

## S8.: Mitigation Goals

For reference, the mitigation goals from the Commonwealth of Kentucky's 2013 Enhanced Hazard Mitigation Plan are listed below:

- *GOAL I:* Increase awareness and support of, training toward and about, and education and proficiency in hazard mitigation (guided by the results of the Commonwealth's *Risk Assessment*).
- *GOAL II:* Maximize hazard mitigation activity throughout the Commonwealth of Kentucky (guided by the results of the Commonwealth's *Risk Assessment*).
- *GOAL III:* Provide to/develop for its local jurisdictions the tools and data-based research that will aid in facilitating, maximizing, and promoting hazard mitigation activity throughout the Commonwealth of Kentucky (guided by the results of the *Risk Assessment*).
- *GOAL IV:* Improve direction and coordination/prioritization of the mitigation activity undertaken by the Commonwealth of Kentucky's local jurisdictions.

It was decided through the planning process that 2013 Goals II and IV would be combined. New wording would be added that emphasizes that this new Goal II exists to reduce the vulnerability of jurisdictions within the commonwealth and the vulnerability of commonwealth-owned and commonwealth-operated buildings, infrastructure, and critical facilities. Goals II and IV in 2013 both concerned linking Kentucky's hazard mitigation plan to local hazard mitigation plans.

A new Goal IV will be included that articulates a long-term vision of the Commonwealth to further integrate mitigation with its relevant stakeholders, its agencies, its federal partners, and its planning and policies.

A new Goal V will be included that clarifies the Commonwealth of Kentucky's commitment to providing populations incentives to and means by which to leave areas prone to frequent flooding and to relieving strain on FEMA's National Flood Insurance Fund (NFIF). This goal also satisfies the 2016 requirements for FEMA's Repetitive-Loss Strategy

Below, then, are the new Goals for the Commonwealth of Kentucky Enhanced Hazard Mitigation Plan 2018 (CK-EHMP 2018):

- *GOAL I:* Increase awareness and support of, training toward and about, and education and proficiency in hazard mitigation (guided by the results of the Commonwealth's *Risk Assessment*).
- *GOAL II:* Maximize hazard mitigation activity throughout the Commonwealth of Kentucky to reduce vulnerabilities to jurisdictions and to commonwealth-owned and commonwealth-operated buildings, infrastructure, and critical facilities and improve the direction and coordination and prioritization of the mitigation activity undertaken by the Commonwealth of Kentucky's local jurisdictions.
- *GOAL III:* Provide to/develop for its local jurisdictions the tools and data-based research that will aid in facilitating, maximizing, and promoting hazard mitigation activity throughout the Commonwealth of Kentucky (guided by the results of the *Risk Assessment*).
- *GOAL IV:* Increase integration of commonwealth and federal agencies' policies, programs, funding sources, projects, and planning (to reduce vulnerabilities to jurisdictions and to commonwealth-owned and commonwealth-operated buildings, infrastructure, and critical facilities).
- *GOAL V:* Decrease the number of properties commonwealth-wide designated as Repetitive-Loss (RL) or Severe Repetitive-Loss (SRL).

## S9.; S11., I.: Mitigation Actions; Evaluation of, Changes to

### **How Mitigation Actions Relate to Mitigation Goals**

Before presenting the Commonwealth of Kentucky's mitigation actions for 2018, it is relevant to address both how the mitigation actions were linked to the Commonwealth's goals and how they were linked to local mitigation plans in 2013. This explanation of 2013's linkage applies to 2018's linkages, as well.

The Commonwealth of Kentucky Enhanced Hazard Mitigation Plan for 2013 (CK-EHMP 2013) listed four (4) goals in its mitigation strategy. These four (4) goals were directly linked to four (4) sets of mitigation actions. These four (4) sets of mitigation actions were divided into two (2) categories: One set of actions was labeled *Inductive* actions and the other three (3) sets were categorized as *Deductive* actions. *Inductive* and *Deductive* actions were distinguished by their origin. *Inductive* actions were actions resulting from the bottom up, i.e., from the local hazard mitigation plans. *Deductive* actions resulted from the top down, i.e., actions that the Commonwealth of Kentucky would pursue.

Within the *Deductive* action category, three (3) sets of actions were articulated under the following headings or sub-categories: "Outreach," "Option Diversification," and "Public Goods-Type."

"Outreach" referred to those mitigation actions directed toward training and public relations/education. "Option Diversification" referred to mitigation actions whose purpose is to provide local jurisdictions with an increased array of mitigation actions: The Commonwealth can influence local jurisdictions' demand for mitigation projects by offering/educating/informing/supplying mitigation activity/project options that may not otherwise have been considered in a local jurisdiction's demand calculus. "Public Goods-Type" referred to mitigation actions undertaken by the Commonwealth whose purpose is to develop or supply a mitigation-oriented product from which all local jurisdictions would benefit.

The four (4) sets of mitigation actions – "Outreach" actions, "Option Diversification" actions, "Public Goods-Type" actions, and *Inductive* actions – were linked in CK-EHMP 2013 to its four (4) Goals: "Outreach" actions to Goal I; "Option Diversification" actions to Goal II, "Public Goods-Type" actions to Goal III; *Inductive* actions to Goal IV.

This Commonwealth of Kentucky Enhanced Hazard Mitigation for 2018 (CK-EHMP 2018) will continue this direct linkage: That there are five (5) goals articulated in CK-EHMP 2018 means that there will be five (5) sets of mitigation actions.

In the above discussion of the Commonwealth's mitigation goals and changes to them, this document noted that Goals II and IV from the 2013 Commonwealth of Kentucky Enhanced Hazard Mitigation Plan (CK-EHMP 2013) would be combined into this 2018 Commonwealth of Kentucky Enhanced Hazard Mitigation Plan's (CK-EHMP 2018) Goal

II. This was a logical combination in that Goals II and IV from CK-EHMP 2013 directly linked Kentucky's hazard mitigation plan to local hazard mitigation plans. Further, the Commonwealth's role in informing and advertising to local jurisdictions and other stakeholders expanded options available for mitigation reduces vulnerability to commonwealth-owned and commonwealth-operated buildings, infrastructure, and critical facilities. Vulnerabilities to commonwealth-owned and commonwealth-operated buildings, infrastructure, and critical facilities similarly are reduced by the same actions articulated in local hazard mitigation plans. This connection between the CK-EHMP 2018 and local hazard mitigation plans is described in further detail below. Relevant here is that the four (4) sets or lists of mitigation actions articulated in CK-EHMP 2013 (that were thusly linked to four mitigation goals) will be collapsed into three (3) lists of actions. So, for CK-EHMP 2018, there will be a list of actions toward "Outreach," a list of "Public Goods-Type" actions, and a list comprised of a combination of what were termed in CK-EHMP 2013 as "Option Diversification" and *Inductive* mitigation actions.

Two (2) new lists of mitigation actions will be articulated that will link to Kentucky's new Goal IV and Goal V for CK-EHMP 2018. However, it should be noted that the mitigation action list linked to Goal V (i.e., the goal toward reduction of Repetitive-Loss and Severe Repetitive-Loss properties) will be comprised of actions formerly listed within the four (4) mitigation action sets from CK-EHMP 2013. After all, the Commonwealth always has targeted Repetitive-Loss and Severe Repetitive-Loss properties for mitigation.

### **How the Commonwealth Mitigation Strategy Relates to Local Mitigation Strategies**

In 2013 and for Kentucky's hazard mitigation plan, the University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP) conducted an analysis of mitigation strategies from then-current multi-jurisdictional, multi-hazard mitigation plans. UK-HMGP recorded verbatim the mitigation actions articulated in each of Kentucky's local (primarily multi-jurisdictional) hazard mitigation plans. It analyzed similarities in actions despite wording, specificity, and formatting differences and developed categories within which local plans' mitigation actions could reside. The categories into which local hazard mitigation plans' individual actions fit further were linked with a then nascent<sup>1</sup> *Mitigation Ideas* document by FEMA that was still technically in development and nearing its finalization phase at the time. The idea behind conducting this analysis was to link formally and directly the Commonwealth's hazard mitigation plan with its local hazard mitigation plans: When it came to capital projects toward mitigation and when it came to planning and initiative projects toward mitigation, the Commonwealth's direction would not deviate significantly from the mitigation needs expressed in local hazard mitigation plans. So, Kentucky developed a list of mitigation actions comprised of the categorization of local plans' mitigation actions. This list was labeled Kentucky's *Inductive* mitigation action list.

One particular efficiency realized from the 2013 analysis of local plan mitigation actions and their resulting categorization into a list preserved within Kentucky's mitigation plan involved informal changes to review policy of local hazard mitigation plans that occurred

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<sup>1</sup> *Mitigation Ideas* in 2013 was a Microsoft Word document credited to FEMA Region VIII.

during the 2013-2018 planning cycle: As Kentucky was updating its (generally) multi-jurisdictional hazard mitigation plans between 2013 and 2018, FEMA increasingly insisted and messaged informally through its plan review results that multi-jurisdictional mitigation plans must reflect a compilation of individual local mitigation plans rather than act as a regional summary of generally like jurisdictions. Specifically toward mitigation strategies, multi-jurisdictional plans were to articulate separate lists of mitigation actions exclusive to every incorporated city and unincorporated county within Kentucky. This represented a relatively dramatic policy shift from the assumption that multi-jurisdictional plans were akin to regional plans and that Kentucky's generally small, rural, sparsely-populated cities would share mitigation strategies and actions with their counties and, sometimes, their region.

However, the 2013-2018 policy change reinterpreting multi-jurisdictional mitigation plans to aggregations of individual local plans from its original interpretation as regional summaries partially was facilitated by the Commonwealth through UK-HMGP's abovementioned work in categorizing past local plans' mitigation actions and tying them to FEMA's attempts to direct mitigation project demand through its *Mitigation Ideas*<sup>2</sup> outreach tool: Elsewhere in this plan document, it is elaborated that UK-HMGP conducts extensive, typically one-on-one and informal local hazard mitigation plan development outreach targeted to individual hazard mitigation plan update projects as they are being developed. Implementing this outreach meant utilizing the categorization of mitigation actions that comprised Kentucky's *Inductive* mitigation actions articulated in its 2013 Commonwealth of Kentucky Enhanced Hazard Mitigation Plan (CK-EHMP 2013).

Consequently, the *Inductive* mitigation action list from CK-EHMP 2013 remains in Kentucky's hazard mitigation plan update, CK-EHMP 2018 relatively untouched. (Where changes have been made will specified in the mitigation action tables to follow.) For CK-EHMP 2018, the admittedly awkward *Inductive* label for the list has been omitted and this list is combined with what the CK-EHMP 2013 termed "Option Diversification" mitigation actions.

The former *Inductive* mitigation action list serves as the CK-EHMP 2018's primary link between its mitigation strategy and the mitigation strategies of Kentucky's local (generally multi-jurisdictional) hazard mitigation plans: The multi-jurisdictional hazard mitigation plans current in 2013 served to create the list and the list was maintained through its use in developing mitigation actions for multi-jurisdictional hazard mitigation plans updated and developed after 2013.

