

ATTACHMENT A
Task Order HSFEHQ-08-J-0007
Statement of Work
HSFEHQ-06-D-0162
Hazard Mitigation Technical Assistance Program (HMTAP)

DR-1695-NH

Investigation of Flood Control Operations and Procedures

I. PURPOSE

The purpose of this investigation is to determine the specific causes of the higher than expected flood levels and damage experienced during the April 2007 flood event in southern and southeastern New Hampshire. This hazard risk analysis will assist the Federal Emergency Management Agency (FEMA) with the local, regional, state, and federal agencies dealing with existing and increased flood hazards. The analysis will be used to help the State of New Hampshire improve coordination among jurisdictions, management guidelines and operations to reduce the impact of flooding during recovery and mitigation efforts.

II. PERIOD OF PERFORMANCE

October 26, 2007 through March 31, 2008.

III. BACKGROUND

Heavy rainfall from a major low-pressure system produced up to 8 inches of rain in areas of New Hampshire from April 15-18, 2007. This caused extensive local flooding of streams and rivers. The highest flows ever recorded by the U.S. Geological Survey occurred at five rivers in southern New Hampshire, including the Oyster River near Durham, the Cocheco River near Rochester, the Isinglass River near Dover, the Piscataquog River near Goffstown, and the Contoocook River at Peterborough. In addition, peak stages on the Souhegan River, Soucook and Suncook River exceeded those measured during the May 2006 flood. The State of New Hampshire declared a state of emergency as a result of the flooding caused by this storm. As a result of the flooding, a presidential disaster declaration was made on April 27, 2007.

Flood levels and damage experienced during the April 2007 flood event were greater than expected based on indications during the event. There has been speculation that uncoordinated operations of dams resulted in peak flood flows being greater than may have occurred if flow control was managed differently between various jurisdictions. In addition, the existence of sedimentation and debris within particular stream channels may have caused water levels to rise above those expected for the rainfall event

IV. CONTRACT TASKS

(All third party coordination is the responsibility of the Project Monitor.)

AREA OF ANALYSIS:

The investigation will examine the causes and effects of the April 2007 Flood in southern and southeastern New Hampshire.

TASKS:

The contractor shall accomplish the work associated with the following items:

Item 1 – Investigation of Issues Associated With April 2007 Flooding:

- The causes and effects of the flood in the following river basins:
 - a. Piscataquog
 - b. Souhegan
 - c. Soucook
 - d. Suncook
 - e. Contoocook
 - f. Cocheco
 - g. Lamprey
 - h. Oyster
 - i. Salmon Falls
 - j. Isinglass
- The policies, programs and mechanisms for coordination of flood control operations and notification of flood-prone areas.
- The effects of dam management regimes and operations on flood conditions in the Souhegan, Piscataquog, and Suncook basins.
- The differences between the April 2007 flood and other recent flood events in these basins, including the May 2006 flood. For this determination, the investigation will focus on the way flow was controlled and on other specific hydrologic and hydraulic factors existing during the flooding event, including successes and failures related to emergency protection measures, such as sandbagging. One example of a hydrologic factor to be investigated might be runoff for a given location which has increased significantly due to changes in ground cover, variations in flow control, changes in detention storage, and/or decreased (or increased) channel capacity.
- The impact of the May 2006 avulsion on flood damages incurred along the Suncook River in the April 2007 flood.
- Emergency protection measures (e.g., sandbagging), and subsequent failure of the temporary protection.

Item 2 – Recommendations for Mitigating the Effects of Future Rainfall Events:

- Any remedial, restorative, protective or management measures that would help mitigate the effects of flooding.
- Any recommendations for improving coordination among jurisdictions, for revising management guidelines and for changing operations of flow control structures to reduce the impacts of flooding in New Hampshire.
- Any recommendations for additional studies needed to reduce the impacts of future floods in New Hampshire.

Item 3 – Public Involvement:

Throughout the investigation, communication will be maintained with the public and elected officials from flood impacted communities. The consultant shall provide documents to be posted to the State of New Hampshire's website. The New Hampshire Department of Environmental Services will provide assistance to the public involvement program by organizing and providing meeting space and advertising all meetings.

Other public involvement activities to be performed by the consultant include: responding to inquiries and comments from all parties; preparing and organizing for public meetings; and providing progress briefings to local, State, and Federal agency officials. It is anticipated that the consultant will need to prepare materials to respond to requests for project information from the public and media as well as prepare material for fact sheets.

The public involvement shall be the responsibility of the consultant and shall be described in detail in the consultant's proposal. Study information shall be made available to the public through the Internet. The contractor's proposal will specify an estimated number of hours and an estimated cost for expenses expected under this item.

Item 4 – Independent Review Panel:

The consultant will convene an Independent Review Panel or propose another process that ensures that the work and recommendations meet the highest level of professional independence and expertise. An Independent Review Panel will consider and make recommendations on the processes for accomplishing the tasks under this Scope of Work and will review and comment on the findings of both an Interim Report and a draft Final Report describing the results of the efforts under items one through three above. The findings of the Independent Review Panel will be included as a foreword to the Final Report of the effort

included under this Scope of Work. The contractor's proposal will specify the expected make-up of this panel, an estimated number of total hours to be spent by panel members (for members that will involve a cost to FEMA) and an estimated cost for direct expenses (mailings, copies, phone calls, etc.) expected under this item.

V. Reports/Deliverables:

All final reports / deliverables must be submitted to the Contracting Officer Technical Representative (COTR).

The consultant shall summarize the results of the investigation in a minimum of three reports.

- In an interim report, the contractor shall describe the initial findings of the factors contributing to the April 2007 flood. This information will be delivered to the Independent Review Panel in both paper (two copies) and electronic format.
- In a draft final report, the consultant shall document the data collected and methods used, and shall include a summary of conclusions and actions necessary by the stakeholders involved. The consultant shall provide one paper copy of the draft final report, as well as an electronic copy of the draft final report and all supporting data, to the Independent Review Panel on a DVD-ROM. A duplicate set of deliverables provided to the Independent Review Panel will also be provided to the FEMA Contracting Officer's Technical Representative.
- In a final report, consisting of a revised draft final report after review by the Independent Review Panel, the consultant shall document the data collected and methods used, and shall include a summary of conclusions and actions necessary by the stakeholders involved. The consultant shall provide one paper copy of the final report, as well as an electronic copy of the final report and all supporting data, to the FEMA Contracting Officer's Technical Representative.
- The contractor will include in the contractor's cost estimate that an addition five copies of all (interim, draft final and final) paper reports and DVD-ROMs will be delivered to other parties as requested.

Report/Deliverable	Quantity	Date of Delivery
Deliverables as noted in Section IV above	As noted above	As noted above
Technical Work Complete		Two months prior to POP Complete Date
Close out Complete		POP Date

NOTE: Period of Performance (POP) extensions will be approved on an individual basis. Justification of a POP extension will be required. The justification will include, but not be limited to; reason for the extension, impact on the deliverable schedule, impact on cost and impact on implementation. A delay by the Contractor is not justification for a POP extension. All extensions must be requested by the Project Monitor (PM) not later than 60 days prior to the Technical Work Complete date.

VI. Coordination:

COTR:	Shabbar Saifee, (202) 646-3142
Project Monitor:	David Knowles, (603) 430-6570, Cell (617) 894-7012
Technical Monitor:	Shabbar Saifee, (202) 646-3142
NH Representative:	James Gallagher, (603) 271-1961, Cell (603) 419-9206