

## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

- INT.1 Purpose and Scope of Document**
- INT.2 Organization of Document**
- INT.3 General Performance Requirements**
- INT.4 Document Control and Maintenance Plan**
- INT.5 Overview of Flood Hazard Mapping Program**
- INT.6 Overview of Flood Hazard Mapping Products**
- INT.7 Overview of Flood Hazard Mapping Processes**
- INT.8 Overview of Mapping Formats**
- INT.9 Overview of Mapping Partners**
- INT.10 Guidelines for Mapping Partners in Perspective**

### **VOLUME 1 FLOOD STUDIES AND MAPPING**

- 1.1 Overview of the Flood Map Project Process**
- 1.2 Mapping Needs Assessment**
- 1.3 Project Scoping**
- 1.4 Data Development/Report and Map Production**
- 1.5 Preliminary/Post-Preliminary Processing**
- 1.6 References**

### **VOLUME 2 MAP REVISIONS AND AMENDMENTS**

- 2.1 Physical Map Revisions**
- 2.2 Coastal Barrier Resources System Revisions**
- 2.3 Notice-to-User Revisions**
- 2.4 Letter of Map Change Processing**
- 2.5 Revalidation Letters**
- 2.6 Corporate Limit Changes**
- 2.7 Program Implementation**
- 2.8 Fee-Collection System Responsibilities**
- 2.9 Special Conversions**
- 2.10 References**

### **VOLUME 3 PROGRAM SUPPORT**

- 3.1 Introduction
- 3.2 Program Coordination and Reporting
- 3.3 Library and Archive Support
- 3.4 Procedure, Guidance, and Policy Development and Implementation Assistance
- 3.5 Technical Assistance
- 3.6 Map Assistance Center Support
- 3.7 Flood Hazard Mapping Web Site Support
- 3.8 Mapping Needs Assessment Process Support
- 3.9 Special Correspondence
- 3.10 Letters of Determination Review
- 3.11 Engineering Study Data Package Facility Support
- 3.12 Map Service Center Support
- 3.13 Training Support
- 3.14 Post-Flood Hazard Verification/Recovery Tools
- 3.15 Hazard Identification and Mapping Activities
- 3.16 Risk Assessment Activities
- 3.17 Fee-Charge System Maintenance Activities
- 3.18 Cooperating Technical Partners Program Support Activities
- 3.19 Support for Other Map Modernization Objectives
- 3.20 Q3 Flood Data Maintenance Activities
- 3.21 Conversion/Compliance Process Support
- 3.22 Other Program Support
- 3.23 References

## **APPENDIX A GUIDANCE FOR TOPOGRAPHIC DATA DEVELOPMENT**

- A.1 Introduction
- A.2 Industry Geospatial Standards
- A.3 Accuracy Guidelines
- A.4 Data Requirements
- A.5 Ground Control
- A.6 Ground Surveys
- A.7 Photogrammetric Surveys
- A.8 Airborne Light Detection and Ranging (LIDAR) Surveys
- A.9 References

## **APPENDIX B CONVERTING TO THE NORTH AMERICAN VERTICAL DATUM OF 1988**

- B.1 Vertical Datums

All policy and standards in this document have been superseded by the FEMA Policy for Flood Risk Analysis and Mapping. However, the document contains useful guidance to support implementation of the new standards.22

- B.2 Data Collection**
- B.3 Conversion Criteria**
- B.4 Conversion of Unrevised Flood Elevations**
- B.5 Conversion From NAVD88 to NGVD29**
- B.6 Flood Insurance Study Report Paragraphs**

## **APPENDIX C GUIDANCE FOR RIVERINE FLOODING ANALYSES AND MAPPING**

- C.1 Introduction**
- C.2 Hydrologic Analyses**
- C.3 Hydraulic Analyses**
- C.4 Floodway**
- C.5 Hydraulic and Floodway Review**
- C.6 Floodplain Boundaries**
- C.7 Future-Conditions Flood Mapping**
- C.8 Hydrologic and Hydraulic Analyses of Lake Levels for Closed Basins**
- C.9 References**