Additionally and finally, the CK-EHMP 2013's "Option Diversification" list was and still is directly linked, as well, to local hazard mitigation plans. This is one reason for its obvious combination with CK-EHMP 2013's former *Inductive* mitigation action list: If Kentucky is going to advertise broader arrays of mitigation activity partially in order to affect demand for mitigation action types, then this advertisement primarily is targeted to local jurisdictions.

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<sup>2</sup> *Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards* <https://www.fema.gov/media-library/assets/documents/30627>.

## Evaluating Past Mitigation Actions

The previous Commonwealth of Kentucky Enhanced Hazard Mitigation Plan (CK-EHMP 2013) employed mitigation actions that emphasized the Commonwealth's role in facilitating and administering local mitigation. Specifically, the Commonwealth would provide three (3) categories of mitigation actions: It would 1. provide outreach and training; 2. it would address information asymmetry in mitigation action options; and 3. it would develop products that either increases mitigation or makes mitigation activity more efficient. (The Commonwealth employed a fourth set of mitigation actions that were linked to local mitigation plans with the intent of illustrating that Commonwealth promotes and partially is guided by local mitigation priorities.

The emphasis on facilitative and administrative activities implied that the Commonwealth did not expect to ever be able to "complete" its actions. Completion implies permanence or, at least, long-term. Local governments can complete an acquisition/demolition project at Location X and never have to do another acquisition/demolition project at Location X, again. A safe room can be started and can be completed and a local government can expect that completion to last thirty (30) years. How does an agency "complete," for example, "providing information to the general public and the housing industry about and finding grants and other funding sources toward construction of safe rooms"? Even where actions have an endpoint and, thus, in a sense might be considered "completed" (e.g., "[d]evelop/improve hazard assessment methodology related to forest fires"), this completion certainly is temporal (i.e., cannot be permanent) and is assumed as short-term. The Commonwealth does not improve hazard assessment methodology related to forest fires and then stop improving methodology for thirty (30) or fifty (50) years, or forever.

Consequently and with FEMA's advice and consent at the time, Kentucky evaluated its CK-EHMP 2013 mitigation actions using the terms "Near-Term" and "Enduring." So, a mitigation action listed in CK-EHMP 2013 could be "Near-Term," "Enduring," or "Near-Term and Enduring."

Below is language from the CK-EHMP 2013 clarifying the thought process behind "Near-Term," "Enduring," and "Near-Term and Enduring":

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**“Near-Term” vs. “Enduring” vs. “Near-Term and Enduring”**

*“[A mitigation action is] consider[ed] dichotomously whether the action is a “near-term” mitigation action or whether it should be considered ‘enduring’...The distinction lies in the ability to count. Those mitigation actions labeled ‘near-term’ should produce countable results. At the end of the...state planning cycle, the Commonwealth of Kentucky should be able to count the absolute number of or the number of projects addressing actions such as installing generators, constructing safe rooms, or burying utility lines.*

*“In contrast, evaluating...whether or not general education initiatives achieved their intentions is not countable. Alternatively, if they can be conceived as countable, it still may be unwise to attempt discrete evaluation or quantification when considering the goal of planning: Is the point to be able to count the number of general education initiatives undertaken during an arbitrary [five]-year cycle, or is the point that educating the public about hazard mitigation and all that is related is a constant, dynamic action that should never be achieved lest we admit perfection?”*

*“It should be clarified that this plan does purposefully use the adjective ‘near-term’: While ‘near-term’ mitigation actions can (or should be) quantified, they do not necessarily need to be quantified within the time limits arbitrarily placed upon updates to the Commonwealth’s hazard mitigation plan.*

*“...[O]ne of the consequences of Kentucky developing its goals and its actions from the mitigation strategies of its localities is to relinquish control over what types of mitigation actions are the foci of applications intended to (partially) fund mitigation actions between the years characterizing the planning cycle. While in its administrative role as a facilitator and coordinator, Kentucky Emergency Management and its supporting agencies can advertise or educate about different mitigation action types, the agencies (acting as proxies for the Commonwealth of Kentucky) cannot enforce or compel localities to heed their advice. As an unlikely yet illustrative example, KYEM can suggest that between 2013 and 2016, localities focus on mitigation actions that can be quantifiable like eliminating Severe Repetitive Loss (SRL) structures. However, if between 2013 and 2016 all 120 of Kentucky’s counties submit only mitigation action applications for reimbursement towards generator-placement, ultimately KYEM and its agencies can do nothing about it. KYEM must evaluate (and prioritize) its mitigation actions based upon the pool of mitigation actions submitted to it by Kentucky’s localities.*

*“Thus, there are mitigation actions that will be evaluated as ‘near-term’ in the sense that, at some point in the near future, Kentucky does expect to possess quantitative proof that such measures have been undertaken. (At some point some quantity of SRL structures will be eliminated.) However, there may be no quantifiable SRL elimination between the years of 2013 and 2016 when localities consider only the reimbursement for the purchasing of generators as best to mitigate their hazards.*

*“The term ‘enduring’ refers to those mitigation strategies that should never see results that are countable. As above illustrated, the Commonwealth should never be able to count the number of education initiatives it implemented. The Commonwealth can attempt to quantify or evaluate the results of a particular education initiative using some specified criteria and allowing for time; but, ‘evaluating’ an education goal by counting how many education programs were implemented is not evaluation and is worse than meaningless. Education initiatives and the like are ‘enduring’ mitigation strategies and actions. The Commonwealth hopes never to achieve ‘perfection’ in or satiation for such acts.*

*“The dichotomization between ‘near-term’ and ‘enduring’ does imply a third distinction to evaluation that this plan must consider: Those mitigation actions that ultimately are enduring but can provide some near-term countable results. The distinction relies upon location and time. Installing a siren cannot be considered ‘near-term’ and ‘enduring.’ It is only “near-term”: A project installs a warning siren at Location X; a new project will install a different siren at Location Y. Location X will not continuously need new sirens over time. The removal of debris, however, does allow for multiple ‘near-term’ projects to be conducted in one location. Location A in Kentucky can have a debris removal project approved for reimbursement with FEMA funds. However, even with such a countable project completed, the nature of the hazard implies that the task of debris removal should never be wholly completed. Over time, there will be more debris requiring removal at Location A. Thus, while ‘near-term’ projects can address debris removal at Location A at Time 0, another ‘near-term’ project will have to address debris removal at Time 1. Debris removal is an ‘enduring’ mitigation action that where countable ‘near-term’ projects can address (over time).”*

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To summarize, then, the idea in 2013 was to consider mitigation actions to either be addressed at some point in time (i.e., not necessarily within a then-three-year or five-year period) with expected countable results (i.e., “Near-Term”) or to be addressed continuously over time, i.e. to never really be considered “complete.” Finally, a third category would interact “near-term” with “enduring”. These were most synonymous with “repeated” actions: The general action itself would never be expected to truly be “completed.” But, along the way toward implementing the action, countable outcomes would result. For example, “conducting community assessment visits and floodplain audits on a regular basis” implies an action that should never be “completed” (i.e., Kentucky should never stop conducting community assessment visits and floodplain audits) but that will produce quantifiable outcomes, i.e., Kentucky performed x community assessment visits and y floodplain audits.



All this is to say, thank goodness that the State Plan Review Tool released in 2015 no longer requires an evaluation of a state's mitigation actions temporally. Admittedly, the logic reflected in 2013 seems a bit tortured and cumbersome in hindsight.

Consequently, evaluation of Kentucky's 2013 enhanced hazard mitigation plan actions indeed will conform to the "Complete"/ "Not Complete" dichotomy. "Not Complete" actions will have their statuses very briefly narrated.

It is to be understood that a "Complete" designation does not signify that the mitigation action should be excluded from the 2018 enhanced mitigation plan update. It is inferred here that a reason that temporally evaluating a state's mitigation actions was omitted by FEMA from the 2015/2016 update of the State Plan Review Tool in acknowledgement that a state's mitigation actions reflect the role of the state vis-à-vis local governments in mitigation, i.e., as implementing ongoing actions that help administer and facilitate mitigation for local governments and work continuously to reduce the vulnerability of jurisdictions and state assets to hazards identified in the risk assessment.

In fact, very few of 2013's mitigation actions will be omitted. Most were relevant actions in 2013 and their relevance continues to 2018 certainly.

Tables MS-1 through MS-4, then, list the 2013 Kentucky enhanced mitigation plan actions referencing the 2013 Kentucky enhanced hazard mitigation plan's goals. Tables MS-1 through MS4 adds a column that dictates whether the action is "Complete" or "Not Complete." Again, for most actions, "Complete" is more synonymous with "Addressed" than with any word that might imply that the Commonwealth should no longer continue to pursue the action.

A final additional column is added that describes how the mitigation action from 2013 is affected for this 2018 mitigation plan update: Does the action stay in the list? Or is it moved to another of the new lists of actions that link to this 2018 plan's new goals (i.e., Goals IV and V)? Is the action deleted? If so, why? An "N/A" means that the action will remain where it was in 2013, i.e., there is no change to the mitigation action and its placement adjacent to Kentucky's mitigation goals.

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**Table MS-1. CK-EHMP 2013 Goal I Mitigation Actions: Outreach**

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
01*	Assist where possible to include mitigation activity in emergency management training	Enduring	All Hazards	Complete	N/A
02.	<i>Regarding Residential and Non-Residential Safe Rooms:</i> Provide information to the general public and the housing industry about; find grants and other funding sources toward construction of	Enduring	Tornadoes; Severe Storm; Hail Storms	Complete	N/A
03.	<i>Regarding Repetitive-Loss and Severe Repetitive-Loss Properties:</i> Provide/ improve information and conduct outreach about Repetitive-Loss and Severe Repetitive-Loss properties within local jurisdictions' areas; educate community leaders and floodplain managers about the Repetitive-Loss/Severe Repetitive-Loss program	Enduring	Flooding	Complete	Moved to Goal V
04.	Conduct community assessment visits and floodplain audits on a regular basis, including after major flooding events	Near-Term & Enduring	Flooding	Complete	N/A
05.	Increase interagency communication (at both state and federal levels) regarding impact of the NFIP and floodplain management; use experts from other agencies to aid in these efforts	Enduring	Flooding	Complete	Moved to Goal IV

\* The "O" in the Action Number refers to "Outreach" action.

