

Risk MAP

# MSC Deliverables Guide

Version 3.0

June 2010

## Document History

### Document Location

Location
Right-click this field and choose Update Field to show file path

### Revision History

Version Number	Version Date	Summary of Changes	Team/Author
0.1	February 2006		M. Laudier
1.0	February 2006	Format & Review	A. Goff
1.1	March 2006	MSC Review	N. Sullins
1.2	October 2006	Additions from MSC	N. Sullins
1.3	November 2006	Content Review	J. Schule
1.4	April 2007	Content Review and final approval	N. Sullins
1.5	December 2008	Content Revisions	J. McCarty
2.0	October 2009	Content Revisions	C. Orndorff
3.0	June 2010	Content Revisions to reflect PM54	C. Orndorff

### Approvals

This document requires the approval of the following persons:

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### Client Distribution

Name	Title/Organization	Location

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# 1. Introduction

Information on the final deliverables and paperwork for the Flood Insurance Study (FIS) report and the Flood Insurance Rate Map (FIRM) are presented in the *Guidelines and Specifications for Flood Hazard Mapping Partners*, Volume 1, Section 1.5. The purpose of this document is to provide additional guidance to mapping partners for consistency of the FIS report and FIRM final deliverables that are sent to the Federal Emergency Management Agency (FEMA) Map Service Center (MSC) for final product distribution to FEMA's customers and stakeholders. The deliverable materials must be submitted by the mapping partner to the Production and Technical Services (PTS) contractor for review prior to submittal to the MSC. The final submittal is due to the MSC no later than two weeks after the Letter of Final Determination (LFD) date. More information on the required submittal times and specific quality control requirements can be found in Procedure Memorandum 42.

# 2. MSC Deliverable Materials

The required documents that make up the final deliverable materials package to the MSC include the following and should be submitted in digital format as indicated:

- Transmittal Form (Microsoft Word) – A listing of items from the mapping contractor detailing the items being submitted to the MSC.
- Digital Flood Insurance Rate Map (DFIRM) Database – Must conform to the requirements of *Appendix L* of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (April 2003 and as amended).
- Orthophotos (if existing or required) – Must conform to the requirements of *Appendix L* of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (April 2003 and as amended).
- FIRM Scans (PNG or TIF format) – Must conform to the requirements of *Appendix L* of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (April 2003 and as amended).
- World Files (PGW or TFW format) – Must conform to the requirements of *Appendix L* of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (April 2003 and as amended).
- Digital Copy of the FIS Report (PDF format) – Must conform to the requirements of *Appendix J* of the *Guidelines and Specifications for Flood Hazard Mapping Partners* (April 2003 and as amended).
- Transmittal to Community Chief Executive Officer (CEO) (Microsoft Word) – One letter must accompany the material for each community. For FIRMs prepared in the countywide format, one letter shall be prepared for each community. The transmittal letters must conform to the requirements of *Appendix A* of the *FEMA Document Control Procedures Manual* (September 2006 or as amended).
- Community Map Action List (CMAL) (Microsoft Excel) – One copy of the CMAL must accompany each submission to the MSC; however, several communities may be shown on one CMAL, provided that the FIRMs have the same effective date.

- Inventory Worksheet for Each Community in the Mapping (see Attachment 1) (Microsoft Excel)
  - One worksheet shall be prepared for each community (including FIRMs prepared in Countywide Format).

These materials must be uploaded through the Mapping Information Platform (MIP) during the “Submit MSC Deliverables” task. The submission must contain all required documents. All materials should be reviewed by the responsible mapping partner prior to submission to the PTS contractor.

After the PTS contractor has completed its review, the mapping partner is required to make all corrections and resubmit revised materials to the PTS contractor for a re-check. This review cycle must be completed and the entire package must be at the MSC no more than two weeks after the LFD date.

