OVERVIEW AND CONCURRENCE FORM
BASIS FOR REQUEST AND TYPE OF REVISION COMMENTS
ATTACHMENT FOR 5.a NARRATIVE DESCRIPTION

Basis for Request and Type of Revision: Updated topographic mapping
Newington was approved to join the National Flood Insurance Program in July, 2006. This LOMR Application and most of the attachments were begun in November/December, 2007 with coaching and assistance from: Brent McCarthy, Watershed Concepts (FEMA Contractor); David Knowles, (PE at FEMA Region 1); and Jennifer DeLong, NH Dept. of Energy & Planning (FEMA Coordinator). Completion of this effort was interrupted for four years when the town's volunteer contributor fell off a barn roof shoveling snow - breaking his back. By February, 2011 he has now recovered well enough to sit at a computer to complete this application. In 1986 Newington's shoreline was surveyed by Stone and Webster Engineering Corporation (SWEC) to support a 1-D storm surge analysis from the mouth of the Piscataqua River, through the Great Bay Estuary and up the Squampscott River to Exeter. This SWEC analysis is now a significant component of the currently effective Rockingham County FIS.

The town examined the 1-D Model results (produced under the SWEC Job Order 13221) sent by David Knowles (then a SWEC employee) to Mike Goetz of FEMA, Region 1. These results confirmed that **no changes to either hydrology or to hydraulics** would be sought. The originals of this SWEC analysis exist in paper form only, and are stored at the Newington Town Hall. A summary of that analysis is in the attached Excel file named Stone_Webster_1986_FIS_elevs.xls. This and all other attachments and submissions are in the enclosed FIRM LOMR Application CD. The last pages of this application reproduce the README file to describe all files on the CD.

In the spring of 2006 Bradstreet Consultants, Inc. of Manchester Maine were hired to provide digital certified topographic maps and orthometric products. The Project Manager was Jon Giles - a licensed surveyor in Maine. A flight (flown jointly for Kittery ME, Portsmouth and Newington NH) produced color vertical metric aerial photography at 1:7,200 or 1" = 600' on the film. This film was scanned by Bradstreet at 14 microns per pixel (1815DPI) to provide the digital basis for the planimetric mapping. A Digital Terrain Model was created using the NAVD 88 vertical datum using the vertical benchmark at Station No 8423898, Fort Point, Newcastle Island, NH (Node 2 in the SWEC 1-D storm surge analysis). GPS ground control established resulted in mapping elevations accurate to within 1.0 feet. The control has been reviewed to determine that the control meets National Map Accuracy Standards.

The NOAA online VERTCON model was run by the Town's contributor against the benchmark at Fort Point and the nodes (transects) 8 through 22 of the SWEC 1-D storm surge analysis with latitude/longitude plotted to the Newington end of each transect. This analysis confirmed that a single conversion factor of - 0.76 feet could be used throughout Newington. The results of the VERTCON model are shown in the file GVD_to_NAVD_conversion_061121.rtf.

Two elevation lines of 6.24 feet and 8.24 feet were exported from the NAVD88 Digital Terrain Model as a 3D AutoCAD .dwg file. This file was imported into an ESRI ArcGIS 9.2 application where it was converted into a shapefile using NGVD 1929 as the Z-axis for 7-foot and 9-foot elevations. These 100-year return period flood elevations are identical to those in Figure 5 of the currently effective Rockingham County FIS (PDFs are submitted with this application). The resulting 9-foot elevation along the Piscataqua River shoreline was tied into the existing floodplain boundary at the Schiller Station power plant in Portsmouth. The 7-foot elevation for the Newington shoreline in Little Bay - above Dover Point (Hilton Park) - and in Great Bay was tied in with the existing FIS floodplain boundary at the Newington-Greenland town line. These tie-ins are identified on a false infrared aero photo named Newington_tie_ins.pdf.

During the intervening four years, the original Project Manager, Jon Giles, moved to Sebago Technics Inc and his new firm is engaged to review and certify the GIS products of this LOMR application. He is joined by Dan Riley PE, CFM, a certified floodplain manager who also has experience working with FEMA in flood-related matters, and Matthew Ek, PLS, a licensed surveyor in New Hampshire.