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
O6.	Continue agency partnerships to provide outreach, to develop floodplain management publications/promotional materials	Enduring	Flooding	Complete	Moved to Goal IV
O7.	Increase interagency communication regarding impact of the CRS; use experts from other agencies to aid in these efforts	Enduring	Flooding	Complete	Moved to Goal IV
O8.	Promote land-use planning for geologically high-risk areas	Enduring	Earthquakes; Karst/Sinkholes; Mine/Land Subsidence; Landslides	Complete	N/A
O9.	Conduct outreach toward local jurisdictions to provide technical assistance regarding the proper enforcement of building codes	Enduring	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	Complete	N/A
O10.	Conduct training seminars and workshops for local building enforcement officials	Near-Term & Enduring	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	Not Complete	Remains as Action for CK-EHMP 2018: Kentucky needs additional training in building codes.
O11.	Continually increase membership to the Kentucky Hazard Mitigation Council (KYMC)	Near-Term & Enduring	All Hazards	Complete	Deleted: KYMC does not need to expand continually
O12.	Hold regular meetings of the Kentucky Hazard Mitigation Council (KYMC)	Near-Term & Enduring	All Hazards	Complete	N/A

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
O13.	Promote the gathering and archiving of data by local jurisdictions regarding the types and extent of damages that occur after a hazard event	Near-Term & Enduring	All Hazards	Complete	N/A
O14.	Provide technical assistance to local jurisdictions regarding establishing, standardizing, and, ultimately, implementing local mitigation strategies	Enduring	All Hazards	Complete	N/A
O15.	Maintain an ongoing education and outreach effort aimed to educate public and private schools, elected officials, and the general public about the importance of hazard mitigation; conduct workshops, training, seminars, etc. regarding mitigation techniques, funding, planning, and benefit-cost analysis to aid in such efforts	Enduring	All Hazards	Not Complete	Remains as Action for CK-EHMP 2018: Began messaging and saw increased participation from schools. But, intent to be more systematic in outreach effort.
O16.	Develop new training programs where applicable and when the need arises	Near-Term & Enduring	All Hazards	Complete	N/A
O17.	Continue to develop and improve and to disseminate "Best Practices" in hazard mitigation	Near-Term & Enduring	All Hazards	Complete	N/A
O18.	Train specifically for human-made hazards	Enduring	Human-Made	Not Complete	Deleted: While important, not in purview of natural hazard plan

**Table MS-2. CK-EHMP 2013 Goal II Mitigation Actions: Option Diversification**

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<b>D1**.</b>	Promote to local jurisdictions the purchasing and installation of indoor and outdoor warning systems (e.g., telephone “ring-down” systems, weather-alert radios, and outdoor warning sirens)	Enduring	Severe Storms; Dam Failure; Earthquakes; Hail Storms; Tornadoes	Complete	N/A
<b>D2.</b>	Promote the purchasing of flood insurance; actively seek flood insurance participants	Near-Term & Enduring	Flooding; Dam Failure	Complete	N/A
<b>D3.</b>	Promote the use of mitigation projects aimed toward protection from flooding (e.g., elevations, acquisitions/demolitions)	Enduring	Flooding	Complete	This action is repeated for Goal V, specifying RL and SRL
<b>D4.</b>	Promote the design and construction of minor engineered water-management projects	Near-Term	Flooding	Complete	N/A
<b>D5.</b>	Promote the retrofitting of existing structures	Near-Term	Earthquakes; Karst/Sinkholes; Mine/Land Subsidence; Landslides	Not Complete	Remains as Action for CK-EHMP 2018: Began messaging. Intent to produce projects.
<b>D6.</b>	Encourage the creation of local building enforcement capabilities in communities that currently do not have such capabilities	Enduring	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	Complete	N/A

\*\* The “D” in the Action Number refers to the “Diversification” in “Option Diversification” action.

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
D7.	Explore possible options to promote toward owners of manufactured homes regarding financial incentives to secure their homes to their sites	Near-Term	Flooding; Severe Storms; Severe Winter Storms; Tornadoes	Complete	N/A
D8.	Promote utility-protection projects (e.g., those projects protecting electrical and water supplies and involving sanitary sewers)	Near-Term	All Hazards	Complete	N/A
D9.	Promote mitigation activities involving transportation systems	Enduring	Dam Failure; Earthquakes; Flooding; Karst/Sinkholes; Landslides; Mine/Land Subsidence; Human-Made Hazards	Complete	N/A
D10.	Promote the purchasing of generators and generator “hook-ups” for critical facilities	Near-Term	Dam Failure; Earthquakes; Flooding; Hail Storms; Severe Storms; Severe Winter Storms; Tornadoes; Human-Made Hazards	Complete	N/A
D11.	Encourage the integration of applicable hazard mitigation objectives developed for local hazard mitigation plans into local-level comprehensive plans	Near-Term	All Hazards	Not Complete	Remains as Action for CK-EHMP 2018: Need to Catalog Comprehensive Plans

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
D12.	Promote NIMS compliancy (so that local governments can better and more efficiently communicate during large-scale, multi-jurisdictional hazard events)	Near-Term & Enduring	All Hazards	Complete	N/A
D13.	Maintain a catalog of the hazards from which Kentucky suffers and mitigation research studies regarding said hazards	Near-Term	All Hazards	Complete	N/A
D14.	Make regular visits to Area Development Districts (ADDs) to elicit feedback from local jurisdictions and present mitigation options/projects	Near-Term & Enduring	All Hazards	Complete	N/A
D15.	Continue identifying locations where acquisitions are a preferable and viable mitigation option	Near-Term	Flooding	Complete	This action is repeated for Goal V, specifying RL and SRL
D16.	Promote residential hazard preparedness	Enduring	All Hazards	Complete	N/A
D17.	Conduct mitigation funding seminars	Near-Term & Enduring	All Hazards	Complete	N/A
D18.	Promote increased participation (where participation is not limited to appointment) in one of Kentucky's many mitigation-oriented committees, commissions, etc.	Near-Term & Enduring	All Hazards	Complete	N/A
D19.	Educate about evacuation routes and procedures	Enduring	All Hazards	Complete	N/A

**Table MS-3. CK-EHMP 2013 Goal III Actions: Public Goods-Type**

<b>ACTION #</b>	<b>ACTION</b>	<b>NEAR-TERM VS. ENDURING</b>	<b>HAZARD(S) ADDRESSED</b>	<b>STATUS FOR CK-EHMP 2018</b>	<b>REVISION FOR CK-EHMP 2018</b>
<b>P1**.</b>	Identify vulnerable populations through the Commonwealth of Kentucky's risk assessment	Near-Term	All Hazards	Complete	N/A
<b>P2.</b>	Target prioritization of mitigation activity toward projects that benefit vulnerable populations	Near-Term	All Hazards	Complete	N/A
<b>P3.</b>	Visit sites listed on Kentucky's Repetitive-Loss and Severe Repetitive-Loss lists in order to verify the accuracy of the lists	Near-Term	Flooding	Complete	Moved to Goal V
<b>P4.</b>	Establish hazard mitigation priorities for the retrofitting of existing state-level critical facilities and infrastructure (based upon the Commonwealth of Kentucky's risk and vulnerability assessment)	Near-Term	Earthquakes; Flooding; Hail Storms; Karst/Sinkholes; Mine/Land Subsidence; Landslides; Severe Storms; Severe Winter Storms; Tornadoes; Extreme Temperatures; Human-Made Hazards	Not Complete	Remains as Action for CK-EHMP 2018: Generally Kentucky needs to foster demand for retrofitting, especially out in western part of the commonwealth.
<b>P5.</b>	Collect data on and identify locations and effects of landslides in Kentucky, both current and historical; visit the sites of past landslides to collect the data	Near-Term	Earthquakes; Mine/Land Subsidence; Landslides	Complete	N/A

\*\*\* The "P" in the Action Number refers to the "Public" in "Public Goods-Type" actions.



ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
P6.	Develop, improve hazard assessment methodology related to dam failure: Examine, evaluate need for emergency action plans; examine the issues related to the effects of unregulated development below dams	Near-Term & Enduring	Dam Failure; Flooding	Complete	N/A
P7.	Review existing state-level agency programs, plans, and policies at least every three (3) years	Near-Term	All Hazards	Complete	N/A
P8.	Inventory critical facilities, leased infrastructure, identified vulnerable structures (from Area Development Districts' data); update inventory of state-owned facilities; continue improving risk and vulnerability criteria for all of the above	Near-Term	All Hazards	Not Complete	Remains as Action for CK-EHMP 2018. Moved to Goal IV. This action was considered inaccurately: Needs state agency integration.
P9.	Continue the Commonwealth of Kentucky's cost-share (12%) for FEMA Hazard Mitigation Grant Program (HMGP)-funded projects	Enduring	All Hazards	Complete	N/A
P10.	Identify effective local regulatory approaches to hazard mitigation	Enduring	All Hazards	Complete	N/A
P11.	Identify pre- and post-disaster mitigation-related funding opportunities for local jurisdictions	Near-Term & Enduring	All Hazards	Complete	N/A
P12.	Identify further "Best Practices" that can later be the subject of future outreach	Enduring	All Hazards	Complete	N/A

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
P13.	Review and update local hazard mitigation plans at least every five (5) years	Near-Term	All Hazards	Complete	N/A
P14.	Maintain, continue improving and updating the Kentucky Emergency Management (KYEM) website	Near-Term & Enduring	All Hazards	Complete	N/A
P15.	Develop brochures etc. defining hazards and mitigation funding opportunities	Near-Term	All Hazards	Complete	N/A
P16.	Continue to promote the design, improvement of a functional statewide emergency responders communication system	Enduring	All Hazards	Not Complete	Deleted: Replaced with action for statewide damage assessment app
P17.	Participate in, provide support to education/higher education program/curricular development, especially toward coursework aimed at emergency management professional and that focus on hazard mitigation and related fields	Enduring	All Hazards	Not Complete	Remains as Action for CK-EHMP 2018: Kentucky was successful in increasing participation by universities for mitigation. Formal coursework ties expected to follow.
P18.	Continue to update and modernize Kentucky's flood maps and flood insurance studies; provide mapping where currently there is little or none	Near-Term & Enduring	Dam Failure; Flooding	Complete	N/A

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
P19.	Continue to work with FEMA to prioritize communities for new mapping based upon population growth and the number of flood insurance policies	Near-Term	Dam Failure; Flooding	Complete	N/A
P20.	Collect data on and identify the effects from karst and sinkholes; continue to update databases regarding Kentucky's geologic hazards; work with Kentucky Geological Society (KGS), Department of Geological Sciences at the University of Kentucky, and USGS	Near-Term	Earthquakes; Karst/Sinkholes; Landslides; Mine/Land Subsidence	Complete	N/A
P21.	Continue to monitor, update, and maintain information regarding seismic activity	Near-Term	Earthquakes	Complete	N/A
P22.	Develop/Improve hazard assessment methodology related to forest fires	Near-Term	Forest Fires	Not Complete	Deleted: Not relevant. Rather, integration with Kentucky Division of Forestry is preferred. Moved to Goal IV.
P23.	Continue to improve the Commonwealth of Kentucky's hazard assessment methodology, generally	Near-Term & Enduring	All Hazards	Complete	N/A
P24.	Continue updating/improving and implementing the Community Hazards Assessment and Mitigation Planning System (CHAMPS)	Near-Term & Enduring	All Hazards	Complete	N/A

ACTION #	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
P25.	Develop/Improve hazard assessment methodology related to human-made hazards	Near-Term	Human-Made	Complete	N/A
P26.	Research how previously identified critical facilities are related to/networked with other facilities, i.e. "nested"	Near-Term	Human-Made	Not Complete	Remains as Action for CK-EHMP 2018: Action will be more specific to integration with DHS IDR program. Moved to Goal IV.
P27.	Identify vulnerabilities within and specific to individual critical facilities	Near-Term	Human-Made	Not Complete	Remains as Action for CK-EHMP 2018: Moved to Goal IV and linked to DHS IDR program.
P28.	Track progress of select mitigation projects after close-out in order to collect data to be used in loss avoidance studies	Near-Term	All Hazards	Complete	N/A