## **APPENDIX D GUIDANCE FOR COASTAL FLOODING ANALYSES AND MAPPING**

- D.1 General Guidance**
- D.2 Wave Elevation Determination and V Zone Mapping: Gulf of Mexico and Atlantic Ocean**
- D.3 Wave Elevation Determination and V Zone Mapping: Great Lakes**
- D.4 Wave Elevation Determination and V Zone Mapping: Pacific Ocean**
- D.5 Erosion Hazard Study, Identification, and Mapping**
- D.6 References**

## **APPENDIX E GUIDANCE FOR SHALLOW FLOODING ANALYSES AND MAPPING**

- E.1 What Is Shallow Flooding?**
- E.2 Study Scope**
- E.3 Applicable Flood Insurance Risk Zones**
- E.4 Shallow Flooding Classifications and Descriptions**
- E.5 Study Procedures**

## **APPENDIX F GUIDANCE FOR ICE-JAM ANALYSES AND MAPPING**

- F.1 Introduction**
- F.2 Ice Jam Types**
- F.3 Reconnaissance**
- F.4 Analysis Approaches**

- F.5 Presentation of Results
- F.6 References

## **APPENDIX G GUIDANCE FOR ALLUVIAL FAN FLOODING ANALYSES AND MAPPING**

- G.1 Introduction
- G.2 Analysis Approach
- G.3 Additional Information on Sediment Transport
- G.4 References

## **APPENDIX H GUIDANCE FOR MAPPING OF AREAS PROTECTED BY LEVEE SYSTEMS**

- H.1 Levee System Component Terminology
- H.2 Levee System Evaluation Criteria
- H.3 Crediting Criteria for Flood Maps
- H.4 Review Responsibilities
- H.5 Floodplain Mapping and Flood Profiles
- H.6 Flood Control Restoration Zones

## **APPENDIX I DISCOVERY**

- I.1 Introduction
- I.2 Timing and Geographical Extent of Discovery
- I.3 Scalability
- I.4 Discovery Process Overview
- I.5 Watershed Stakeholder Coordination
- I.6 Data Analysis
- I.7 Discovery Meeting
- I.8 Finalizing Discovery
- I.9 Project Determination
- I.10 Post-Discovery Meeting Coordination
- I.11 Scope Refinement
- I.12 Final Outputs

## **APPENDIX J FORMAT AND SPECIFICATIONS FOR FLOOD INSURANCE STUDY REPORTS**

- J.1 Submittal Content for Flood Insurance Study Reports
- J.2 Preparation of Flood Insurance Study Reports
- J.3 Volume Printing
- J.4 Future-Conditions Flood Hazard Information
- J.5 Preliminary and Final Deliverables

- J.6 Sample Flood Insurance Study Report
- J.7 Figures

## **APPENDIX K FORMAT AND STANDARDS FOR FLOOD INSURANCE RATE MAPS**

- K.1 Mapping Production Methods
- K.2 Map Frames
- K.3 Map Index
- K.4 Map Body
- K.5 Map Legend
- K.6 Notes to Users
- K.7 Scale Box and Panel Locator Diagram
- K.8 FIRM Title Block
- K.9 Preliminary Flood Insurance Rate Map Deliverables
- K.10 Map Service Center Deliverables
- K.11 National Flood Hazard Layer

## **APPENDIX L GUIDANCE FOR PREPARING DIGITAL DATA AND FLOOD INSURANCE RATE MAP DATABASES**

- L.1 Flood Insurance Rate Map Database
- L.2 Database Design Decisions
- L.3 Preparation of Draft Digital Data
- L.4 Preparation of Preliminary and Final Flood Insurance Rate Map Databases
- L.5 Database Table Structure Requirements for Draft Digital Data
- L.6 Federal Emergency Management Agency Digital Mapping Information Checklist
- L.7 Metadata Example for Draft Digital Data
- L.8 Database Table Structure Requirements for Preliminary and Final Flood Insurance Rate Map Databases
- L.9 Metadata Example for Preliminary and Final Flood Insurance Rate Map Databases
- L.10 Domain Tables

## **APPENDIX M GUIDANCE FOR PREPARING AND MAINTAINING TECHNICAL AND ADMINISTRATIVE SUPPORT**

- M.1 Background
- M.2 Preparation and Submittal Requirements
- M.3 Processing and Maintenance Requirements

## **GLOSSARY OF TERMS**

## **LIST OF ACRONYMS AND ABBREVIATIONS**