



Federal Emergency Management Agency

Washington, D.C. 20472

FEB 01 1984

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Honorable Raymond C. Henery
Mayor, City of Burlington
900 Fairhaven Avenue
Burlington, Washington 98223

Dear Mayor Henery:

This is in regard to a letter dated December 7, 1983, from Larry J. Kunzler protesting the Flood Insurance Study (FIS) for the City of Burlington, Washington. This letter will respond to Mr. Kunzler's 6 major objections to the FIS, as well as other comments raised in his protest.

First, Mr. Kunzler states that the FIS fails to accurately identify flood-flow paths. Given available topographic information for the Skagit River Delta and the uncertainties of where levee overtopping and/or failure would occur, it is impossible for the Federal Emergency Management Agency (FEMA) to predict the precise path of a 100-year flood. We estimate that approximately 130,000 cubic feet per second (cfs) of the 240,000 cfs 100-year discharge could not be handled by the Skagit River channel, but would instead travel through overbank areas. As explained in our August 22, 1983, letter to Mr. Kunzler, we cannot divide that flow with any degree of certainty between Burlington proper (Gages Slough and overbank areas) and the agricultural area north of the city. The nature of the delta is such that flooding occurs in sheetflow patterns. Topographic variation will result in some split flow at Interstate 5, but the overbank flood plain itself will not diverge into 2 distinctly separate entities until the flow reaches Bay View Ridge.

Mr. Kunzler's second contention is that FEMA failed to provide detailed topographic data for the Skagit River Delta. Under agency guidelines, the best available topographic data were used to prepare the Burlington FIS. FEMA has no statutory or regulatory requirement to prepare new topographic data. FEMA recognized that existing information was not adequate throughout the approximately 200 square mile delta to prepare a conventional hydraulic analysis. Working within available funding limits, the study effort was intended to provide a generalized approach that improves upon the current data base for flood plain management.

Next, Mr. Kunzler criticizes FEMA for not designating a regulatory floodway. To reiterate our August 22 letter, for purposes of the National Flood Insurance Program (NFIP), the floodway concept was designed for a typical river valley where the channel represents the lowest point in the flood plain, with the

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17

most effective conveyance area immediately adjacent. The Skagit River Delta deviates greatly from the usual situation. Limited channel capacity results in bank and levee overtopping and subsequent overland sheetflow flooding. Conventional floodway analysis was not considered appropriate due to the unpredictability and variability of flow paths between various flood events, which is complicated by uncertainties about where levee failures will occur, the sequence of failures, and volumes of flow. Thus, only lands within and including the Skagit River levees were designated as floodways in the conventional manner.

However, FEMA recognizes that the majority of overbank flow occurs over Interstate 5 in the vicinity of the George Hopper Interchange between Gages Slough and the drive-in theatre and from near Edison High School to just south of Cook Road. Approximately 80 percent of the total overbank flow crosses the highway in these segments. Remaining flow will pass under the interstate at openings such as Gages Slough and other drainages and road underpasses. It is FEMA's opinion that these types of areas should be kept free of fill and other obstructions or otherwise managed as floodways, so that their conveyance characteristics are maintained.

Mr. Kunzler's fourth point states that FEMA failed to utilize historical records when determining floodflow paths, as well as recorded depths in past flooding events. When preparing the Burlington FIS, past flooding was considered as much as possible; indeed, the overall extent of flooding in the study is consistent with historical events. However, historical flooding is only one element used in determining flood risk. The extreme uncertainty surrounding levee breaks and failures precludes the sole use of past events to predict future risks. Subsequent development, levee improvement efforts, sandbagging during flood events, and other actions make it unlikely that recorded depths will be duplicated or recreated.

Next, Mr. Kunzler states that your city's FIS should be delayed until Skagit County's comprehensive drainage study of Gages Slough is completed. It is FEMA's goal to convert communities from the Emergency to the Regular Phase of the NFIP at the earliest possible date. This allows residents to obtain greater amounts of insurance coverage at rates reflecting their estimated flood risk. The study effort for Burlington has been completed, and its processing will continue. However, in recognition of the fact that better, more up-to-date information may become available, FEMA has a procedure whereby flood maps can be revised. Under Title 44, Chapter 1, Part 65 of the Code of Federal Regulations (CFR), a community may at any time after the conversion process submit scientific or technical data, and warranted changes will be made to the FIS.

Mr. Kunzler's sixth point is that the FIS fails to identify the entity with legal responsibility for implementing the study. That responsibility rests with the City of Burlington, which through adoption and enforcement of flood plain management regulations meeting FEMA standards, retains its NFIP eligibility.

Mr. Kunzler also remarks on our standard FIS statement that "areas studied by detailed methods were chosen with consideration given to all proposed construction and forecasted development through 1987." This does not mean that

the FIS considered the effects of future development, but rather that areas to be studied by detailed rather than by approximate methods were selected based on your community's prediction of where development is likely to occur. The FIS must be based on hydrological conditions existing when the study becomes effective.

FEMA has accorded Mr. Kunzler's comments serious review. We appreciate and share his concerns about regulating development to minimize increases in the flood hazard. However, Mr. Kunzler did not submit any scientific or technical data refuting our proposed base flood elevations, which, under NFIP statutes, is the sole basis of appeal. Therefore, no changes to the Burlington FIS are warranted.

Should you have any questions regarding this matter, please do not hesitate to contact our Bothell, Washington, Regional Office at (206) 483-7282, or members of my staff in Washington, D.C., at (202) 287-0230.

Sincerely,



Brian R. Mrazik, Ph.D.
Chief, Risk Studies Division
Federal Insurance Administration

cc: Larry J. Kunzler
Emily Ra, State of Washington Department of Ecology