**Table MS-4. CK-EHMP 2013 Goal IV Mitigation Actions: Categorization of Local Mitigation Plans' Actions**

INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<b><i>Flooding (1)</i></b>	Action 1.1	Remove Debris	Near-Term & Enduring	Flooding, Landslide/Debris Flow, Tornadoes	Complete	N/A
	Action 1.2	Acquire Properties within Floodplains	Near-Term	Flooding	Complete	N/A
	Action 1.3	Install, Repair, Address Culverts	Near-Term	Flooding	Complete	N/A
	Action 1.4	Manage Vegetation, Wetlands	Enduring	Flooding	Complete	N/A
	Action 1.5	Address Storm Sewers	Near-Term	Flooding	Complete	N/A
	Action 1.6	Address Flood Gages	Near-Term	Flooding	Complete	N/A
	Action 1.7	Elevate Structures	Near-Term	Flooding	Complete	N/A
	Action 1.8	Provide Openings in Foundation Walls to Allow Flow of Water	Near-Term	Flooding	Complete	N/A
	Action 1.9	Repair Road Slides/Breaks	Near-Term	Flooding	Complete	N/A
	Action 1.10	Maintain Creek Banks	Near-Term & Enduring	Flooding	Complete	N/A
	Action 1.11	Monitor Erosion	Enduring	Flooding	Complete	N/A
	Action 1.12	Construct Levees/Flood Walls	Near-Term	Flooding	Complete	Add "Repair"
	Action 1.13	Realign Streams	Near-Term	Flooding	Complete	N/A
	Action 1.14	Eliminate Severe Repetitive Loss (SRL) Structures	Near-Term & Enduring	Flooding	Complete	Moved to Goal V.
	Action 1.15	Replace Inadequate Bridges	Near-Term	Flooding	Complete	N/A

INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<i>Improved Information (2)</i>	Action 2.1	Construct, Improve GIS Databases of Critical Facilities	Near-Term & Enduring	All Hazards, Human-Made	Not Complete	Remains as Action for CK-EHMP 2018: Needs to be targeted to ADDs.
	Action 2.2	Update Flood Insurance Rate Maps (FIRMs)	Near-Term & Enduring	Flooding	Complete	N/A
	Action 2.3	Construct, Improve GIS Databases of Repetitive Loss (RL) Structures	Near-Term	Flooding	Complete	Moved to Goal V.
	Action 2.4	Identify and Map At-Risk Bridges	Near-Term & Enduring	Flooding, Snow Loads, Earthquakes	Not Complete	Remains as Action for CK-EHMP 2018: Moved to Goal IV to integrate with KYTC
	Action 2.5	Evaluate Recovery Shelters	Enduring	Tornadoes, Winter Weather/Snowstorms, Radiological Emergencies	Complete	N/A
	Action 2.6	Perform Earthquake Studies	Near-Term & Enduring	Earthquakes	Complete	Add "Soil"
	Action 2.7	Identify At-Risk Structure Identification	Near-Term & Enduring	All Hazards, Human-Made	Not Complete	Deleted: Unclear; a core purpose of mitigation planning
	Action 2.8	Identify County/Local Sources for Data	Near-Term & Enduring	All Hazards	Complete	N/A
	Action 2.9	Create, Maintain List of Local Service Providers	Near-Term & Enduring	All Hazards	Complete	N/A
	Action 2.10	Perform Housing Identification	Near-Term & Enduring	All Hazards	Not Complete	Remains as Action for CK-EHMP 2018: KYEM needs this.
	Action 2.11	Create, Provide Sinkhole Location Maps	Near-Term	Karst/Sinkholes, Flooding	Complete	N/A

INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<b>Physical Improvements (3)</b>	Action 3.1	Install Generators	Near-Term	Flooding, Severe Wind, Utility Failure	Complete	N/A
	Action 3.2	Identify New Critical Facilities Outside of Hazard Areas	Near-Term	All Hazards, Human-Made	Complete	N/A
	Action 3.3	Construct Safe Rooms	Near-Term	Tornadoes, Winter Weather/Snowstorms, Radiological Emergencies	Complete	N/A
	Action 3.4	Relocate Critical Facilities/Residential Structures	Near-Term	Flooding, Landslide/Debris Flow, Subsidence	Complete	N/A
	Action 3.5	Bury Utilities	Near-Term	Thunderstorms/Lightning, Severe Wind	Complete	N/A
	Action 3.6	Acquire Emergency Equipment	Near-Term & Enduring	All Hazards	Complete	N/A
	Action 3.7	Acquire Vehicles for Road Clearing	Near-Term & Enduring	Flooding, Winter Weather/Snowstorms, Wildfires	Complete	N/A
	Action 3.8	Remove, Regulate, Retrofit Buildings in Hazard-Prone Areas	Near-Term	Earthquakes, Flooding, Landslide/Debris Flow, Subsidence	Complete	N/A
	Action 3.9	Trim "Right-of-Ways"	Near-Term & Enduring	Severe Wind, Utility Failure	Complete	N/A
	Action 3.10	Manage Hazard Areas	Enduring	All Hazards	Complete	N/A
	Action 3.11	Improve Water Infrastructure	Near-Term & Enduring	Droughts, Flooding, Wildfires, Utility Failure, Public Health Emergencies	Complete	N/A
	Action 3.12	Construct Emergency Relief Warehouses	Near-Term	All Hazards	Complete	N/A
	Action 3.13	Install Drought-Proof Security Links	Near-Term	Droughts	Not Complete	Remains as Action for CK-EHMP 2018
	Action 3.14	Maintain Lifeline Utilities	Enduring	Utility Failure	Complete	N/A

INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<b>Communications (4)</b>	Action 4.1	Install NOAA "All-Hazards" Radios	Near-Term & Enduring	All Hazards	Complete	N/A
	Action 4.2	Generally Upgrade Communications Equipment	Enduring	All Hazards	Complete	N/A
	Action 4.3	Install Other/Atypical Early Warning Systems	Near-Term	Flooding, Thunderstorms/Lightning, Radiological Emergencies	Complete	N/A
	Action 4.4	Install Warning Sirens	Near-Term	Flooding, Tornadoes	Complete	N/A
<b>Planning (5)</b>	Action 5.1	Recruit and Train Volunteers	Enduring	All Hazards	Complete	N/A
	Action 5.2	Coordinate Debris Removal	Near-Term & Enduring	Flooding, Landslide/Debris Flow, Tornadoes	Complete	N/A
	Action 5.3	Engage in Stormwater Management	Enduring	Flooding	Complete	N/A
	Action 5.4	Improve Interagency Communication	Enduring	All Hazards, Human-Made	Complete	N/A
	Action 5.5	Protect Information Systems and Infrastructure	Enduring	Human-Made	Complete	N/A
	Action 5.6	Identify "At-Risk" Critical Facilities	Near-Term	Human-Made	Complete	N/A
	Action 5.7	Formalize Hazard Mitigation Planning Committee	Near-Term & Enduring	All Hazards	Complete	N/A
	Action 5.8	Develop, Improve Evacuation Plans, Policies, and Procedures	Enduring	Hazardous Materials, Wildfires	Complete	N/A
	Action 5.9	Better, More Explicitly Address Severe Repetitive Loss (SRL) Properties in Planning	Enduring	Flooding	Complete	Moved to Goal V. Wording change to reflect continued address of SRL.
	Action 5.10	Develop, Improve Floodplain Management Procedures	Enduring	Flooding	Complete	N/A
Action 5.11	Plan to Maintain Water Supply	Enduring	Droughts, Extreme Temperatures	Complete	N/A	



INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
	Action 5.12	Better Staff Local Emergency Operations Centers (EOCs)	Enduring	All Hazards, Human-Made	Complete	N/A
	Action 5.13	Improve Assistance to Special Needs Populations	Enduring	All Hazards	Complete	N/A
	Action 5.14	Train, Equip, Maintain "Storm Spotters"	Enduring	Severe Wind, Thunderstorms/Lightning, Tornadoes	Complete	N/A
	Action 5.15	Monitor Repetitive Loss (RL) Properties	Enduring	Flooding	Complete	Move to Goal V.
	Action 5.16	Develop Database of Recurring Flood Hazards	Near-Term & Enduring	Flooding	Not Complete	Remains as Action for CK-EHMP 2018: Moved to Goal IV. Integration with KDOW.
	Action 5.17	Develop, Continue Wellhead Protection Plans	Enduring	Oil and Natural Gas	Not Complete	Deleted: Not relevant.
	Action 5.18	Develop Supplements to Jurisdictions' Emergency Operations Plans (EOPs)	Enduring	All Hazards	Complete	N/A
	Action 5.19	Develop Regional Agreements that Allow the Use of Inventoried Equipment	Enduring	All Hazards	Complete	N/A
	Action 5.20	Improve Planning that Assures Delivery of Emergency Services	Enduring	All Hazards	Complete	N/A
	Action 5.21	Develop, Improve Land-Use Planning	Enduring	All Hazards	Complete	N/A

INDUCTIVE ACTION CATEGORY	ACTION NUMBER	ACTION	NEAR-TERM VS. ENDURING	HAZARD(S) ADDRESSED	STATUS FOR CK-EHMP 2018	REVISION FOR CK-EHMP 2018
<b>Enforcement (6)</b>	Action 6.1	Enforce National Flood Insurance Program (NFIP) Flood Ordinances	Enduring	Flooding	Complete	N/A
	Action 6.2	Enforce, Pass Zoning and Land-Use Ordinances	Enduring	Flooding, Landslide/Debris Flow, Wildfires	Complete	N/A
	Action 6.3	Enforce Current Building Code Standards	Enduring	Flooding, Landslide/Debris Flow, Winter Weather/Snowstorms, Earthquakes, Wildfires, Structure Fires	Complete	N/A
	Action 6.4	Adopt Building Code Standards	Near-Term	Flooding, Landslide/Debris Flow, Winter Weather/Snowstorms, Earthquakes, Wildfires, Structure Fires	Complete	N/A

## S9.; S11., II + S10.: Mitigation Actions, Prioritization, and Funding Options; Changes to Prioritization

Below lists the Commonwealth of Kentucky's mitigation actions current as of October, 2018.

To remind, there are five (5) mitigation action lists. Each list corresponds to one of the Commonwealth's goals described above. In order, then, Kentucky has a list of actions pertaining to:

- **Goal I:** Outreach Actions
- **Goal II:** Mitigation Option Diversification Actions and Actions in Support of Local Jurisdictions' Mitigation Strategies both toward Maximizing Mitigation Activity
- **Goal III:** Public Goods Products Actions
- **Goal IV:** Actions Toward Integration with Commonwealth and Regional Agencies
- **Goal V:** Actions Addressing Repetitive-Loss (RL) and Severe Repetitive-Loss (SRL) Properties

The following lists are by no means exhaustive. They reflect the best available information and priorities at the time. It is expected that these lists will change and expand throughout the 2018 - 2023 commonwealth-wide planning cycle.