### 3. Preparation of the MSC Deliverables Package

The PTS contractors must complete and submit the transmittal items listed in the following subsections. These items should be submitted in digital format along with the FIRM scans, FIS report, and DFIRM Databases to the MSC.

#### 3.1. Transmittal Form

The transmittal form is designed as a checklist to ensure that all contents that comprise the MSC Deliverables Package are included with the submittal to the MSC. See *Appendix A* for a sample.

#### 3.2. Transmittal Letter to Community

A transmittal letter to the community CEO (179 Letter) is sent by the MSC to each community along with the final mapping products distributed by the MSC. Each mapping partner is responsible for preparing these letters and the PTS contractor is responsible for validating the content of these letters. Refer to *Appendix A* of the *Document Control Procedures Manual* for the current letter templates.

For the MSC Deliverables Package there should be one letter for each community that lies or appears on a printed map panel of the flood insurance study. Each letter should be provided in Microsoft Word 2003 format. The letter must also include: the current CEO name and address (the address should not be a Post Office Box), the six-digit community identification number and the effective date.

#### 3.3. Inventory Worksheet

The Inventory Worksheet is used by the MSC to accurately update the MSC inventory and management information systems. Every community, including the countywide or all jurisdictions mapping number, if applicable, and mapped non-floodprone and/or non-participating communities, will need a separate Inventory Worksheet. The Inventory Worksheet should be completed in its entirety and provided in Microsoft Excel 2003 format. The standard Inventory Worksheet and a sample worksheet are provided in *Appendix B*. **The formatting of the standard Inventory Worksheet template must not be modified or otherwise altered, as it will delay the MSC’s review and acceptance of the submitted package.** The items below must be completed on the worksheet:

- **TWO COLOR (orthophoto base) MAP**  
Indicate yes or no.
- **EFFECTIVE DATE**  
Enter the effective date of the FIRM.
- **COMMUNITY NUMBER**  
Enter the six-digit community identification number or the countywide/all jurisdictions map number.
- **STATE AND COUNTY NUMBER (FIPS)**  
Enter the Federal Information Processing Standard (FIPS) code for the state and county in which the community is located. The FIPS can be obtained directly from the Web site, [www.itl.nist.gov/fipspubs/co-codes/states.txt](http://www.itl.nist.gov/fipspubs/co-codes/states.txt). If the community is located in multiple counties, separate each state and county number with a comma.
- **COMMUNITY NAME**  
Enter the community name, including the “City of,” “Town of,” etc., designation. If the community is the unincorporated areas of a county, enter the county name here followed by an asterisk. If countywide mapping, list the county name followed by, “(Incorporated and Unincorporated Areas).” If all jurisdiction mapping, list the county name followed by, “(All Jurisdictions).”
- **COUNTY NAME**  
Enter the name(s) of the county(ies) in which the community is located. If the community is located in multiple counties, separate each county name with a comma.
- **PRINT TYPE**  
Identify whether the mapping is new or a revision.
- **PTS**  
Provide the name of the PTS contractor responsible for submitting the study to the MSC.
- **PROGRAM STATUS**  
Identify the current program status of the community.
- **MAPPING PARTNER**  
Provide the name of the mapping partner responsible for producing the study.
- **COUNTY CODE**  
Enter the three-digit FIPS code for the county in which the community is located. If the community is located in multiple counties, separate each county name with a comma.
- **STATE/REGION**  
Enter the two-letter state abbreviation followed by the two-digit FEMA Region number (e.g., Texas would be shown as “TX/06”).
- **NEW/REVISED FIRMS**  
Enter information below:

- In the “PANEL & SUFFIX” column, list all FIRM panels, beginning with the Map Index for the community.
  - For the Map Index as “IND0” and Index suffix as “IND0<suffix>.”
  - For each FIRM panel, provide the ten-digit/character panel number and suffix as they appear on the individual panel.
- Leave the “QTY TO TRANSFER” column blank; the MSC staff will complete these columns.
- **STUDY/FLOODWAYS**

Enter information below:

