South Carolina Department of
Natural Resources

July 2, 2001

Paul A. Sandifer, Ph.D.
Director
Alfred H. Vang
Deputy Director for
Land, Water & Conservation Division

Mr. Robert Shea
Acting Administrator, Federal Insurance Administration and Mitigation
Federal Emergency Management Agency
500 C Street SW
Washington, DC 20472

RE: Congaree River Flood Insurance Study, Richland and Lexington Counties, South Carolina

Dear Mr. Shea:

Pursuant to your June 20, 2001 letter, we are submitting the attached summary of our appeals, along with a time line for the Congaree River flood insurance restudy process. This process has been going on since January 1998 and is overdue for conclusion. We stand by the information we submitted during the official appeals process that concluded earlier this year. The analyses, data, and historical accounts described in this summary have been previously submitted to FEMA and are incorporated by reference. Independent studies conducted by FEMA and other appellants have resulted in similar findings, and consequently, validate the results of our hydrologic and hydraulic analyses.

We have carefully adhered to all FEMA regulations, requirements, and time schedules in developing and submitting information for our appeals. FEMA established February 15, 2001 as a deadline for submitting any new information and we object to any information received after that date. In the inadvisable event that FEMA is accepting new information beyond the February 15, 2001 deadline, we request a sufficient time to review and reply to such information before a final determination is made. We are also requesting that future meetings concerning this matter be held in Columbia, South Carolina, so that the State and local communities can reduce the amount of time and public monies expended in the completion of this process.

Please contact me at (803) 737-0800 if you have any questions.

Sincerely,

Alfred H. Vang

Alfred H. Vang
Deputy Director

CC: Joe Allbaugh, Director, FEMA
Dr. Joab Lesesne, Jr., Chairman, SCDNR Board
Dr. Paul Sandifer, Director, SCDNR
Buford Mabry, Chief Counsel, SCDNR

TIME LINE OF THE CONGAREE RIVER FLOOD INSURANCE RESTUDY PROCESS

Date	Event
1/21/98	Due to Lexington County Restudy along the Congaree River, a restudy for Richland County along the Congaree River was commenced.
6/5/98	Preliminary FIS and FIRM for Richland County Congaree River area released.
7/8/98	Community Coordination meeting held for Richland County FIS and FIRM
2/25/99	Revised Preliminary FIS and FIRM issued based on new analyses
8/5-6/99	Meeting held with FEMA, Dowberry and Davis, Burroughs and Chapin and Lockwood Greene to discuss HEC-2 hydraulic model.
8/12/99	Revised preliminary FIS and FIRM issued based on data submitted by Lockwood Greene.
8/19/99	Public meeting to discuss revised FIS and FIRM for Richland County.
12/10/99	DNR files official appeal with FEMA
12/13/99	Appeal period ends.
1/24/00	Public meeting held in Columbia, SC to exchange information with appellants.
4/26/00	Meeting with FEMA to present technical appeal data.
6/8/00	Meeting held in Fairfax, VA between FEMA, DNR, Dowberry and Davis on the Congaree River FIS and FIRM.
9/26/00	FEMA presented finding of appeal of Congaree River FIS and revised preliminary FIRM was also released.
10/4/00	Meeting in Washington, DC at FEMA HQ with communities, DNR and Columbia Venture to discuss the Congaree River FIS and FIRM appeal resolution.
10/18/00	Meeting held in Atlanta, GA at FEMA region IV offices to discuss the Congaree River FIS and FIRM appeal resolution.
11/22/00	Received letter from FEMA naming Columbia Venture an appellant in the Congaree River FIS and FIRM appeal.
1/29/01	Meeting in Atlanta, GA at FEMA Region IV offices to discuss the Congaree River FIS and FIRM appeal resolution.
2/15/01	Deadline imposed by FEMA for the submittal of new data on the Congaree River FIS and FIRM appeal resolution.
4/27/01	Meeting in Columbia, SC on the Congaree River FIS and FIRM appeal resolution.
6/19/01	LFD meeting scheduled for 6/20/01 in Columbia, SC cancelled by FEMA.
6/20/01	Meeting scheduled in Atlanta, GA to discuss the Congaree River FIS and FIRM appeal resolution 7/24/01.