A significant number of actions derive from Kentucky's agencies. As Kentucky increases integration with its agencies and regional bodies, it is expected that increased and more varied actions will be added to the below lists.

Actions listed are accompanied by potential sources of funding of the actions.

Actions in blue font are actions new to the Commonwealth of Kentucky Enhanced Hazard Mitigation Plan 2018.

## Changes to Prioritization of Mitigation Actions

Again, it is relevant to stress that the mitigation actions approved for Kentucky's 2013 enhanced hazard mitigation plan emphasized administrative and facilitative actions. Thus, the Commonwealth of Kentucky's mitigation actions were not overtly prioritized. Or, rather, it was uncontroversial to assume that all of Kentucky's actions were highly prioritized. That they were listed implied high priority, in other words. Opportunities to implement the actions or expectations that the actions would be met both quotidianly and deliberately were important assumptions in the definition of a mitigation strategy.

Rather, Kentucky emphasized its list of actions developed organically from categorizing the mitigation actions from Kentucky's local hazard mitigation plans using categories articulated in the then-nascent (and unpublished) *Mitigation Ideas* document. Prioritization would be clarified toward how Kentucky would support and facilitate the mitigation actions and the mitigation projects demanded by its local jurisdictions.

Kentucky (through Kentucky Emergency Management) would prioritize the selection of mitigation projects and targets of outreach according to a very straightforward framework:

- Acquisition/demolition projects would be prioritized separately from all other project types: They uniquely 100% solve a hazard vulnerability problem and they have an important role in decreasing Kentucky's stock of Repetitive-Loss (RL) and Severe Repetitive-Loss (SRL) properties. Acquisition/demolition projects would be prioritized primarily by cost-effectiveness.
- Initiative projects (i.e., projects that due to their nature do not require Benefit-Cost Analysis) would be prioritized separately from all other project types: The demand for such projects far exceeds any supply of eligible external funding. So, a systematic prioritization strategy is futile. Ad-hoc determinations of need or, in the case of education or outreach programs, usefulness to the Commonwealth vis-à-vis demand at the time of eligible application cycle.
- All other project types would be categorized into one (1) of two (2) categories, **A-Projects** and **B-Projects**, where
  - **A-Projects** were all projects that protected critical facilities.
  - **B-Projects** were all projects that protected populations only.

**A-Projects** and **B-Projects** were further sub-categorized as follows:

A-Projects: Mitigation Actions that Protect Critical Facilities	A3: Addresses ADDs' "High-Risk"
	A2: Addresses ADDs' "Medium/Moderate-Risk"
	A1: Addresses ADDs' "Low-Risk"
B-Projects: Mitigation Actions that Protect Populations Only	B3: Addresses ADDs' "High-Risk"
	B2: Addresses ADDs' "Medium/Moderate-Risk"
	B1: Addresses ADDs' "Low-Risk"

A1 – A3 and B1 – B3 projects referenced an anomaly in Kentucky’s local mitigation plans at the time: Before this writer’s time working for the Commonwealth of Kentucky, it was apparent that significant interregional coordination in mitigation plan development had occurred amidst Kentucky’s Area Development Districts (ADDs), i.e., the entities responsible for developing Kentucky’s multi-jurisdictional, multi-hazard mitigation plans. All local mitigation plans had overtly distinguished in their risk assessments that hazard types were “High-Risk,” “Medium or Moderate Risk,” or “Low-Risk.”

Consequently, the Commonwealth of Kentucky would consider this designation of “High-Risk,” “Medium or Moderate Risk,” and “Low-Risk” hazard identification into account in prioritizing mitigation project selection and effort in administration and facilitation: A mitigation project that protected critical facilities but that addressed a “Low-Risk” identified hazard was prioritized lower than a mitigation project that protected critical facilities and addressed a community’s “High-Risk” hazard type. Similarly, a project that protected critical facilities and addressed a community’s “Low-Risk” hazard ranked higher than a project that protected populations only and addressed a community’s “High-Risk” hazard.

Gradually, updates of local hazard mitigation plans (developed generally by different and newer staffs at the ADDs) between 2013 – 2018 would drop the ranking of hazard types. This was logical, of course: Planning is about preparing for the worst regardless the perception of “risk.” And Kentucky suffers from such a variety of natural hazard types that “ranking” the importance of hazards relies on arbitrariness.

The Commonwealth of Kentucky, then, has dropped the A1 – A3 and B1 – B3 sub-categories of mitigation project types from its prioritization strategy.

Rather, it is relevant to stress here the following points:

- At the time of this writing, most of Kentucky's mitigation actions still are administrative and facilitative in nature. As in 2013, assume that their inclusion in this 2018 update of Kentucky's enhanced hazard mitigation plan signifies that it is a high priority for the Commonwealth to pursue.
- A significant number of the mitigation actions listed derive from commonwealth agency input. This also implies that systematic prioritization not only would be difficult, but likely is outside the scope of the agencies responsible for developing and maintaining the Commonwealth of Kentucky Enhanced Hazard Mitigation Plan for 2018 (CK-EHMP 2018), i.e., Kentucky Emergency Management (KYEM) and the University of Kentucky Hazard Mitigation Grants Program Office (UK-HMGP). Regardless the extent of integration and coordination, Kentucky's Division of Forestry will be pursuing its mitigation actions independently from and under different budgetary and political pressures than Kentucky Emergency Management.
- Prioritization, then, of most of the mitigation actions listed below is reliant upon relative cost-effectiveness and opportunities to pursue to equally "high" priority actions.
- The Commonwealth of Kentucky will continue to prioritize local mitigation projects using a framework similar to the one discussed above (that will be described below).
- Thus, where applicable and toward future plan maintenance and update as agency integration becomes more pronounced, Kentucky will use a prioritization strategy for its projects similar to strategy outlined for the Commonwealth's prioritization of local mitigation projects.

## Prioritization and Evaluation of Cost-Effective, Environmentally-Sound, and Technical-Feasible Mitigation Actions

At the time of this writing, the mitigation actions listed below primarily are administrative or facilitative in nature. These actions' inclusion in the mitigation strategy implies high priority for one of Kentucky's executive agencies or universities to pursue. Prioritization, then, is reliant on cost-effectiveness and technical feasibility, which in these cases translates to administrative capacity to implement at the time.

In prioritizing selection or pursuance of mitigation actions for local jurisdictions, Kentucky offers the following framework:

- Acquisition/Demolition projects are prioritized separate all other project types. They are prioritized according to cost-effectiveness, primarily. Acquisition/Demolition projects that address Repetitive-Loss (RL) and Severe Repetitive-Loss (SRL) properties are prioritized over any other acquisition/demolition type.
- Initiative and education/outreach campaigns are prioritized independently of all other project types. They are prioritized primarily in reference to amount of eligible external financing available. That Kentucky prioritizes jurisdictions declared in a disaster declaration and according to a financial risk assessment act here as very relevant variables for prioritization of these project types. Education/outreach projects are additionally prioritized according to the needs of the Commonwealth of Kentucky at the time for the educational/outreach initiative.
- All other project types are categorized into one (1) of two (2) categories determined by the response to the following question: *Does the project address vulnerabilities in critical facilities in addition to the expected protection of populations?*
  - Responding "Yes" classifies the project as an **A-Project**.
  - Responding "No" classifies the project as a **B-Project**.
    - **A-Projects** are prioritized over **B-Projects**
    - Cost-effectiveness is a primarily prioritization variable.
- Other prioritization criteria potentially include economic development needs and whether the population being served is a special-needs population.

Where applicable, the Commonwealth of Kentucky will prioritize its own projects according to the same framework as is expected of selection of local mitigation projects: 1) Acquisition/Demolition projects prioritized independently of all other project types and by their effect on RL and SRL properties and by cost-effectiveness; 2) Initiative and education/outreach campaigns prioritized independently of all other project types and according to the needs of the Commonwealth at the time; 3) whether the project addresses critical facilities (**A-Projects**) or populations only (**B-Projects**) with A-Projects ranking higher than B-Projects and cost-effectiveness driving both project categories; and 4) economic development needs and special-needs populations influencing prioritization.

Evaluation of completed commonwealth and local mitigation actions being funded through FEMA Hazard Mitigation Assistance (HMA) programs occurs through survey self-reporting and through financial risk assessments. Upon completion of a FEMA HMA-funded mitigation project, either the Commonwealth or the subrecipient receives a survey that is completed and filed. Financial risk assessments are conducted periodically for every subrecipient to a FEMA HMA grant. Subrecipients include commonwealth agencies and all varieties of local jurisdiction. Finally, Kentucky Emergency Management (KYEM) conducts regular on-site visits of completed mitigation projects funded through FEMA.

Regarding evaluation of other commonwealth entity mitigation actions, that involves compliance between the entity responsible for the mitigation action and reporting to its parallel federal agency and other oversight bodies.

As the list of mitigation actions illustrated in the Commonwealth of Kentucky Enhanced Hazard Mitigation Plan expands with increased integration of other commonwealth entities and the individual agency mitigation project lists such integration implies expands, prioritization and evaluation clarifications from other entities may become relevant.



**Table MS-5. CK-EHMP 2018 Mitigation Actions Toward CK-EHMP 2018 Goal I: Outreach**

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTIONS	ENTITIES DEVISING ACTION <sup>3</sup>
01.*	Assist where possible to include mitigation activity in emergency management training	All Identified Hazards	FEMA Management Cost <sup>4</sup>	KYEM; UK-HMGP
02.	<i>Regarding Residential and Non-Residential Safe Rooms:</i> Provide information to the general public and the housing industry about; find grants and other funding sources toward construction	Tornadoes; Severe Storm; Hail Storms	FEMA Management Cost	KYEM; UK-HMGP
03.	Conduct community assessment visits and floodplain audits on a regular basis, including after major flooding events	Flooding	FEMA Management Cost	KYEM
04.	Promote land-use planning for geologically high-risk areas	Earthquakes; Karst/Sinkholes; Mine/Land Subsidence; Landslides	FEMA Management Cost; KGS time costs <sup>5</sup>	KYEM; UK-HMGP; KGS
05.	Conduct outreach toward local jurisdictions to provide technical assistance regarding the proper enforcement of building codes	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	FEMA Management Cost; FEMA HMGP	KYEM; UK-HMGP
06.	Conduct training seminars and workshops for local building enforcement officials	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	FEMA Management Cost; Potentially FEMA HMGP	KYEM; UK-HMGP
07.	Hold regular meetings of the Kentucky Hazard Mitigation Council (KYMC)	All Identified Hazards	FEMA Management Cost	KYEM

<sup>3</sup> Agency acronyms are identified as follows: KYEM = Kentucky Emergency Management; UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; KGS = Kentucky Geological Survey; KDOW = Kentucky Division of Water; FEMA = Federal Emergency Management Agency; NWS = National Weather Service

\* The “O” in the Action Number refers to the “O” in “Outreach” actions.

