

# CHAPTER 1

## Purpose of and Need for Agency Action

*This section provides background information about flood control measures proposed along the Levisa Fork of the Big Sandy River and its tributaries within Pike County, Kentucky.*

*This information includes the purpose of the study, the Congressional authority that provided for it, and the project justification or need.*

### 1.1. Overview

#### Proposed Action

The purpose of agency action is to provide adequately engineered and constructed flood protection measures to protect residents and properties within the floodplain of the Levisa Fork and its tributaries within Pike County, Kentucky. Agency action is needed to comply with Federal legislation as detailed below, in order to limit loss of life and property within the study area from future flood events, unlike the multiple damaging historical flood events discussed below.

U.S. Army Corps of Engineers, Huntington District (USACE) is the lead agency for this action. Flood damage reduction would be accomplished by implementing a number of structural and non-structural measures as described in Chapter 2 of this document.

#### Study Area

Pike County is located within the Appalachian Mountains of Eastern Kentucky, in the watershed of the Levisa Fork of the Big Sandy River. The study area includes those floodplain areas that would be affected by a recurrence of the April 1977 flood within the Levisa Fork basin in Pike County, Kentucky. The study area, primarily residential in nature, includes incorporated areas of Pikeville, Coal Run, Elkhorn City, and unincorporated areas in Pike County subject to flood damage from the potential reoccurrence of flooding similar to that which occurred in April 1977. Also included in the geographic scope of the Proposed Action study area are the floodplain areas located along tributaries of the Levisa Fork that would be affected by backwater flooding from a recurrence of the April 1977 flood. Excluded from the study area is the floodplain located within the government property boundary of the Fishtrap Lake project in Pike County, Kentucky. A general map of the study area is shown as **Figure 1-1**.

