program	2016	$20,320,272.66	KIA
UK Trunk A	Sanitary Sewer Remedial Measures Program	2016	$ 3,061,315.16	KIA
LCR FM Tie-In and LGG	Sanitary Sewer Remedial Measures Program	2016	$ 57,663.23	KIA
South Elkhorn PS Upsize	Sanitary Sewer Remedial Measures Program	2017	$ 632,259.87	Sanitary Sewer
Lower Griffin Gate Trunk	Sanitary Sewer Remedial Measures Program	2018	$ 1,348,582.99	KIA
		TOTAL	$74,107,732.21	

4) The City of London also represents an "exception to the rule" that Kentucky's full use of FEMA assistance can be proved counterintuitively through the mitigation activity funded outside of FEMA assistance. As context, the City of London has received FEMA Hazard Mitigation Assistance (HMA): It was awarded $760,000 federal share from FEMA to address drainage along its Whitley Branch. FEMA's assistance to London represents a significant, but not whole picture of the mitigation activity that has progressed in this city since 2004. It is relevant to cite activity to 2004 because FEMA's assistance to Whitley Branch has been part of an overall initiative of the City of London to address a number of fundamental, interconnected drainage issues. In other words and related to the subject of this section, there is not enough FEMA assistance to meet the demand for mitigation in the City of London. The following table displays the holistic, interconnected mitigation financed by the City of London toward which FEMA's HMA contribution to Whitley Branch was indeed an important part.

Table E13. Mitigation Actions Funded by the City of London, Kentucky

Project	Year Funded	Cost
Creek Restoration along South Mill Street to South Dixie Street	2004	$ 50,000
Creek Restoration along South Main Street from Armory Street to Commercial Drive	2004	$ 20,000
Creek Restoration from Commercial Drive to City Limits (at CSX Railroad Trestle)	2005	$ 20,000
Upsizing Pipe to 40" between CCC and Culvert Under Road on South Dixie Street at Southeastern Tractor Sales	2006	$ 25,000
Acquired and Demolished 2 Houses in the Flood Zone and Converted to Retention Pond	2009	$120,000
Replaced Culvert with New Bridge on Nevada Street	2010	$220,000
Replaced 24" Pipe in Mill Street Park with 60" Pipe	2010	$ 30,000
Removed V-Shaped Ditch from Sycamore Street to West 11th Street; Replaced with 42" Pipe Underground	2015	$ 24,000
Replaced Culvert Under West 11th Street with 2 Headwalls	2015	$ 10,000
Whitley Branch Wetlands Restoration Project[16]	-	$232,000
	TOTAL	$751,000

[16] This project was the result of an Environmental Protection Agency (EPA) 319 grant.

To address how the Commonwealth effectively uses existing commonwealth programs to achieve its mitigation goals, it is relevant to illustrate the following examples. The following examples also relate to the above discussion of documenting that Kentucky has fully used FEMA assistance by being able to show that there is so much mitigation activity that FEMA assistance cannot possibly address all of it.

1) Between Federal Fiscal Years (FFY) 2012 and 2017, Kentucky's Office of Homeland Security (KOHS) funded $21,095,512.81 worth of mitigation activity. Mitigation actions funded by KOHS included warning sirens, generators, and first responder equipment. KOHS (as existing commonwealth program) contribution to mitigation activity as broken down by year is listed in the below table. Note that in FFY 2016-2017, KOHS was able to fund mitigation activity to every county in Kentucky.

Table E14. KOHS Funding for Mitigation Activity, FFY 2012-2017

Federal Fiscal Year(s)	Value of Mitigation Activity
2012	$ 2,437,389.60
2013	$ 2,802,714.00
2014	$ 2,742,500.00
2015	$ 2,699,400.00
2016-2017	$10,413,509.21
TOTAL	$21,095,512.81

2) Between 2013 and 2017, Kentucky's Department for Local Government (DLG) funded nearly $5.8 million toward local communities' contributions (i.e., local share) to major flood control projects funded by FEMA, by the United States Army Corps of Engineers (USACE) (through its 202 projects), and by other federal agencies. DLG's contribution to FEMA and USACE mitigation projects shows how the Commonwealth effectively uses existing commonwealth programs to achieve its mitigation goals. Below lists the FEMA and USACE projects for which DLG provided the local contribution in the specified amounts.