  - In the “PANEL & SUFFIX” column, for each FIS report provide the ten-digit/character number and suffix as they appear on the individual volume.
  - If Flood Boundary and Floodway Maps (FBFMs) are revised, include the ten-digit/character panel number and suffix as they appear on the individual panel, beginning with the FBFM Index, in the “PANEL & SUFFIX” column after the FIS report(s) is/are listed.
  - Leave the “QTY TO TRANSFER” column blank; the MSC staff will complete these columns.
- **OBSOLETE**

List the ten-digit/character number and suffix for each Flood Hazard Boundary Map (FHBM), FIRM, FBFM and/or FIS report being superseded by the new or revised products.

### 3.4. Community Map Action List (CMAL)

The mapping partner must include the information below on the CMAL, which is presented in *Appendix C* of this document. For a more detailed list of the CMAL codes, see *Appendix E*. When completing the CMAL, the codes used should reflect the information pertaining to the new/revised mapping. Most of the required information can be found on the FIRM and FBFM Indexes and on the FIRM panels. Each CMAL should list all of the communities within the county, including the non-floodprone (both mapped and non-mapped) communities. The CMAL should be completed in its entirety and in Microsoft Excel 2003 format. The following information should be provided in the CMAL:

- **DATE**

In the upper right-hand corner of the form, enter the date the CMAL is sent to MSC.
- **REVIEW CONTRACTOR**

Enter the name of the PTS contractor that reviewed the CMAL.
- **EFFECTIVE DATE**

Enter the date the map(s) and report will become effective. This date is shown on the cover of the FIS report and the title block of the FIRM Index and map panels.

For each community, identify the following information on a single line:

- **STATE**  
Enter the two-letter state abbreviation on the first line.
- **COMMUNITY NUMBER**  
Enter the six-digit community identification number.
- **COMMUNITY NAME (COUNTY NAME)**  
For community-based studies, enter the community name, including the “Town of,” “City of,” etc. on the first line. For countywide studies, enter the county name on the first line and, if applicable, enter Unincorporated Areas or All Jurisdictions, in parentheses, on the second line.
- **PRINTED PANEL(S) AND SUFFIX**  
List the four-digit panel number and the suffix for all of the FIRM panels that are being printed in ascending numerical order using the least number of lines as possible (see example in *Appendix C*). The FIRM Index should be included first. For single-panel Indexes, the FIRM Index should be shown as IND0, followed by the suffix with no space. For multiple-panel Indexes, the FIRM Index should be shown as IND1, IND2, etc., followed by the suffix with no space.
- **INLAND/COASTAL**  
Enter “I” for inland, on the first line if the 60.3 code shown in the LFD is b, c, or d. Enter “C”, for coastal, if the 60.3 code in the LFD is “e”. Enter “IC”, for inland and coastal, if the 60.3 code shown in the LFD is b, c, or d, and e.
- **HAZARD**  
Enter “NF” if the community is non-floodprone (C or X (unshaded) only). Enter “MF” if the community is minimally floodprone. Minimally floodprone has been defined as having only unnumbered/lettered Special Flood Hazard Areas (SFHAs) (A and/or V only). Enter “FL” for floodprone communities.  
  
Note: These are codes used for FEMA computer systems. They do not represent or supersede general mapping terms utilized by FEMA in the *Guidelines and Specifications for Flood Hazard Mapping Partners*.
- **60.3 CODE**  
Enter the one- or two-letter code (i.e., b, c, d, e) shown in the LFD on the first line. Non-floodprone communities should reflect an “a” in this column.
- **PROGRAM STATUS**  
On the first line, enter “1” for the emergency program, “2” for regular program, “3” for non-participating communities with no map, or “4” for non-participating communities with a map. This column should reflect the community’s current status in the National Flood Insurance Program (NFIP) before the map becomes effective.
- **MAP STATUS, FHBM**  
Enter “5” on the first line if the FHBM was superseded by a FIRM. Enter “1” if an FHBM was not published. Enter “4” if the FHBM was rescinded.