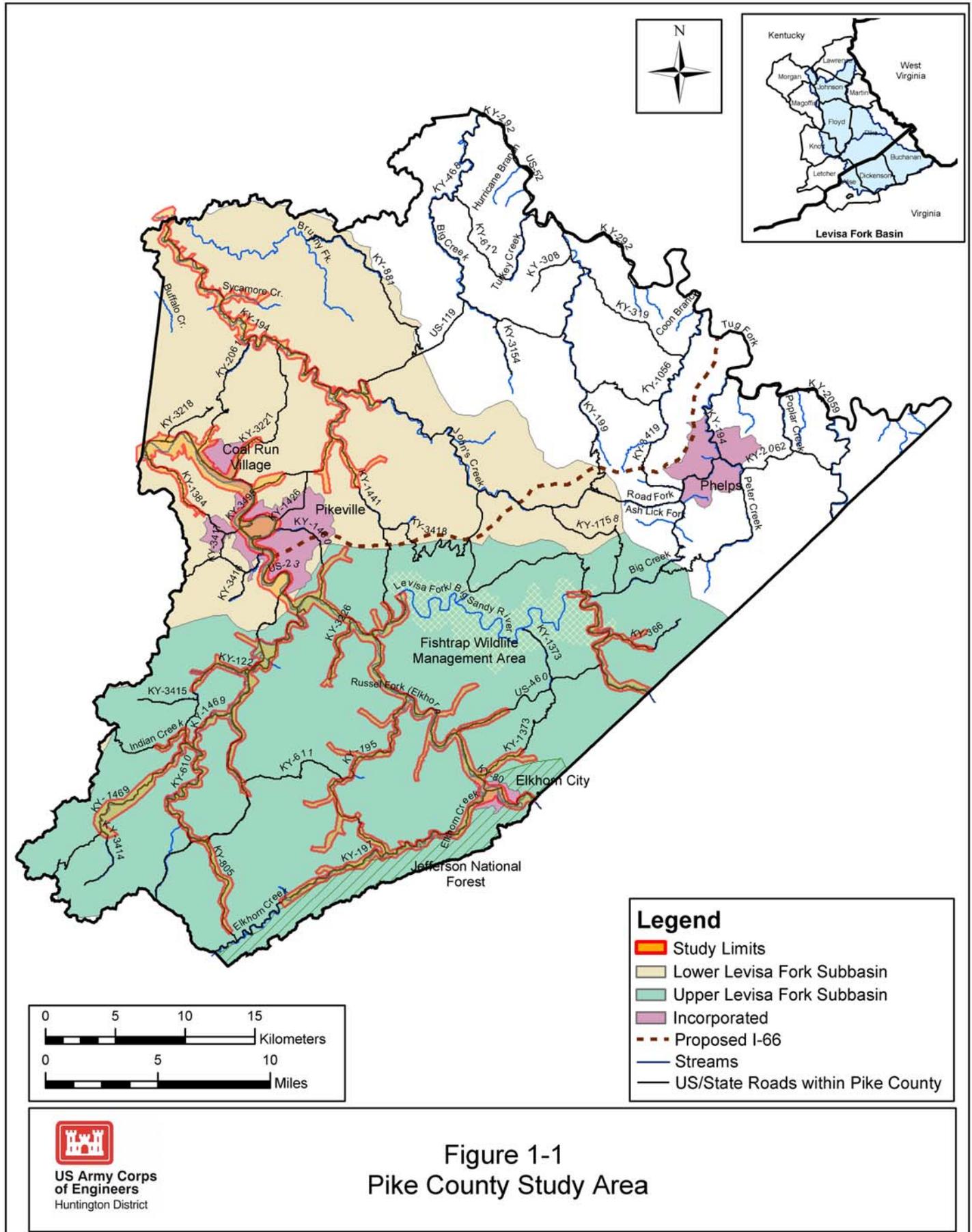


Figure 1-1  
Pike County Study Area



## 1.2 Project Purpose and Authority

### 1.2.1 Purpose of the Proposed Action

The purpose of the proposed Levisa Fork (Pike County, Kentucky) Flood Damage Reduction Project is to develop a cost effective, socially acceptable, and environmentally sound plan to reduce financial and personal losses, and social and economic disruptions within the Levisa Fork Basin that could result from a recurrence of a flood event equal to the April 1977 level.

### 1.2.2 Authority for the Proposed Action

Many Pike County communities within the floodplain of the Levisa and Russell Fork and tributaries were devastated by the April 1977 flood, which is the flood of record for much of the region. Congressional reaction to this flood event resulted in legislation that mandated implementation of flood damage reduction measures within the study area as described in the USACE Huntington District's Section 202 General Plan.

The Proposed Action was initially authorized by Section 202 of the 1982 Water and Energy Development Appropriations Act (WEDAA), which reads as follows:

“Section 202,

- a) the Secretary of the Army acting through the Chief of Engineers, is authorized and directed to design and construct, at full Federal expense, such flood control measures at or in the vicinity of
  1. Pikeville, Kentucky, and Grundy, Virginia, on the Levisa Fork of the Big Sandy River,
  2. Pineville, Kentucky, on the Cumberland River, and
  3. Williamson and Matewan, West Virginia, on the Tug Fork of the Big Sandy River.

As the Chief of Engineers determines necessary and advisable to afford these communities and other flood-damaged localities and their immediate environs on both the Levisa and Tug Fork of the Big Sandy River and Cumberland River a level of protection against flooding at least sufficient to prevent any future losses such as occurred in April 1977, at an estimated \$284 million. Non-Federal interests shall hold and save the United States free from damages due to construction works referred to in this section, and maintain and operate all such works after their completion in accordance with regulations prescribed by the Secretary of the Army.

- b) Appropriate sums have been authorized as may be necessary to carry out the provisions of this section.
- c) The Congress finds that the benefits attributable to the objectives set forth in Section 209 of the Flood Control Act of 1970 exceed the cost of the flood control measures authorized by this section.”

As expressed in subparagraph (c) of the 1982 legislation above, traditional cost/benefit analysis was set aside as a means of project justification. However, the USACE Ohio River Division is required under Corps of Engineers Ohio River Division Regulation (CEORD-R) 1105-2-4 to identify the “most cost-effective” alternative that also meets project objectives. In addition, under current regulations governing the formulation of water resources projects and other environmental requirements, the USACE is required to consider other effects of the Proposed Action such as social, economic, environmental, health and welfare aspects of the affected communities and residents in the project study area. Project alternatives are evaluated for their performance with regard to non-flood related aspects and potential benefits to the basin’s population.