Table E15. DLG Funding of Local Share for Mitigation Activity, 2013-2017

Flood Control Project	Federal Agency Providing Funds	Amount of DLG Contribution to Local Share
Taylorsville/Spencer County Levee Project	FEMA	$187,500
Webster County Storm Event Project	NRCS[17]	$ 11,998
Martin County Blacklog Fork Project	FEMA	$ 61,680
Water Street Storm Sewer System Project	FEMA	$600,000
Lebanon Junction Floodwall Repair Project	USACE	$113,000
Carroll County May Storm Event	NRCS	$104,124
Mason County Emergency Watershed Project	NRCS	$115,710
Hinkston Creek USACE Study Project	USACE	$ 25,000
Webster County Sugar Camp Creek Project	NRCS	$ 3,274
Old Sardis Pike Project	NRCS	$ 8,987
Martin Redevelopment Fire Station Project	USACE	$ 47,844
Frankfort/Franklin County Flood Inundation Mapping Project	USGS[18]	$ 27,500
Webster County April Storm Event	NRCS	$115,711
Banklick Creek Mitigation Project	FEMA	$214,412
Banklick Oliver Independence Road Project	FEMA	$ 19,025
Banklick Madison Pike Project	FEMA	$ 30,174
Smithland Flood Control Project	FEMA	$ 21,678
Elk Creek Debris Removal Project	USDA-RD[19]	$ 19,500
Little Kentucky River Watershed Project	NRCS	$ 39,975
Powell County Stream Middle Fork Project	NRCS	$ 2,812
Yellow Mountain Road Sanitary Sewer Extension Project	USACE	$ 62,500
River Gage and Inundation Map Project	USACE	$ 32,000
Fleming County Acquisition Project	FEMA	$ 81,981
Carroll County EWP Project	NRCS	$ 20,167
(City of) Hazard Flood Inundation Mapping Project	USACE; USGS	$ 55,000
Williamsburg Levee Certification Project	USDA-RD	$117,900
Barbourville Levee Certification Project	USDA-RD	$120,600
Harlan County Levee Certification Project	USDA-RD	$175,050
Irvine Riverbank Stabilization Project	NRCS	$179,927
Pineville Levee Certification Project	USDA-RD	$143,100
Four Mile Creek Monitoring and Alert Project	USGS	$111,430
KYAPED LiDAR Acquisition Project	FEMA	$419,000
Triplett Creek PAS Technical Assistance Project	USACE	$ 37,500
Trimble Branch Road Drainage Project	FEMA	$ 84,556

[17] NRCS = Natural Resource Conservation Service (of United States Department of Agriculture)

[18] USGS = United State Geological Survey

[19] USDA-RD = United States Department of Agriculture – Rural Development

Flood Control Project	Federal Agency Providing Funds	Amount of DLG Contribution to Local Share
Cowpen Creek Drainage Project	FEMA	$ 57,925
Maysville Watershed Debris Removal Project	NRCS	$ 38,906
Wayland HMGP Drainage Project	FEMA	$ 48,946
Johnson County Flat Gap Acquisition Project	FEMA	$ 18,989
Town of Martin (2015)	USACE 202	$745,000
Town of Martin (2017)	USACE 202	$131,895
Town of Martin (2017)	USACE 202	$645,000
City of Cumberland Flood Control (2015)	USACE 202	$118,750
City of Cumberland Flood Control (2016)	USACE 202	$285,000
Martin County Flood Control (2017)	USACE 202	$ 63,610
Pike County Flood Control (2017)	USACE 202	$138,035
Harlan County Non-Structural (2017)	USACE 202	$ 95,000
	TOTAL	$5,812,846