- **MAP STATUS, FIRM**

Enter one of the following codes on the first line as appropriate:

“1” if the FIRM has never been produced for the community.

“2” if the FIRM is becoming effective for the first time.

“3” if an existing FIRM is being revised.

“4” if the FIRM was rescinded.

“5” if the community is participating in the Regular Phase of the NFIP as non-floodprone and no FIRM was printed.

“6” if the community is participating in the Regular Phase of the NFIP as minimally floodprone and a FIRM showing Zones A and C/X was published.

“7” if the community is participating in the Regular Phase of the NFIP as minimally floodprone and the FHBM was converted to a FIRM by letter.

“8” if the community is all Zone D and has no published FIRM.

“9” if the community is all Zone D and a FIRM was printed.

“10” if the community is all Zone C/X and a FIRM was printed.

- **INITIAL MAP DATE, FHBM**

Enter the initial identification date shown on the FIRM panel. This date can also be obtained from the Flood Map Status Information Service (FMSIS), Community Information System (CIS) or the MIP.

- **INITIAL MAP DATE, FIRM**

Enter the effective date shown on the FIRM panel(s).

- **FLOODWAY PANELS**

Enter “N/A” on the first line if a separate FBFM has not been prepared. If an FBFM has been prepared, list the four-digit panel number for all of the FBFM panels that are being printed for the community in ascending numerical order, beginning with the FBFM Index on the first line. For single-panel Indexes, the FBFM Index should be shown as “FND0.” For multi-panel Indexes, the FBFM Indexes should be shown as, “FND1, FDN2, etc.”

- **LOCATION OF MAP REPOSITORY**

Enter the address of the Community Map Repository. This information can be obtained from the community.

- **COMMENTS**

Provide any comments that may be useful to the MSC in processing this submittal. The following are notes that should be added when appropriate:

- Prepared in countywide format for the first time.
- Only panel printed.

- Change to map initiatives format from standard format.
- **PAGE \_\_\_\_ of \_\_\_\_**  
Show “Page 1 of 1” for all single page forms. Number multiple page forms consecutively (e.g., Page 1 of 3 for the first page, Page 2 of 3 for the second page, Page 3 of 3 for the third page of a three-page form).

## 4. Preparation of the FIS Report

The designated mapping partner must prepare a digital copy of the FIS report for submission to the MSC.

### 4.1. Digital FIS Report

The FIS report must be submitted in digital format as an unsecure PDF file, with a resolution of 400 dpi. The FIS report must conform to the requirements of *Appendix J* of the current *Guidelines and Specifications for Flood Hazard Mapping Partners*. There must be one PDF file per FIS volume that is bookmarked at each of the major headings shown within the table of contents (minimum), at the start of each flooding source’s profile (subject to cost and project officer approval).

## 5. Preparation of the FIRM

The mapping partner must prepare a digital copy of each FIRM panel, including the Map Index, for submission to the MSC.

### 5.1. FIRM Scans

The FIRM Scans are digital raster images of the FIRM panels which must be submitted to the MSC in either PNG or TIF formats. The format type is dependent upon whether or not the map includes a digital orthophoto base map. The FIRM Scans must be georeferenced and conform to the requirements of *Appendix L* of the current *Guidelines and Specifications for Flood Hazard Mapping Partners*. Additional details concerning the submittal of the FIRM Scans is provided in Section 6 of this document.

## 6. Preparation of the Digital Data for Delivery

### 6.1. DFIRM Databases and Other Digital Materials

The mapping partner must meet the FEMA specifications presented below for submission of the digital data to the MSC. Please see FEMA Procedure Memorandum 42 for the current quality control requirements in the DFIRM production process. The following is provided as a basic overview of the DFIRM naming convention. Consult *Appendix E* of this guide for specific details and the full-text version of the DFIRM naming conventions document.