The Water Resources Development Act (WRDA) of 1986, as amended by WRDA 1996 (PL 104-303), 12 October 1996, Section 202 (a)(1)(A), requires project cost sharing with an eligible non-Federal sponsor at a 65 percent Federal / 35 percent non-Federal ratio. In addition, a minimum of five percent cash for structural measures in flood control projects, including those constructed under Section 202, is required.

### **1.3 Need for the Project**

Since the earliest Levisa Fork Basin settlements, the residents faced the problem of frequent and severe flooding. The three largest floods occurred in 1862 (82,900 cubic feet per second (cfs) at Pikeville), 1957 (85,500 cfs at Pikeville), and 1977 (81,700 cfs at Pikeville). Sporadic cases of damaging floods have been reported throughout the basin since 1861. The City of Pikeville, Kentucky has suffered more than 50 damaging floods since 1903. A significant flood again inundated the Levisa Fork communities in May of 1984 (56,000 cfs at Pikeville). Due to the topography throughout the basin, the majority of the level, developable land is located in the flood hazard area. Thus, the majority of the communities and other cultural improvements are threatened by recurring floods (USACE 1997).

Various factors contribute to the frequency of flooding in the project area. The steep mountainous terrain in conjunction with large land areas of shallow forest soils is conducive to rapid rates of runoff. Development in the narrow floodplain and addition of impermeable surfaces adds to the high rates of stormwater runoff and contributes to higher amounts of damage from what would normally be smaller degrees of flooding. Frequent and rapid weather changes occur due to the passages of frontal systems associated with general low-barometric pressure areas. The occasional stagnation and stationary nature of these frontal systems sometimes causes prolonged precipitation, leading to stormwater runoff in excess of stream channel capacities (USACE 1998a).

In addition to the severe financial losses caused by frequent flooding, there are adverse social, physical, and psychological effects on the human population. The prospect of future flooding discourages proper maintenance and repair of buildings, which causes early deterioration of dwellings and business structures. Often the floods sever access to a community or neighborhood, effectively isolating elements of population. During extreme events, human lives are often negatively impacted when common utilities such as water, gas, and electricity are lost for days. Subsequent impacts to local economies due to business closures and loss of taxable property often compound the communities’ inability to recover from repetitive flooding. All of this results in significant trauma and hardship for the people residing in the area and reinforces their strong concern and

interest in developing and implementing effective flood damage reduction measures within the study area.



For most of the basin, the April 1977 flood was the highest recorded flood along the Levisa and Russell Forks. In Pikeville, Kentucky it was the third largest recorded flood in terms of stream flow (see above). The April 1977 storm system resulted in a series of heavy rainfalls over a 72-hour period in Dickenson and

Buchanan Counties in Virginia and portions of Pike County, Kentucky. The aggregation of these floodwaters began to reach its peak in the floodplains of Pike and Floyd Counties, Kentucky. The April 1977 flood registered over five feet higher on the Pikeville, Kentucky stream gage than would the theoretical 0.5 % chance flood (200-year frequency) and over seven feet higher than the theoretical 1% chance flood (100-year frequency).

A contemporary recurrence of the April 1977 flood would result in damages to over 4,770 structures in the basin, approximating \$282 million in 2004 dollars. In addition to structural damages, flooding damages to transportation facilities within the Levisa Fork basin would approach approximately



\$10.8 million in 2004 dollars. Additional damages to infrastructure such as sewage and water treatment facilities, airports, substations, and railroads, have not been quantified.

## 1.4 NEPA Objectives

The National Environmental Policy Act (NEPA) established a national environmental policy and goals for the protection, maintenance and enhancement of the environment. It also provides a process for implementing these goals within Federal agencies. NEPA requires all Federal agencies to incorporate environmental considerations in planning and decision-making. NEPA also established the President's Council on Environmental Quality (CEQ) and empowered them to develop regulations by which all Federal agencies would comply with NEPA. These regulations are published in the Code of Federal Regulations (CFR) at 40 CFR 1500-1508.

The USACE has promulgated its own procedures to provide guidance for the procedural provisions of NEPA. These procedures are published as USACE Engineer Regulations (ER) 200-2-2 (33 CFR Part 230). ER 200-2-2 is used in conjunction with the CEQ regulations. Specific guidance for planning USACE Civil Works water resource projects is also provided in ER 11-5-2-100.