<sup>4</sup>That “FEMA Management Cost” is labeled a funding option means that to implement the action will require the time (i.e., personnel salaries, benefits, etc.) of KYEM Mitigation Branch and/or UK-HMGP staff. KYEM Mitigation Branch and UK-HMGP staff are paid through FEMA Management Costs

<sup>5</sup> “Time costs” refers to any funding source that pays for the personnel salaries, benefits, etc. (i.e., labor and time) required to implement the action.

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTIONS	ENTITIES DEVISING ACTION <sup>3</sup>
08.	Promote the gathering and archiving of data by local jurisdictions regarding the types and extent of damages that occur after a hazard event	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
09.	Provide technical assistance to local jurisdictions regarding establishing, standardizing, and, ultimately, implementing local mitigation strategies	All Identified Hazards	FEMA Management Cost KDOW time costs; FEMA RiskMAP <sup>6</sup>	KYEM; UK-HMGP; KDOW
010.	Maintain an ongoing education and outreach effort aimed to educate public and private schools, elected officials, and the general public about the importance of hazard mitigation; conduct workshops, training, seminars, etc. regarding mitigation techniques, funding, planning, and benefit-cost analysis to aid in efforts	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
011.	Develop new training programs where applicable and when the need arises	All Identified Hazards	FEMA Management Cost KDOW financing;	KYEM; KDOW; FEMA
012.	Continue to develop and improve and to disseminate “Best Practices” in hazard mitigation	All Identified Hazards	FEMA Management Cost KDOW time costs	KYEM; UK-HMGP; KDOW
013.	Increase WeatherReady Nation participation	All Identified Hazards	Local Finance; NWS time costs	NWS
014.	Encourage purchase and daily usage of CoCoRaHS <sup>7</sup>	Flooding; Severe Winter Storms	Local Finance; Kentucky Association of Mitigation Managers (KAMM) financing; NWS time costs	NWS
015.	Increase 406 Mitigation	All Identified Hazards	FEMA Management Cost; FEMA PA C-G	KYEM

<sup>6</sup> FEMA RiskMAP in terms of implementing “Areas of Mitigation Interest (AOMIs)” from FEMA RiskMAP Discovery Meetings.

<sup>7</sup> CoCoRaHS: Community Collaborative Rain, Hail, and Snow Network

**Table MS-6, I. CK-EHMP 2018 Mitigation Actions Toward CK-EHMP 2018 Goal II: Option Diversification to Maximize Mitigation**

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTIONS	ENTITIES DEVISING ACTION <sup>8</sup>
D1**.	Promote to local jurisdictions the purchasing and installation of indoor and outdoor warning systems (e.g., telephone “ring-down” systems, weather-alert radios, and outdoor warning sirens)	Severe Storms; Dam Failure; Earthquakes; Hail Storms; Tornadoes	FEMA HMGP	KYEM
D2.	Promote the purchasing of flood insurance; actively seek flood insurance participants	Flooding; Dam Failure	KDOW financing, time costs <sup>9</sup>	KDOW; KYEM
D3.	Promote the use of mitigation projects aimed toward protection from flooding (e.g., elevations, acquisitions/demolitions)	Flooding	FEMA Management Cost <sup>10</sup> ; FEMA HMGP, PDM, FMA	UK-HMGP
D4.	Promote the design and construction of minor engineered water-management projects	Flooding	KDOW time costs	KDOW; KYEM; UK-HMGP
D5.	Promote the retrofitting of existing structures	Earthquakes; Karst/Sinkholes; Mine/Land Subsidence; Landslides	FEMA Management Cost	KYEM; KGS
D6.	Encourage the creation of local building enforcement capabilities in communities that currently do not have such capabilities	Earthquakes; Flooding; Severe Storms; Severe Winter Storms; Tornadoes; Forest Fires	FEMA HMGP	KYEM
D7.	Explore possible options to promote toward owners of manufactured homes regarding financial incentives to secure their homes to their sites	Flooding; Severe Storms; Severe Winter Storms; Tornadoes	FEMA Management Cost	KYEM
D8.	Promote utility-protection projects (e.g., those projects protecting electrical and water supplies and involving sanitary sewers)	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP

<sup>8</sup> Agency acronyms are identified as follows: KYEM = Kentucky Emergency Management; KDOW = Kentucky Division of Water; UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; KGS = Kentucky Geological Survey; KYTC = Kentucky Transportation Cabinet; KDF = Kentucky Division of Forestry; ADD = Area Development District; EPA = U.S. Environmental Protection Agency

\*\* The “D” in the Action Number refers to the “Diversification” in “Option Diversification” action.

<sup>9</sup> “Time costs” refers to any funding source that pays for the personnel salaries, benefits, etc. (i.e., labor and time) required to implement the action.

<sup>10</sup> That “FEMA Management Cost” is labeled a funding option means that to implement the action will require the time (i.e., personnel salaries, benefits, etc.) of KYEM Mitigation Branch and/or UK-HMGP staff. KYEM Mitigation Branch and UK-HMGP staff are paid through FEMA Management Costs.

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTIONS	ENTITIES DEVISING ACTION <sup>8</sup>
<b>D9.</b>	Promote mitigation activities involving transportation systems	Dam Failure; Earthquakes; Flooding; Karst/Sinkholes; Landslides; Mine/Land Subsidence; Human-Made Hazards	FEMA Management Cost; FEMA HMGP, PDM; KYTC time costs	KYEM; UK-HMGP; KYTC
<b>D10.</b>	Promote the purchasing of generators and generator “hook-ups” for critical facilities	Dam Failure; Earthquakes; Flooding; Hail Storms; Severe Storms; Severe Winter Storms; Tornadoes; Human-Made Hazards	FEMA Management Cost	KYEM
<b>D11.</b>	Encourage the integration of applicable hazard mitigation objectives developed for local hazard mitigation plans into local-level comprehensive plans	All Identified Hazards	FEMA Management Cost	UK-HMGP
<b>D12.</b>	Promote NIMS compliancy (so that local governments can better and more efficiently communicate during large-scale, multi-jurisdictional hazard events)	All Identified Hazards	FEMA Management Cost	KYEM
<b>D13.</b>	Maintain a catalog of the hazards from which Kentucky suffers and mitigation research studies regarding said hazards	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>D14.</b>	Make regular visits to Area Development Districts (ADDs) to elicit feedback from local jurisdictions and present mitigation options/projects	All Identified Hazards	FEMA Management Cost	UK-HMGP
<b>D15.</b>	Continue identifying locations where acquisitions are a preferable and viable mitigation option	Flooding	FEMA Management Cost; KDOW time costs	KYEM; UK-HMGP; KDOW
<b>D16.</b>	Promote residential hazard preparedness	All Identified Hazards	FEMA Management Cost	KYEM
<b>D17.</b>	Conduct mitigation funding seminars	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTIONS	ENTITIES DEVISING ACTION <sup>8</sup>
<b>D18.</b>	Promote increased participation (where participation is not limited to appointment) in one of Kentucky's many mitigation-oriented committees, commissions, etc.	All Identified Hazards	FEMA Management Cost; KDOW time cost; USACE time cost; et al. <sup>11</sup>	KYEM; KDOW; USACE
<b>D19.</b>	Educate about evacuation routes and procedures	All Identified Hazards	Local time costs	KYEM
<b>D20.</b>	Promote wildfire mitigation actions to be pursued both locally and by commonwealth	Wildfire	FEMA Management Cost; KDF time costs, financing	KDF; KYEM
<b>D21.</b>	Promote, facilitate development of Debris Management Plans	Flooding; Severe Storms; Tornadoes	FEMA Management Cost; FEMA HMGP	KYEM; ADDs
<b>D22.</b>	Promote, develop Green Infrastructure/Low-Impact Development Projects	Flooding; Landslides	FEMA Management Cost; FEMA HMGP, PDM, FMA; KDOW time costs	KYEM; KDOW; EPA
<b>D23.</b>	Promote, develop building codes enhancement, enforcement projects	All Identified Hazards	FEMA Management Cost; FEMA HMGP	KYEM
<b>D24.</b>	Seek, develop atypical mitigation projects (e.g., community-wide projects)	All Identified Hazards	FEMA Management Cost; FEMA HMGP, PDM, FMA	KYEM; UK-HMGP

<sup>11</sup> These funding options refer to: KYEM Mitigation Branch and UK-HMGP (via FEMA Management Cost) promoting formal and informal participation in mitigation-oriented committees; KDOW's time promoting Kentucky Association of Mitigation Managers (KAMM) membership; USACE and KDOW's time in promoting Silver Jackets; and that there are other agencies, companies, organizations whose time promotes participation in other relevant mitigation-oriented committees, commissions, etc.

**Table MS-6, II. CK-EHMP 2018 Mitigation Actions Toward Goal II: Actions from Local Hazard Mitigation Plans to be Facilitated to Maximize Mitigation**

<b>ACTION NUMBER</b>	<b>ACTION</b>	<b>HAZARD(S) ADDRESSED</b>	<b>FUNDING OPTIONS</b>	<b>ENTITIES DEVISING ACTION<sup>12</sup></b>
<b>L1.**</b>	Remove Debris	Flooding, Landslide/Debris Flow, Tornadoes	FEMA Public Assistance	Local Governments; KYEM
<b>L2.</b>	Acquire Properties within Floodplains	Flooding	FEMA HMGP, PDM, FMA; DLG Flood Match	Local Governments; KYEM; UK-HMGP; KDOW
<b>L3.</b>	Install, Repair, Address Culverts	Flooding	FEMA HMGP, PDM, FMA, PA C-G, 406 Mitigation; DLG Flood Match	Local Governments; KYEM; UK-HMGP
<b>L4.</b>	Manage Vegetation, Wetlands	Flooding	Local Finance; EPA grants	Local Governments; KDOW; EPA
<b>L5.</b>	Address Storm Sewers	Flooding	Local Finance	Local Governments
<b>L6.</b>	Address Flood Gages	Flooding	Local Finance; USGS financing	Local Governments; USGS; KDOW
<b>L7.</b>	Elevate Structures	Flooding	FEMA HMGP, FMA, PDM; DLG Flood Match	Local Governments; KYEM; UK-HMGP
<b>L8.</b>	Provide Openings in Foundation Walls to Allow Flow of Water	Flooding	Local Finance	Local Governments; KDOW
<b>L9.</b>	Repair Road Slides/Breaks	Flooding	KYTC financing; Local Finance	Local Governments; KYEM; KYTC; KGS
<b>L10.</b>	Maintain Creek Banks	Flooding	Local Finance; KDOW financing	Local Governments; KDOW
<b>L11.</b>	Monitor Erosion	Flooding	Local Finance; KDOW financing	Local Governments; KDOW
<b>L12.</b>	Construct or Repair Levees/Flood Walls	Flooding	USACE financing; Other commonwealth financing	Local Governments; KDOW; USACE
<b>L13.</b>	Realign Streams	Flooding	FEMA HMGP, PDM, FMA	Local Governments; KDOW; KYEM

<sup>12</sup> Agency acronyms are identified as follows: KYEM = Kentucky Emergency Management; KDOW = Kentucky Division of Water; UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; EPA = U.S. Environmental Protection Agency; USGS = United States Geological Survey; KYTC = Kentucky Transportation Cabinet; ADD = Area Development District; KGS = Kentucky Geological Survey; USACE = United States Army Corps of Engineers; DLG = Department for Local Government; KOHS = Kentucky Office of Homeland Security; NWS = National Weather Service

\*\*\* The "L" in the Action Number refers to the "Local" in "Actions Derived and Categorized from Local Hazard Mitigation Plans."