Each submittal will contain the same basic components that are described below:

There will be a single directory that contains all of the subsequent sub-directories. The name of this directory is designed to identify the study and whether this data represents an initial DFIRM database or if this data revises an existing DFIRM database. The directory for an initial DFIRM

database will be named <CID or County FIPS>\_DFIRM while a submission that replaces a current DFIRM database will be named <CID or County FIPS>\_<Alpha>\_DFIRM. Each subsequent revision for which there is a new effective date requires the <Alpha> character to be advanced.

Examples:

120234\_DFIRM – a community DFIRM

12345C\_DFIRM – a county DFIRM

120234\_A\_DFIRM – a community DFIRM that revises a current DFIRM database

12345C\_A\_DFIRM – a county DFIRM that revises a current DFIRM database

The geographic information system (GIS) information that represents the DFIRM Databases is contained within three separate directories according to their file format and whether the information is part of the Standard DFIRM database or the Enhanced DFIRM database:

**ArcExport:** Directory contains all standard DFIRM database files in ESRI Arc Interchange format (E00).

**ArcShape:** Directory contains all standard DFIRM database files in ESRI Shapefile format (SHP).

**MapInfo:** Directory contains all standard DFIRM database files in MapInfo Data Interchange Format (MIF).

The metadata file should be named <ST\_FIPS><PCOMM>\_<EFF\_DATE>\_metadata.txt; where ST\_FIPS is the two-digit state FIPS code. PCOMM is the either the three-digit county FIPS code with a trailing C or the four-digit community number. EFF\_DATE is the effective date of the study in YYYYMMDD format and this file is to be stored in the Document directory. Note that the metadata filename for a revised submission also requires the \_<Alpha> addition to the filename.

Examples of the metadata file name:

24031C\_20031217\_metadata.txt – a countywide DFIRM

241234\_20031217\_metadata.txt – a community DFIRM

The PDF version of the FIS report should be named <ST\_FIPS><PCOMM><VOLUME NUMBER>.pdf and placed within the FIS directory.

The orthophotos directory will store any of the aerial images and any associated world files that were used to create the DFIRM (if applicable). This data should be the format that the orthophotos were provided to the FEMA mapping partner unless the appearance of any portion of the orthophotos shown on the DFIRM was modified by re-projection, re-sampling, etc.

The RFIRM directory contains the TIF and/or the PNG raster images of the FIRM panels, the Index, and their associated world files which should be created by following the naming conventions below.

Examples:

24031C0001A.tif	Vector base maps (i.e., black and white maps) – 400 DPI, 1 bit black and white, Group 4 TIFF
24031C0001A.png	Orthophoto base maps (i.e., two-color maps) – 400 DPI, 24 bit PNG
24031CIND0A.tif	Map Index – 400 DPI, 1 bit black and white, Group 4 TIFF

World files for the image files above:

24031C0001A.tfw  
24031C0001A.pgw  
24031CIND0A.tfw

## 6.2. Digital File Structure

The PTS contractors must provide the digital files organized in the file structure illustrated in Figure 1. Table 1 provides more details regarding folder content and the file naming conventions. Pay close attention to the directory names, as they are case sensitive.