Within the NEPA Regulations, a process is set forth where all agencies must assess the environmental impact of proposed Federal actions and consider reasonable alternatives to their proposed actions. For those actions with the greatest potential to create significant environmental effects, the consideration of the proposed action and alternatives are presented in an Environmental Impact Statement (EIS).

The USACE Environmental Operating Principles provide an approach to implementing NEPA that integrates the concept of environmental sustainability into the protection of the human and natural environment. The seven principles are:

1. Strive to achieve an environmental sustainability. An environment maintained in a healthy, diverse, and sustainable condition is necessary to support life.
2. Recognize the interdependence of life and the physical environment. Proactively consider environmental consequences of Corps programs and act accordingly in all appropriate circumstances.
3. Seek balance and synergy among human development activities and natural systems by designing economic and environmental solutions that support and reinforce one another.
4. Continue to accept corporate responsibility and accountability under the law for activities and decisions under our control that impact human health and welfare and the continued viability of natural systems.
5. Seek ways and means to assess and mitigate cumulative impacts to the environment; bring systems approaches to the full life cycle of our processes and work.
6. Build and share an integrated scientific economic, and social knowledge base that supports a greater understanding of the environment and impacts of our work.
7. Respect the views of individuals and groups interested in Corps activities, listen to them actively, and learn from their perspective in the search to find innovative win-win solutions to the nation's problems that also protect and enhance the environment (USACE 2003b).

In accordance with ER-200-1-5 and USACE Environmental Operating Principles, the USACE has incorporated environmental considerations throughout the decision-making process. The information gathered during the development of this Draft EIS (DEIS) has led to alterations in project design and incorporation of environmental mitigation measures and has provided an opportunity for the public and resource agencies to provide input into the planning process. This process has also allowed the USACE to address compliance with other environmental laws as part of a single review process rather than through separate reviews, thereby reducing paperwork while ensuring comprehensiveness.

## **1.5 Relationship to Previous Studies**

Since the enactment of the Section 202 legislation in October 1981 (Fiscal year 1982), there have been a number of documents prepared regarding potential alternatives to reduce flood damages in the overall Levisa Fork Basin. Several of these documents were not presented outside of the USACE Great Lakes and Ohio River Division. A brief description of each of these documents follows.

**1982: General Plan for Implementation of the Section 202 Program (GP)**

A General Plan for Section 202 Program implementation was transmitted to the Assistant Secretary of the Army for Civil Works (ASA(CW)) in April 1982. The report addressed flooding issues in the Tug and Levisa Forks of the Big Sandy River Basin as well as the Upper Cumberland River Basin. Although this report did not include formulation of a comprehensive flood damage reduction plan for the Levisa Fork Basin, it did discuss a number of potential flood damage reduction measures, such as construction of a dam at Haysi, Virginia, floodwalls, channels, and non-structural options that could reduce damages. Future components of the Section 202 Plan would be referred to as supplements to this original plan.

**1986: Levisa Fork Basin Draft General Planning Memorandum (GPM)**

The Levisa Fork Basin Draft General Planning Memorandum was completed in 1986. This report included a detailed formulation and evaluation of both structural and non-structural measures for flood control in the basin. Seven alternative plans were formulated and evaluated. The draft memorandum concluded that the Haysi Dam project, including the addition of four vertical inches of flood water storage capacity combined with three Local Protection Projects (LPPs) and non-structural measures was the most cost-effective plan. The proposed LPPs consisted of floodwalls and/or levees to protect four communities from flood events. These communities were: North Pikeville, Coal Run Village, Allen, and Prestonsburg, Kentucky. *The report was not circulated outside of the USACE Ohio River Division because no project sponsor was identified.*

**1987: Levisa Fork Basin Revised Draft General Planning Memorandum**

A Levisa Fork Basin Revised Draft General Planning Memorandum was prepared in 1987, based on comments on the 1986 report. The revised plan included additional evaluation of the LPPs and development and evaluation of alternative proposals for the dam at Haysi, Virginia. Alternatives included both a wet and dry dam, and an alternate location.

