Presentation By

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At

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Flood Map Study Appeal

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The mission of The South Carolina Department of Natural Resources is to serve as the advocate for and steward of the State's natural resources. The floodplains and floodways of our rivers and other waterbodies are important natural resources of the State. The SCDNR is designated by the Governor to serve as the State Coordinator of the National Flood Insurance Program. One of the responsibilities of the State Coordinator as authorized by 44 CFR section 60.3(b) (6) is to "assist in the delineation of riverine and coastal flood-prone areas, whenever possible, and provide all relevant technical information to the Administrator." The SCDNR is authorized by the State Water Resources Planning and Coordination Act and the Soil and Water Conservation Districts Act to 1) "coordinate the development of a statewide flood plain lands inventory and to formulate guidelines for the conservation, protection and use of flood plain lands," 2) consider "flood damage control or prevention measures including zoning to protect people, property and productive lands from flood losses," and 3) "conduct or arrange for such studies, inquiries, surveys or analyses as may be relevant to its duties."

During 1998-1999 FEMA conducted a restudy of the floodplain and floodway of the Congaree River in Richland and Lexington counties. As a result of this restudy, FEMA issued preliminary Flood Insurance Studies and Flood Insurance Rate Maps on June 5, 1998, February 25, 1999 and August 12, 1999. The August 12, 1999 preliminary map indicated no floodway on the landward side of the Manning dike in Richland County. In reviewing the preliminary August 12, 1999 FIS and FIRM, the SCDNR identified certain technical problems and inconsistencies in the study method and findings. These include a low estimate of the 100 year peak flow and the assumption of no conveyance behind the dike in Richland County. These matters are described in detail in SCDNR's submissions of November 29, 1999, December 10, 1999, and April 13, 2000. SCDNR attempted to resolve these issues without having to formally appeal but was informed by FEMA that the appeal was the only recourse. Consequently, SCDNR filed an appeal and was officially recognized as an appellant. In a letter to Dr. Paul Sandifer, Director of SCDNR, dated December 6, 1999, Mr. Todd Davison of FEMA Region 4 stated that "The South Carolina Department of Natural Resources has the authority as a "community" to file an appeal under 44 CFR independent of Richland County."

The reasons for SCDNR's appeal are to 1) fulfill our responsibilities as State Coordinator of the National Flood Insurance Program, 2) insure that the most appropriate scientific and technical information is used in preparing the studies and map, and 3) protect from potential flooding and scouring the archaeologically and ecologically important Heritage Trust properties on the Lexington County side of the river that are owned and managed by the SCDNR. Let me make it crystal clear that in our appeal of this matter, the SCDNR is not acting as an agent for FEMA and is not being used by FEMA to appeal FEMA's own decision as has been alleged by Columbia Venture in its submission of July 6, 2001.

SCDNR has not entered an appeal to oppose any general or specific development proposed for the Congaree River floodplain which has also been suggested by Columbia Venture. SCDNR's appeal is based solely on the three reasons I stated earlier.

In support of the appeal, SCDNR conducted hydrologic and hydraulic analyses to determine the appropriate 100 year peak flow and accurately delineate the floodway. As a result of these studies SCDNR determined that the 100 year peak flow is 331,000 cfs and the floodway boundary is very similar to FEMA's June 5, 1998 preliminary study and map.

Subsequent to the submission of SCDNR's findings and those of other appellants, FEMA arranged for an independent study by the firms of Dewberry & Davis, and Michael Baker Corporation. The results of this independent investigation are very similar to ours and generally confirm the findings of our studies and analyses. Further, the results are consistent with historical records of flooding on the Congaree River.

On September 26, 2000, FEMA issued a revised FIS and FIRM as part of the appeal resolution which was consistent with the findings of both the SCDNR and FEMA's independent investigation. Unlike the August 12, 1999 map, the September 26 map placed a significant area landward of the Manning dike within the regulatory floodway, which was consistent with the initial restudy map of June 5, 1998. The results of the September 26 study and map were appealed by Columbia Venture.

On February 12, 2001, Columbia Venture submitted results of studies conducted by their consultants in which they conclude that there is no floodway on the Richland County side of the Congaree River. SCDNR questions the findings of the Columbia Venture studies. Columbia Venture bases its conclusion of no floodway on the Richland County side of the river on three things 1) a new three part definition of floodway that is apparently of its own invention, 2) the assumption that existing dikes will prevent floodwaters behind the Manning dike from returning to the river, and 3) the assumption that the Columbia Venture hydraulic model is more accurate than that used by FEMA and the U. S. Geological Survey. These assumptions are not supportable.

Columbia Venture's new definition of a floodway introduces the conditions of a significant velocity corridor parallel to the river, a coherent flow pattern allowing the base flood to return to the river, and the requirement of an unobstructed waterway. These conditions are not contained in FEMA's official definition of a regulatory floodway, and we can find no basis for them in any statute or regulation. This is pure argument by Columbia Venture

and is not technical information which the regulations require in appeals.