The South Carolina Department of Natural Resources (SCDNR) is interested in the Congaree River and adjacent floodplains in Richland and Lexington Counties, South Carolina, for the following reasons: (a) to fulfill our responsibilities as the State's designated Coordinator for the National Flood Insurance Program; (b) to insure that the most appropriate scientific and technical information is used in preparing the flood studies, as authorized by S. C. Code of Laws Title 49, Chapter 3, and Title 48, Chapter 9; and (c) to protect the archaeologically, historically, and ecologically important Heritage Trust properties on the Lexington County side of the Congaree River that are owned and managed by the SCDNR.

The following is a summary of the key elements of our appeals dated December 10, 1999 and April 13, 2000 of the Preliminary Flood Insurance Study (FIS) for Richland and Lexington Counties, South Carolina. We continue to stand by the information contained in our appeals.

- Several discrepancies and inconsistencies contained in FIS 8/99 were pointed out in our letter dated November 29, 1999 and our appeals submitted in December 1999 and April 2000.

- FEMA 37, Chapter 4, Sections A and B indicate that the storage capability of dams operated for purposes other than flood control should not be considered in a FIS because the availability of storage is uncertain and not dedicated to flood control. As stated in FIS 8/99, the Lake Murray facility's purpose is hydropower generation, not flood control. Consequently, the FIS 8/99 should not have adjusted the floods of 1926-1930 using Lake Murray as a flood control structure, and should have used the entire 105-year period of record.

- SCDNR's analysis of the Saluda-Broad-Congaree River System indicates the following:
  a) Peak flows of both the Saluda and Broad Rivers occur almost simultaneously during all historical floods. As a result, the peak flows of the Congaree River should approximate the sum of the corresponding peak flows of the Saluda and Broad Rivers.
  b) Lake Murray provides little or no regulation of large floods when the lake is at or nearly at full stage.
  c) The Saluda River contributes only approximately one-third of the flow of the Congaree River.
  d) The station skew technique described in USGS Bulletin 17 was used along with the 105-year data set of Congaree River peak flows, including 67 years of peak flows that occurred while Lake Murray was in place, to determine the 100-year flood flow to be 331,000 cfs.
  e) Within the past 100 years, there have been five floods of the Congaree River in which the flow exceeded the 100-year flood flow of 252,000 cfs used in FIS 8/99.

- SCDNR used FEMA's HEC-2 model for flows higher than 200,000 cfs to delineate the Congaree River floodway in Richland and Lexington Counties. However, SCDNR assumed there is effective flow behind the levee in Richland County floodplain during a 100-year flood event. This assumption of effective flow is based upon the following:
  a) Eyewitness reports, video records, newspaper accounts, the existence of levee breaches, and accounts of the use of boats to rescue stranded persons, all provide evidence of flows behind the levee.
  b) The USGS developed a two-dimensional model in 1981 for the S. C. Department of Transportation to determine flow velocities within the Richland and Lexington County floodplains relevant to the construction of Interstate 77. Results from that model show flow velocities as high as 10 feet per second behind the levee in Richland County.
  c) The existing levees in Richland County are not certified as flood-control structures, and are constructed of local alluvial material, and as such, should not be relied upon to hold back the flow associated with a 100-year flood event.

- To assume that the floodplain behind the levee in Richland County has no effective flow (as was done in FIS 8/99) predetermines that the floodway line will fall along the levee. This presumption defeats the purpose of running the HEC-2 model – to impartially delineate the floodway boundaries.

- SCDNR delineated the floodway in Richland and Lexington Counties for a 100-year flood event and derived boundary lines that are very similar to those in FEMA's FIS 6/98.

- Due to the appeals of SCDNR and others, and the confusion regarding the various floodway delineations, FEMA decided to conduct an independent study (9/00) of the hydrology and hydraulics of the Congaree River floodplain. The independent study concluded that the 100-year flood magnitude is 292,000 cfs in the Congaree River. The U. S. Army Corps of Engineers' two-dimensional model was used in this study to evaluate the flow in Richland County during a 100-year flood (292,000 cfs), and this model indicated that there was effective flow in the Richland County floodplain. The floodway map produced by this independent study is in agreement with the SCDNR and FIS 6/98 floodway maps.

The results of FEMA's independent study of the hydrology and hydraulics of the Congaree River floodplain that were issued on September 26, 2000 represent a major improvement over those issued in August 1999. We commend FEMA for conducting this study and we support the results of this study.