The revised memorandum concluded that the most cost-effective plan would be a dam at Haysi to provide flood water storage capacity, one LPP project at Allen, Kentucky, and non-structural measures. *The report was not circulated outside of the USACE Ohio River Division because no project sponsor was identified.*

**1991: Levisa Fork Basin Concept General Plan Supplement (GPS)**

This supplement to the GP included additional formulation of non-structural measures, further analysis of Haysi Dam design types, and additional LPP analysis. The report concluded the most cost-effective plan for reducing flood damages included construction of the Haysi Dam and non-structural measures. No LPP alternatives were included in the plan. *The report was not circulated outside of the Ohio River Division because no project sponsor was identified.*

**1992: Levisa Fork Basin Initial Project Management Plan (IPMP)**

This plan was prepared in response to letters of support for the Haysi Dam and flood damage reduction received from the Commonwealths of Kentucky and Virginia. The purpose of the plan was to guide development of a General Plan Supplement (GPS).

**1994: Levisa Fork Basin Revised General Plan Supplement Concept Report**

The revised concept report added provision of additional flood water storage capacity at the proposed Haysi Dam with a permanent pool to facilitate seasonal downstream whitewater recreation releases. This feature was added at the request of project sponsors.

**1997/8: Levisa Fork Basin Draft General Plan Supplement**

Draft and Final EIS (FEIS) documents were prepared as part of the Draft GPS in 1997 and 1998. Four alternatives for flood control were developed and evaluated in addition to the No-Action Alternative:

- No-Action
- Non-Structural Measures with a Six-Inch Wet Dam
- Non-Structural Measures with a Six-Inch Dry Dam (Least Cost Plan)
- Non-Structural Measures only (No Dam)
- Non-Structural Measures with a Six-Inch Wet Dam With Whitewater Storage (Locally Preferred Plan)

**2000: Re-Evaluation of the 1994 General Plan Supplement**

Following the 1998 FEIS, alternatives that included the Haysi Dam were discontinued from consideration because sponsorship from the Commonwealth of Virginia was withdrawn. Without the Haysi Dam as a project component affecting flood control over the entire Levisa Fork Basin, the USACE began to consider several smaller, stand-alone flood damage reduction projects within the Levisa Fork and Russell Fork Basins. These smaller projects included re-evaluation of several LPPs that were not considered cost-effective in conjunction with the Haysi Dam. The subject Proposed Action, flood damage reduction within Pike County, includes

reevaluation of local protection projects at North Pikeville and Coal Run Village, Kentucky.

## 1.6 Decision to be Made

This DEIS presents environmental consequences of each of the alternatives evaluated, including the No Federal Action Alternative, and identifies potential measures to mitigate these consequences. The DEIS review period will allow public and agency review and comment in accordance with Federal regulations. The USACE will give full consideration of comments and document these considerations in the FEIS. The FEIS will identify the least-cost alternative, the environmentally-preferred alternative and the locally-preferred alternative, and identify the USACE's selected alternative.

## 1.7 Scoping

Public participation is a significant component of the EIS process. The USACE considers public comments before making a decision. This section summarizes key public notification and participation events that have occurred as part of this process, and summarizes key issues identified during the public scoping process for this EIS.

A Notice of Intent (NOI) to prepare an EIS was given to the public and was published by the USACE in the *Federal Register* on September 5, 2003, thereby initiating a 60-day comment period on the proposed actions that ended on November 11, 2003. Notices advertising this action to the local public were also published by the USACE in the *Appalachian News Express*.

Input from Federal, state, and local agencies and public officials was also sought through a combination of consultation meetings and correspondence. An on-site project scoping meeting was conducted on October 9, 2003 with representatives of the US Fish and Wildlife Service (USFWS), Kentucky Department of Fish and Wildlife Resources, and Kentucky Division of Water (KDOW). Ongoing consultation with the Kentucky Historic Preservation Office has resulted in a draft memorandum of understanding regarding cultural resources within the study area. In addition, numerous meetings have been held with local officials, property owners, and local businesses. A summary of scoping activities with agencies and officials is included in **Appendix A**.

A series of public scoping meetings were held in order to receive public comments on the proposed actions with the purpose of assisting in defining the scope of analysis in the EIS. The meetings were held at Pikeville High School on September 25, 2003; in Elkhorn City on October 27, 2003; in Coal Run Village on October 28 2003; and again at Pikeville High School on October 30, 2003. Approximately 265 persons attended the four public scoping meetings. Comments received during the scoping process have also been included in Appendix A. Community Surveys were conducted as part of the socioeconomic impact and community cohesion analyses.

