

Map MODERNIZATION

Federal Emergency Management Agency



FEMA's Flood Hazard Mapping Program

Guidelines and Specifications *for* Flood Hazard Mapping Partners

Table of Contents



FEDERAL EMERGENCY MANAGEMENT AGENCY

www.fema.gov/mit/tsd/dl_cgs.htm

FINAL
February 2002

Guidelines and Specifications for Flood Hazard Mapping Partners

Source

INTRODUCTION

INT.1	Purpose and Scope of Document	FMPCC G&S Introduction
INT.2	Organization of Document	
INT.3	General Performance Requirements	FMPCC G&S Introduction
INT.4	Planned Updates	
INT.5	Overview of Flood Hazard Mapping Program	<i>A Cost-Effective Plan for Flood Studies Maintenance and Modernizing FEMA's Flood Hazard Mapping Program: A Progress Report</i>
INT.6	Overview of Flood Hazard Mapping Products	FMPCC G&S and <i>A Cost-Effective Plan for Flood Studies Maintenance</i>
INT.7	Overview of Flood Hazard Mapping Processes	<i>A Cost-Effective Plan for Flood Studies Maintenance</i>
INT.8	Overview of Mapping Formats	<i>A Cost-Effective Plan for Flood Studies Maintenance and FMPCC G&S</i>
INT.9	Overview of Mapping Partners	<i>Modernizing FEMA's Flood Hazard Mapping Program: A Progress Report</i>
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	Scoping Manual Jan 2001, FEMA 37 Project scoping plus new material
1.4	Data Development/Report and Map Production	FEMA 37, FMPCC G&S, and current Optimized Study Process practice
1.5	Preliminary/Post-Preliminary Processing	Portions from FEMA 37 and FMPCCG&S
1.6	References	

VOLUME 2 MAP REVISIONS AND AMENDMENTS

2.1	Physical Map Revisions	FMPCC G&S
2.2	Coastal Barrier Resources System Revisions	"
2.3	Notice-to-User Revisions	Formally documented for inclusion into these G&S
2.4	Letter of Map Change Processing	FMPCC G&S and Procedure Memo 22
2.5	Revalidation Letters	FMPCC G&S
2.6	Corporate Limit Changes	"
2.7	Program Implementation	"
2.8	Fee-Collection System Responsibilities	"
2.9	Special Conversion Processing Procedures	"
2.10	References	

VOLUME 3 PROGRAM SUPPORT

3.1	Introduction	
3.2	Program Coordination and Reporting	Portion from FMPCC G&S
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 Website Maintenance and Enhancement Support	FHM Website Protocols
3.8	Support for Mapping Needs Assessment Program	NFIRA, Section 575
3.9	Special Correspondence	Portion from FMPCC G&S
3.10	Letters of Determination Review	"
3.11	Engineering Study Data Package Facility Support	"
3.12	Map Service Center Support and Coordination	"
3.13	Training Support	
3.14	Post-Flood Hazard Verification/Recovery Tools	
3.15	Hazard Identification and Mapping Activities	Portion from FMPCC G&S
3.16	Risk Assessment Activities	"
3.17	Fee-Charge System Maintenance	Fee Charge System Procedures s for Part 72 and Fee Charge Systems Procedures for External Data Requests
3.18	Cooperating Technical Partners Initiative Support	
3.19	Support for Other Map Modernization Objectives	<i>Modernizing FEMA's Flood Hazard Mapping Program, A Progress Report</i>
3.20	Q3 Flood Data Maintenance	Portion from FMPCC G&S
3.21	Support for Conversion/Compliance Process	<i>FEMA Document Control Procedures Manual</i>
3.22	Other Program Support	
3.23	References	

APPENDIX A GUIDANCE FOR AERIAL MAPPING AND SURVEYING

A.1	Introduction	FEMA 37, Appendix 4A. Aerial Mapping and Surveying Spec's and 4B
A.2	Industry Geospatial Standards	NSSDA (FGDC 195f) and NGS-5f (NOAA, 1997)
A.3	Accuracy Guidelines	FEMA 37 Appx 4 updated to NSSDA
A.4	Data Requirements	FEMA 37 rewritten to NDEP recommendations
A.5	Ground Control	FEMA 37 rewritten FGDC network accurately

Guidelines and Specifications for Flood Hazard Mapping Partners

Source

A.6	Ground Surveys	FEMA 37 rewritten to NGS-58
A.7	Photogrammetric Surveys	FEMA 37 Appx 4
A.8	Airborne Light Detection and Ranging Surveys	FEMA 37 Appx 4B rewritten to NDEP recommendations
A.9	References	Updated from FEMA 37

APPENDIX B CONVERTING TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

B.1	Background	FEMA 37; FMPCC G&S App. D with updated information
B.2	Data Collection	"
B.3	Conversion Criteria	"
B.4	Conversion of Unrevised Flood Elevations	"
B.5	Conversion from NAVD88 to NGVD29	"
B.6	Paragraphs for Flood Insurance Study Report	"