Furthermore, the assumption that the existing dikes will prevent floodwaters behind the Manning dike from returning to the river is apparently refuted by legal testimony by [redacted], former owner of the property and current Columbia Venture partner. In his testimony, [redacted] indicated that during the 1976 flood there were breaches of dikes two and three (in the Gills Creek area), and he knew they would break from time to time. (The transcript of [redacted] testimony was previously submitted to FEMA by [redacted]) It should be noted that the flow of the 1976 flood was 155,000 cfs or only about half that of the predicted 100 year peak flow of 292,000 cfs. Also relevant to this issue is the fact that at 100 year peak flow an estimated 20 percent or 58,000 cfs would pass behind the Manning dike. This amount is more than six times the average flow of the Congaree River. It is difficult to imagine that this volume of water would simply pond up behind the dike and not exit at some point.

With regard to hydraulic modeling, FEMA used a two-dimensional model based on an existing model developed by the U.S. Geological Survey for the S.C. Department of Transportation. This model predicted significant flow behind the Manning dike and was used to develop the September 26, 2000 floodway map. Columbia Venture contracted with Exponent, Inc. to develop a new two dimensional flow model. Columbia Venture maintains that the Exponent model is superior because it uses current, state-of-the-art software, a larger modeling area, a different topographic data set and an increased modeling grid density. The fact is that both FEMA and Exponent used the same RMA2 modeling software and the SMS software to interface with the RMA2 model. So why were the modeling results so different–a significant flow behind the Manning dike for the FEMA model versus no significant flow for the Exponent model? Since SCDNR clearly understood the deadline for submission of information and comments to FEMA was February 15, 2001, we have not performed the necessary evaluations to answer this question. However, we urge FEMA, as the decision-maker in this matter, to carefully assess 1) the true impact of expanding the modeling area (this may actually artificially underestimate the flow behind the dike), 2) the validity and significance of the new topographic data used by Exponent (SCDNR and the S.C. Geodetic Survey were denied access to the property to collect and verify such data), 3) the overall importance of grid density in modeling results, 4) the appropriateness of Columbia Venture's worst case scenario of only two dike breaches totaling 1120 feet in length and allowing only 20,000 cfs through the breaches plus the assumption that the breaches would only occur at peak flow after half of the floodwater has already passed, and 5) Columbia Venture's omission of all recorded high water marks more than 1,000 feet from the river. Such assessment must be made before FEMA accepts and utilizes any results of the Exponent model. In addition, the results of the FEMA and SCDNR models more accurately reflect actual flood

conditions in the Richland County floodplain, as documented by historic records in submissions by [redacted]

At the insistence of Columbia Venture, FEMA held another meeting in Columbia on April 27, 2001 to allow appellants an opportunity to clarify their earlier submissions (by the February 15, 2001 deadline) but not submit new information. At that meeting, it was announced by FEMA that a final determination on the FIS and FIRM would be issued within four to five weeks. Subsequently, a meeting was scheduled for June 20, 2001 in Columbia for issuance of the final map and study. At the eleventh hour, FEMA postponed the June 20 meeting and scheduled today's meeting to allow the appellants to again present information. I must express our concern for the highly unusual process and question the appropriateness, if not the legality, of this meeting and particularly the portion of this meeting scheduled for private discussions with individual appellants. We believe that all aspects of this process should be open to all appellants, other affected parties and the public.

In conclusion, the SCDNR respectfully submits that:

- All parties to the restudy appeal had sufficient time to submit relevant information prior to the most recent FEMA deadline of February 15, 2001. We strongly object any further information after that deadline. However, if FEMA decides to accept information submitted after the February 15 deadline, we request sufficient time to review and submit comments on such information.

- Findings of studies and analyses conducted by the SCDNR and by the independent investigation conducted for FEMA as well as historical records and accounts of flooding along the Congaree River validate the September 26, 2000 floodway boundary map issued by FEMA.

- Results of modeling and other information submitted by Columbia Venture as part of its appeal of the September 26 study are not consistent with other appellant and independent studies and are in conflict with historic records of flooding along the river. There is a floodway in Richland County. Newspaper reports, film records, and eyewitness accounts have documented numerous events during which water from the Congaree River has crossed the dikes, flooded the land, and flowed downstream. Historically, this land has flooded. Historically, the dikes have failed. Historically, this land has conveyed flood water. Historically, there is a floodway in Richland County.

- Only the September 26 floodway boundary map developed by FEMA is sufficiently protective of public safety and public and private property interests along the Congaree River. We believe that if a map is adopted that is significantly less

protective that the September 26 version, the interests of the State of South Carolina will be harmed. It is imperative that public agencies such as FEMA and SCDNR make decisions on the side of protection when the public interest is at stake.

- We respectfully recommend that FEMA act expeditiously to conclude this matter and finalize this FIS and FIRM issued on September 26, 2000.