The public scoping process for this EIS identified that interested parties were primarily concerned about the potential for relocation, impacts to property values, loss of community cohesion, the potential for induced flooding, hardships from raising residences, potential impacts to habitat for the Indiana bat (an endangered species), and impacts to streams, including the Levisa Fork. Additional concerns included impacts to

viewshed and access to the Levisa Fork. In response to these concerns, the DEIS has placed increased focus on those topics of local concern.

## **1.8 Permits, Licenses, or other Consultation Requirements**

The USACE is responsible for obtaining Federal, state, and local permits required in order to implement the proposed action. The Fish and Wildlife Coordination Act– (16 United States Code (USC) § 661 et seq.) sets forth required coordination between the USACE and the USFWS. This legislation authorizes the Secretary of the Interior, through the USFWS to assist and cooperate with Federal, state and public or private agencies and organizations in the conservation and rehabilitation of wildlife. 16 USC 662(a) requires the USACE to consult with the USFWS and the state wildlife agency when proposing changes to streams or other bodies of water. The agencies' reports and recommendations are to be included in authorization documents for project construction or modification. The USACE is required to give full consideration to these reports and recommendations, and include wildlife mitigation or enhancement as justified to obtain maximum overall project benefits.

Coordination with USFWS and state regulatory agencies is ongoing. A Fish and Wildlife Coordination Act Report will be included in the FEIS.

## **1.9 Connected, Cumulative, and Similar Actions**

The CEQ Regulations require “connected actions, cumulative actions, and similar actions” (40 CFR 1508.25) to be considered together in a single EIS. Connected actions are defined as actions that “automatically trigger other actions, which may require environmental impact statements”, cannot or will not proceed unless other actions are taken previously or simultaneously, and are interdependent parts of a larger action and depend on the larger action for their justification.

Cumulative actions, when viewed with other proposed actions, have cumulatively significant impacts and should therefore be discussed in the same impact statement. Similar actions are defined as actions which, when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as timing or geography.

No connected actions have been identified with respect to the Proposed Action. The Proposed Action has not been triggered by any other action, nor will it trigger another action requiring an EIS. It is not dependent on another action. The Proposed Action is part of a larger action, i.e., flood damage reduction throughout the Levisa Basin as provided by Congressional Authorization. The various projects, however, including the Proposed Action, are not interdependent, and each could be implemented effectively on its own.

Cumulative actions with respect to the Proposed Action are considered to be past flood control actions within the Levisa Fork Basin, including Russell Fork, and reasonably foreseeable future flood control actions within the Levisa Fork Basin, as well as development within the basin. Major past actions include construction of the Pikeville Cut-Through, J.W. Flannagan Reservoir, North Fork of Pound River Reservoir and Fishtrap Reservoir on Russell Fork. The Pikeville Cut-Through was constructed from

1973 - 1987 and created a ¾-mile channel through Peach Orchard Mountain, providing a path for railroad tracks, rerouting of the Levisa Fork, and US Highways 23, 460, 119, and KY 80. The Cut-Through created a channel for the Levisa Fork to bypass downtown Pikeville. The 1,130-acre Fishtrap Lake, on the Russell Fork, was completed in 1968 to provide flood control for communities downstream.

Current or reasonably foreseeable actions include Local Protection Projects (LPPs) and non-structural flood control measures outside Pike County but within the Levisa Fork Basin, including Russell Fork. These actions include:

- Non-structural measures, Dickenson County, Virginia, Levisa Fork Basin (Environmental Assessment (EA) completed May 2003)
- Non-structural measures, Town of Martin, Floyd County, Kentucky (EA completed March 2000)
- LPP and non-structural measures, Floyd County, Kentucky, Levisa Fork Basin
- LPP and non-structural measures, Johnson County, Kentucky, Levisa Fork Basin
- Nonstructural measures, Buchanan County, Virginia, Levisa Fork Basin (EA completed November 2001)
- Associated development within the basin

These actions are discussed and assessed with respect to cumulative impacts on the Levisa Fork basin within this EIS.