APPENDIX C GUIDANCE FOR RIVERINE FLOODING ANALYSES

C.1	Detailed Hydrologic Analysis	FEMA 37, current policies and practices
C.2	Hydrologic Review	White Paper on Hydrology Review
C.3	Detailed Hydraulic Analyses	FEMA 37, current policies and practices
C.4	Approximate Analyses	FEMA 37, FEMA 265, NC CTP Issue Paper #11 (<i>Hydraulic Analyses of Structures in Zone A Areas</i>)
C.5	Hydraulic Review	White Paper on Hydraulic Review
C.6	Floodplain Mapping	FEMA 37, FMPCC G&S, and current practice
C.7	Hydrologic and Hydraulic Analyses of Lake Levels for Closed Basins	Current policies and practices
C.8	Future-Conditions Flood Mapping	Final Rule Published in <i>Federal Register</i> on 11-27-01
C.9	References	

APPENDIX D GUIDANCE FOR COASTAL FLOODING ANALYSES AND MAPPING

D.1	General Guidance	FEMA 37 - Appendix 1
D.2	Wave Elevation Determination and V Zone Mapping: Gulf of Mexico and Atlantic Ocean	Guidelines and Specifications for Wave Elevation Determination and V-Zone Mapping (Final Draft March 1995)
D.3	Wave Elevation Determination and V Zone Mapping: Great Lakes	Guidelines and Specifications for Wave Elevation Determination and V-Zone Mapping - Great Lakes (Draft August 1996)
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	Introduction	FEMA 37, Appendix 2
E.2	Study Scope	"
E.3	Applicable Flood Hazard Zones	"
E.4	Shallow Flooding Classifications and Descriptions	"
E.5	Study Procedures	"

APPENDIX F GUIDANCE FOR ICE-JAM ANALYSES AND MAPPING

F.1	Introduction	FMPCC G&S, Appendix I and FEMA 37, Appendix 3
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	NRC 1996 Report on Alluvial Fan Flooding, Alluvial Fan Guidelines
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	Introduction	FEMA 37; Section 65.10 of NFIP Regulations
H.2	Levee System Components and Terminology	"
H.3	Levee System Evaluation Criteria	"
H.4	Criteria for Crediting Levee Systems on FIRMs	"
H.5	Review Responsibilities	FMPCC G&S
H.6	Floodplain Mapping and Flood Profiles	FEMA 37 and Section 65.10 of NFIP Regulations
H.7	Flood Control Restoration Zones	Section 65.14 of NFIP Regulations

APPENDIX I SCOPING GUIDANCE AND TOOLS

Guidelines and Specifications for Flood Hazard Mapping Partners

		Source
I.1	Pre-Scoping Meeting Activities	Scoping Manual Jan 2001
I.2	Scoping Meeting Activities	"
I.3	Post-Scoping Meeting Activities	"

APPENDIX J FORMAT AND SPECIFICATIONS FOR FLOOD INSURANCE STUDY REPORTS

J.1	Submittal Content for Flood Insurance Study Reports	FEMA 37, Chapter 9 and FMPCC G&S, Appendix C
J.2	Preparation of Flood Insurance Study Reports	"
J.3	Volume Printing	"
J.4	Sample Flood Insurance Study Report	"

APPENDIX K SPECIFICATIONS AND FORMAT FOR FLOOD INSURANCE RATE MAPS

K.1	Mapping Methods and Formats	FMPCC G&S and Procedure Memos 3, 4, 11, 14, 15, 22, and 25
K.2	Map Frames	"
K.3	Map Index	"
K.4	Map Body	"
K.5	Map Legend	"
K.6	Map Title Block	"
K.7	Map Locator Diagram	"
K.8	Notes to Users	"
K.8	Preliminary Flood Insurance Rate Map Deliverables	"
K.9	Deliverables to Map Service Center	"

APPENDIX L GUIDANCE FOR PREPARING DIGITAL FIRM DATABASE

L.1	Digital Flood Insurance Rate Map Database Overview	Map Modernization DFIRM Database Work Group, Draft DFIRM Specifications, FEMA 37 Appendix 7
L.2	Preparation of Draft Digital Data	"
L.3	Preparation of Preliminary and Final Digital Flood Insurance Rate Map Databases	"
L.4	Database Table Structure Requirements for Draft Digital Data	"
L.5	Federal Emergency Management Agency Digital Mapping Information Checklist	"
L.6	Metadata Example for Draft Digital Data	"
L.7	Database Table Structure Requirements for Preliminary and Final Digital Flood Insurance Rate Map Databases	"
L.8	Metadata Example for Preliminary and Final Digital Flood Insurance Rate Map Databases	"

APPENDIX M GUIDANCE FOR PREPARING AND MAINTAINING TECHNICAL AND ADMINISTRATIVE SUPPORT DATA

M.1	Background	FEMA 37, FMPCCG&S, <i>Guide for Preparing Technical Support Data Notebook</i>
M.2	Preparation and Submittal Requirements	"
M.3	Processing and Maintenance Requirements	"

GLOSSARY OF FLOOD HAZARD MAPPING TERMS

LIST OF ACRONYMS AND ABBREVIATIONS