<b>ACTION NUMBER</b>	<b>ACTION</b>	<b>HAZARD(S) ADDRESSED</b>	<b>FUNDING OPTIONS</b>	<b>ENTITIES DEVISING ACTION<sup>12</sup></b>
<b>L14.</b>	Replace Inadequate Bridges	Flooding	KYTC; FEMA HMGP, PDM	Local Governments; KYTC; KYEM
<b>L15.</b>	Construct, Improve GIS Databases of Critical Facilities for ADDs	All Identified Hazards, Human-Made	Local Finance; ADD financing	Local Governments; ADDs; UK-HMGP
<b>L16.</b>	Update Flood Insurance Rate Maps (FIRMs)	Flooding	FEMA RiskMAP	Local Governments; KDOW
<b>L17.</b>	Evaluate Recovery Shelters	Tornadoes, Winter Weather/Snowstorms, Radiological Emergencies	Local Finance	Local Governments
<b>L18.</b>	Perform Earthquake and Soil Studies	Earthquakes	FEMA HMGP; KGS financing	Local Governments; KGS
<b>L19.</b>	Identify County/Local Sources for Data	All Identified Hazards	ADD time costs <sup>13</sup> ; FEMA Management Cost	Local Governments; UK-HMGP; KYEM
<b>L20.</b>	Create, Maintain List of Local Service Providers	All Identified Hazards	Local Government time costs	Local Governments
<b>L21.</b>	Perform Housing Identification	All Identified Hazards	Local Government Finance; ADD time costs	Local Governments; KYEM; ADDs; DLG
<b>L22.</b>	Create, Provide Sinkhole Location Maps	Karst/Sinkholes, Flooding	FEMA HMGP; KGS financing	Local Governments; KGS
<b>L23.</b>	Install Generators	Flooding, Severe Wind, Utility Failure	FEMA HMGP; Local Finance	Local Governments; KYEM
<b>L24.</b>	Identify New Critical Facilities Outside of Hazard Areas	All Identified Hazards, Human-Made	Local Finance; Local, KYEM, KDOW time costs	Local Governments; KYEM; KDOW
<b>L25.</b>	Construct Safe Rooms	Tornadoes, Winter Weather/Snowstorms, Radiological Emergencies	FEMA HMGP, PDM	Local Governments; KYEM
<b>L26.</b>	Relocate Critical Facilities/Residential Structures	Flooding, Landslide/Debris Flow, Subsidence	FEMA HMGP, PDM, FMA; DLG Flood Match	Local Governments; KYEM; UK-HMGP
<b>L27.</b>	Bury Utilities	Thunderstorms/Lightning, Severe Wind	FEMA HMGP, PDM	Local Governments; KYEM
<b>L28.</b>	Acquire Emergency Equipment	All Identified Hazards	Local Finance; KOHS financing	Local Governments; KYEM; KOHS
<b>L29.</b>	Acquire Vehicles for Road Clearing	Flooding, Winter Weather/Snowstorms, Wildfires	Local Finance; KYEM financing	Local Governments; KYEM

<sup>13</sup> "Time costs" refers to any funding source that pays for the personnel salaries, benefits, etc. (i.e., labor and time) required to implement the action.



<b>ACTION NUMBER</b>	<b>ACTION</b>	<b>HAZARD(S) ADDRESSED</b>	<b>FUNDING OPTIONS</b>	<b>ENTITIES DEVISING ACTION<sup>12</sup></b>
<b>L30.</b>	Remove, Regulate, Retrofit Buildings in Hazard-Prone Areas	Earthquakes, Flooding, Landslide/Debris Flow, Subsidence	FEMA HMGP, PDM	Local Governments; KYEM
<b>L31.</b>	Trim "Right-of-Ways"	Severe Wind, Utility Failure	Local Finance	Local Governments
<b>L32.</b>	Manage Hazard Areas	All Identified Hazards	Local Finance; KYEM time costs	Local Governments; KYEM
<b>L33.</b>	Improve Water Infrastructure	Droughts, Flooding, Wildfires, Utility Failure, Public Health Emergencies	FEMA HMGP, PDM, FMA; KDOW financing	Local Governments; KDOW
<b>L34.</b>	Construct Emergency Relief Warehouses	All Identified Hazards	Local Finance	Local Governments
<b>L35.</b>	Install Drought-Proof Security Links	Droughts	Local Finance	Local Governments; KYEM
<b>L36.</b>	Maintain Lifeline Utilities	Utility Failure	Local Finance	Local Governments
<b>L37.</b>	Install NOAA "All-Hazards" Radios	All Identified Hazards	FEMA HMGP; Local Finance	Local Governments; KYEM
<b>L38.</b>	Generally Upgrade Communications Equipment	All Identified Hazards	Local Finance; FEMA HMGP; KOHS financing	Local Governments; KYEM; KOHS
<b>L39.</b>	Install Other/Atypical Early Warning Systems	Flooding, Thunderstorms/Lightning, Radiological Emergencies	FEMA HMGP	Local Governments; KYEM
<b>L40.</b>	Install Warning Sirens	Flooding, Tornadoes	FEMA HMGP; Local Finance	Local Governments; KYEM
<b>L41.</b>	Recruit and Train Volunteers	All Identified Hazards	Local Finance, time costs	Local Governments
<b>L42.</b>	Coordinate Debris Removal	Flooding, Landslide/Debris Flow, Tornadoes	Local time costs; KYEM financing, time costs	Local Governments; KYEM
<b>L43.</b>	Engage in Stormwater Management	Flooding	Local Finance	Local Governments; KDOW
<b>L44.</b>	Improve Local Interagency Communication	All Identified Hazards, Human-Made	Local Finance, time costs; ADD time costs	Local Governments; ADDs
<b>L45.</b>	Protect Information Systems and Infrastructure	Human-Made	Local Finance; KYEM financing	Local Governments; KYEM
<b>L46.</b>	Identify "At-Risk" Critical Facilities	Human-Made	Local Finance; ADD time costs	Local Governments; KYEM; UK-HMGP
<b>L47.</b>	Formalize Hazard Mitigation Planning Committee	All Identified Hazards	ADD time costs	Local Governments



<b>ACTION NUMBER</b>	<b>ACTION</b>	<b>HAZARD(S) ADDRESSED</b>	<b>FUNDING OPTIONS</b>	<b>ENTITIES DEVISING ACTION<sup>12</sup></b>
<b>L48.</b>	Develop, Improve Evacuation Plans, Policies, and Procedures	Hazardous Materials, Wildfires	Local Finance, time costs; KYEM financing, time costs	Local Governments; KYEM
<b>L49.</b>	Develop, Improve Floodplain Management Procedures	Flooding	Local Finance; KDOW time costs	Local Governments; KDOW
<b>L50.</b>	Plan to Maintain Water Supply	Droughts, Extreme Temperatures	Local Finance	Local Governments
<b>L51.</b>	Better Staff Local Emergency Operations Centers (EOCs)	All Identified Hazards, Human-Made	Local time costs	Local Governments; KYEM
<b>L52.</b>	Improve Assistance to Special Needs Populations	All Identified Hazards	Local time costs	Local Governments; KYEM
<b>L53.</b>	Train, Equip, Maintain "Storm Spotters"	Severe Wind, Thunderstorms/Lightning, Tornadoes	Local Finance, time costs; NWS time costs	Local Governments; NWS
<b>L54.</b>	Develop Supplements to Jurisdictions' Emergency Operations Plans (EOPs)	All Identified Hazards	Local time costs	Local Governments; KYEM
<b>L55.</b>	Develop Regional Agreements that Allow the Use of Inventoried Equipment	All Identified Hazards	Local time costs	Local Governments
<b>L56.</b>	Improve Planning that Assures Delivery of Emergency Services	All Identified Hazards	Local Finance, time costs	Local Governments; KYEM
<b>L57.</b>	Develop, Improve Land-Use Planning	All Identified Hazards	Local Finance, time costs	Local Governments; KYEM; UK-HMGP
<b>L58.</b>	Enforce National Flood Insurance Program (NFIP) Flood Ordinances	Flooding	KDOW financing	Local Governments; KDOW; KYEM
<b>L59.</b>	Enforce, Pass Zoning and Land-Use Ordinances	Flooding, Landslide/Debris Flow, Wildfires	Local Finance	Local Governments; KYEM; UK-HMGP
<b>L60.</b>	Enforce Current Building Code Standards	Flooding, Landslide/Debris Flow, Winter Weather/Snowstorms, Earthquakes, Wildfires, Structure Fires	Local Finance; potentially FEMA HMGP	Local Governments; KYEM; UK-HMGP
<b>L61.</b>	Adopt Building Code Standards	Flooding, Landslide/Debris Flow, Winter Weather/Snowstorms, Earthquakes, Wildfires, Structure Fires	Local Finance; potentially FEMA HMGP	Local Governments; KYEM; UK-HMGP

**Table MS-7. CK-EHMP 2018 Mitigation Actions Toward Goal III: Public Goods Products**

<b>ACTION NUMBER</b>	<b>ACTION</b>	<b>HAZARD(S) ADDRESSED</b>	<b>FUNDING OPTION</b>	<b>ENTITIES DEVISING ACTION<sup>14</sup></b>
<b>P1****</b>	Identify vulnerable populations through the Commonwealth of Kentucky's risk assessment	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>P2.</b>	Target prioritization of mitigation activity toward projects that benefit vulnerable populations	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>P3.</b>	Establish hazard mitigation priorities for the retrofitting of existing state-level critical facilities and infrastructure (based upon the Commonwealth of Kentucky's risk and vulnerability assessment)	Earthquakes; Flooding; Hail Storms; Karst/Sinkholes; Mine/Land Subsidence; Landslides; Severe Storms; Severe Winter Storms; Tornadoes; Extreme Temperatures; Human-Made Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>P4.</b>	Collect data on and identify locations and effects of landslides in Kentucky, both current and historical; visit the sites of past landslides to collect the data	Earthquakes; Mine/Land Subsidence; Landslides	KGS financing	KGS; KYEM; UK-HMGP
<b>P5.</b>	Develop, improve hazard assessment methodology related to dam failure: Examine, evaluate need for emergency action plans; examine the issues related to the effects of unregulated development below dams	Dam Failure; Flooding	KDOW financing; FEMA HMGP	KDOW; KYEM; UK-HMGP
<b>P6.</b>	Review existing state-level agency programs, plans, and policies at least every three (3) years	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>P7.</b>	Continue the Commonwealth of Kentucky's cost-share (12%) for FEMA Hazard Mitigation Grant Program (HMGP)-funded projects	All Identified Hazards	Commonwealth of Kentucky budget	KYEM
<b>P8.</b>	Identify effective local regulatory approaches to hazard mitigation	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
<b>P9.</b>	Identify pre- and post-disaster mitigation-related funding opportunities for local jurisdictions	All Identified Hazards	FEMA Management Cost	KYEM
<b>P10.</b>	Identify further "Best Practices" that can later be the subject of future outreach	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP

<sup>14</sup> Agency acronyms are identified as follows: KYEM = Kentucky Emergency Management; UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; KGS = Kentucky Geological Survey; KDOW = Kentucky Division of Water; KDF = Kentucky Division of Forestry; NWS = National Weather Service; USACE = United States Army Corps of Engineers

\*\*\*\* The "P" in the Action Number refers to the "Public" in "Public Goods Products" actions.

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTION	ENTITIES DEVISING ACTION <sup>14</sup>
P11.	Review and update local hazard mitigation plans at least every five (5) years	All Identified Hazards	FEMA Management Cost; FEMA HMGP, PDM, FMA	UK-HMGP; ADDs
P12.	Maintain, continue improving and updating the Kentucky Emergency Management (KYEM) website	All Identified Hazards	FEMA Management Cost	KYEM
P13.	Develop brochures etc. defining hazards and mitigation funding opportunities	All Identified Hazards	FEMA Management Cost	KYEM
P14.	Continue to promote and update the design, improvement of a functional damage assessment application that can be used by multiple commonwealth and local entities.	All Identified Hazards	KYEM financing; eligible external financing	KYEM
P15.	Participate in, provide support to education/higher education program/curricular development, especially toward coursework aimed at emergency management professional and that focus on hazard mitigation and related fields	All Identified Hazards	FEMA Management Cost	KYEM; UK-HMGP
P16.	Continue to update and modernize Kentucky's flood maps and flood insurance studies; provide mapping where currently there is little or none	Dam Safety; Flooding	FEMA RiskMAP	KDOW; KYEM
P17.	Continue to work with FEMA to prioritize communities for new mapping based upon population growth and the number of flood insurance policies	Flooding; Dam Safety	FEMA RiskMAP	KDOW; KYEM
P18.	Collect data on and identify the effects from karst and sinkholes; continue to update databases regarding Kentucky's geologic hazards; work with Kentucky Geological Society (KGS), Department of Geological Sciences at the University of Kentucky, and USGS	Earthquakes; Karst/Sinkholes; Landslides; Mine/Land Subsidence	FEMA Management Cost; KGS financing	KGS; UK-HMGP
P19.	Continue to monitor, update, and maintain information regarding seismic activity	Earthquakes	KGS financing	KGS; UK-HMGP

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTION	ENTITIES DEVISING ACTION <sup>14</sup>
P20.	Continue to improve the Commonwealth of Kentucky's hazard assessment methodology, generally	All Identified Hazards	FEMA Management Cost; FEMA HMGP	UK-HMGP
P21.	Continue updating/improving and implementing the Community Hazards Assessment and Mitigation Planning System (CHAMPS)	All Identified Hazards	Eligible external financing; KYEM financing	KYEM
P22.	Develop/Improve hazard assessment methodology related to human-made hazards	Human-Made	Eligible external financing	KYEM; KDOW
P23.	Track progress of select mitigation projects after close-out in order to collect data to be used in loss avoidance studies	All Identified Hazards	FEMA Management Cost; other KYEM financing	KYEM
P24.	Install 911 signage on County Roads toward Improving Response to Wildfires	Wildfires	FEMA HMGP	KDF
P25.	Install signage on vulnerable roadways toward prevention of driving while flooded	Flooding	FEMA HMGP; other eligible external financing	NWS
P26.	Continue "special" studies, e.g., I-Wall Analysis, Studies; Planning Assistance to States Studies	Flooding; Dam Safety	USACE financing	USACE
P27.	Develop Loss Avoidance Studies	Flooding, primarily; All Identified Hazards	USACE financing; FEMA financing	USACE; KYEM
P28.	Develop atypical hazard mitigation plans	All Identified Hazards	FEMA HMGP, PDM, FMA	UK-HMGP
P29.	Develop statewide karst/sinkhole map that takes advantage of statewide LiDAR	Karst/Sinkholes	FEMA HMGP, PDM	KGS
P30.	Develop landslide-focused regional hazard mitigation plans	Landslides	FEMA HMGP, PDM	KGS

**Table MS-8. CK-EHMP 2018 Mitigation Actions Toward Goal IV: Commonwealth of Kentucky Integration**

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTION	ENTITIES DEVISING ACTION <sup>15</sup>
11.	Increase interagency communication (at both state and federal levels) regarding impact of the NFIP and floodplain management; use experts from other agencies to aid in these efforts	Flooding	FEMA Management Cost; Relevant agency time costs	KYEM; UK-HMGP; KDOW
12.	Continue agency partnerships to provide outreach, to develop floodplain management publications/promotional materials	Flooding	FEMA Management Cost; Relevant agency time costs	KYEM; UK-HMGP
13.	Increase interagency communication regarding impact of the CRS; use experts from other agencies to aid in these efforts	Flooding	FEMA Management Cost; Relevant agency time costs	KYEM; UK-HMGP; KDOW
14.	Inventory critical facilities, leased infrastructure, identified vulnerable structures (from Area Development Districts' data); update inventory of state-owned facilities; integration of commonwealth agency list; integration with local lists; continue improving risk and vulnerability criteria for all of the above	All Identified Hazards	FEMA Management Cost; Relevant agency time costs	KYEM; UK-HMGP; Finance and Administration Cabinet
15.	Commonwealth integrates with ADDs to maintain a list of loss estimates from various hazard types for identified critical facilities for integration into commonwealth mitigation planning	All Identified Hazards	FEMA Management Cost	UK-HMGP; KYEM
16.	Integrate usage of KYEM damage assessment application by other commonwealth agencies	All Identified Hazards	FEMA Management Cost; KYEM financing	KYEM; KYTC
17.	Integration with Kentucky Division of Forestry (KDF) to develop/improve hazard assessment methodology related to wildfire	Wildfires	FEMA HMGP; KDF financing	KDF; KYEM; UK-HMGP
18.	Integration with KDOW, KYEM, and ADDs to continue development of database of recurring flood hazards	Flooding	FEMA Management Cost	Local Governments; KDOW; KYEM; ADDs
19.	Research how previously identified critical facilities are related to/networked with other facilities, i.e. "nested"	All Identified Hazards	DHS-OIP-IDRP financing	DHS-OIP-IDRP; KYEM
110.	Integrate with DLG to maximize mitigation funding opportunities	All Identified Hazards	DLG match options (e.g., CDBG-DR; DLG Flood Match)	DLG; KYEM; KDOW

<sup>15</sup> Agency acronyms are identified as follows: KYEM = Kentucky Emergency Management; UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; KDOW = Kentucky Division of Water; KYTC = Kentucky Transportation Cabinet; KDF = Kentucky Division of Forestry; ADD = Area Development District; DLG = Department for Local Government; USACE = United States Army Corps of Engineers; DHS-OIP-IDRP = U.S. Department of Homeland Security, Office of Infrastructure Protection, Infrastructure Development and Recovery Program

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTION	ENTITIES DEVISING ACTION <sup>15</sup>
I11.	Collaborate with Silver Jackets	All Identified Hazards	FEMA Management Cost; USACE time costs	USACE; KYEM
I12.	KYTC integration with KYEM and Local Governments to identify and map At-Risk bridges	Flooding, Severe Winter Storms, Earthquakes	KYTC financing	KYTC; KYEM; Local Governments
I13.	Integrate Kentucky Silver Jackets with other states' Silver Jackets (e.g., Indiana and Ohio)	All Identified Hazards	USACE time costs; KDOW time costs	USACE; KDOW; KYEM
I14.	Integrate Environmental Protection Agency (EPA) mitigation planning with FEMA HMA planning	All Identified Hazards	EPA grants; FEMA HMGP	EPA; KDOW; KYEM
I15.	Integrate FEMA RiskMAP Areas of Mitigation Interest (AOMIs) with FEMA HMA planning	Flooding; Dam Safety	FEMA Management Cost	UK-HMGP; KDOW
I16.	Integrate Community Rating System 510 Floodplain Management Plans with FEMA HMA planning	Flooding	FEMA Management Cost	UK-HMGP; ISO/Verisk; KDOW
I17.	Integrate local THIRAs into FEMA HMA planning	All Identified Hazards	FEMA Management Cost; ADD financing	KYEM
I18.	Integrate KYEM Planning with U.S. Department of Homeland Security's Office of Infrastructure Protection (OIP)'s Infrastructure Development and Recovery Program (IDRP)	All Identified Hazards; Human-Made	KYEM financing; DHS-OIP-IDRP financing; FEMA Management Cost	KYEM; DHS-OIP-IDRP; UK-HMGP

**Table MS-9. CK-EHMP 2018 Mitigation Actions Toward Goal V: Addressing Repetitive-Loss (RL) and Severe Repetitive-Loss (SRL)**

ACTION NUMBER	ACTION	HAZARD(S) ADDRESSED	FUNDING OPTION	ENTITIES DEVISING ACTION <sup>16</sup>
RL1.	<i>Regarding Repetitive-Loss and Severe Repetitive-Loss Properties: Provide/ improve information and conduct outreach about Repetitive-Loss and Severe Repetitive-Loss properties within local jurisdictions' areas; educate community leaders and floodplain managers about the Repetitive-Loss/Severe Repetitive-Loss program</i>	Flooding	FEMA Management Cost	UK-HMGP; KYEM
RL2.	Promote the use of mitigation projects for RL and SRL properties (e.g., elevations, acquisitions/demolitions)	Flooding	FEMA Management Cost	UK-HMGP
RL3.	Continue identifying RL and SRL locations where acquisitions are a preferable and viable mitigation option	Flooding	FEMA Management Cost; KDOW financing	KYEM; UK-HMGP; KDOW
RL4.	Eliminate Severe Repetitive Loss (SRL) Structures	Flooding	FEMA FMA, HMGP	Local Governments; KYEM; UK-HMGP
RL5.	Construct, Improve GIS Databases of Repetitive Loss (RL) Structures	Flooding	Local Finance; KDOW financing	Local Governments
RL6.	Better, More Explicitly and Continuously Address Severe Repetitive Loss (SRL) Properties in Planning	Flooding	FEMA Management Costs; FEMA HMGP, PDM, FMA	Local Governments; UK-HMGP
RL7.	Monitor Repetitive Loss (RL) and Severe Repetitive-Loss (SRL) Properties	Flooding	FEMA Management Cost; KYEM financing	KYEM
RL8.	Visit sites listed on Kentucky's Repetitive-Loss and Severe Repetitive-Loss lists in order to verify the accuracy of the lists	Flooding	FEMA Management Cost; KDOW time costs	KYEM; KDOW

<sup>16</sup> Agency acronyms are identified as follows: UK-HMGP = University of Kentucky Hazard Mitigation Grants Program Office; KYEM = Kentucky Emergency Management; KDOW = Kentucky Division of Water