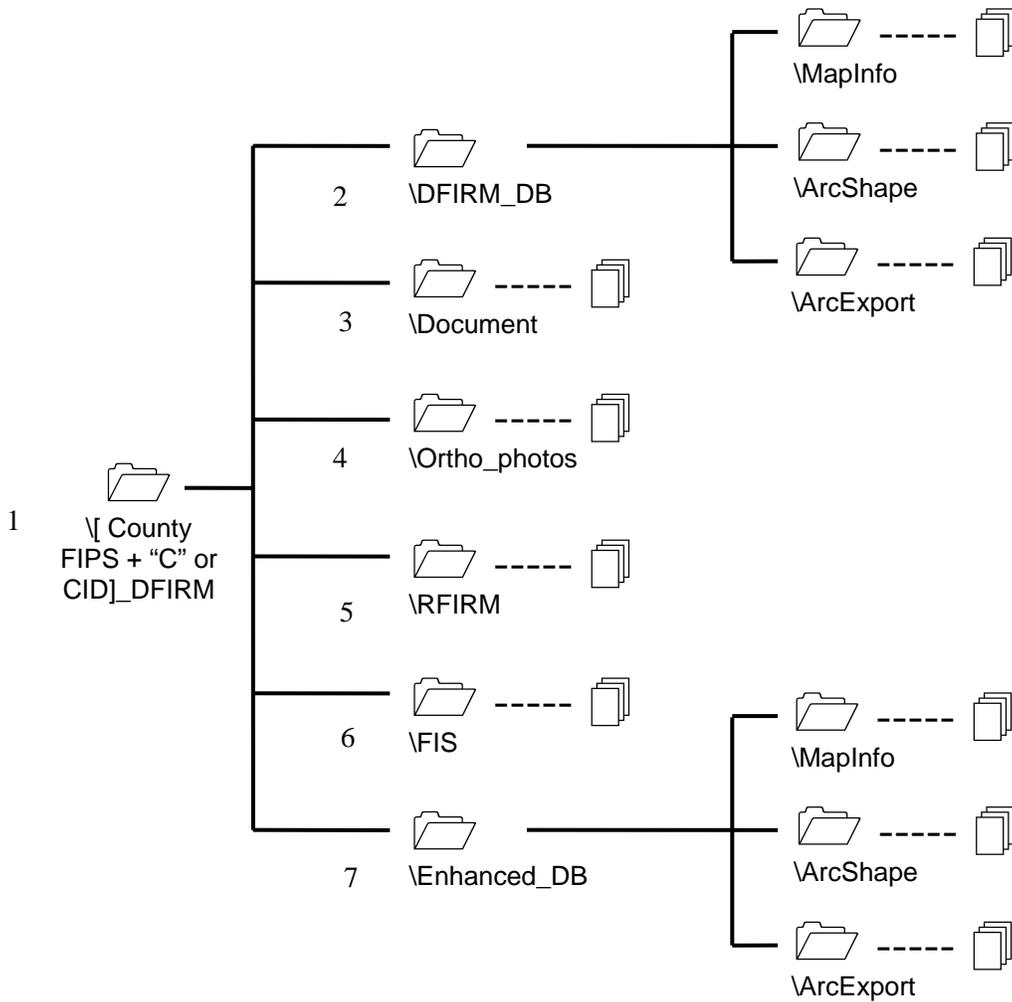


Figure 1. Final Deliverables Digital File Structure

**Table 1. Digital Folder Contents and File Naming Conventions**

Directory Name	Directory Contains	File Format	File/Folder Name Example	Diagram Reference
\[FIPS with trailing C]_DFIRM OR \[CID]_DFIRM	Six subdirectories, listed below		\12345C_DFIRM or \120234_DFIRM	①
\DFIRM_DB	Three subdirectories, each containing all standard DFIRM database files in differing formats: <ul style="list-style-type: none"> <li>• \MapInfo</li> <li>• \ArcShape</li> <li>• \ArcExport</li> </ul>	\MapInfo: MapInfo MIF format  \ArcShape: ESRI Shapefile format  \ArcExport: ESRI Interchange format		②
\Document	One file: <ul style="list-style-type: none"> <li>• metadata file</li> </ul>	Text format	\24031C_20031217_metadata.txt ([FIPS]_[EffectiveDate(YYYYMMDD)]_metadata.txt) or \241234_12172003_metadata.txt ([CID]_[EffectiveDate(YYYYMMDD)]_metadata.txt)	③
\Ortho_photos	Digital aerial photographs and their associated world files	Unspecified		④

Source: Table 1-6 Digital File Structure, Guidelines and Specifications for Flood Hazard Mapping Partners (April 2003)

**Table 1. Digital Folder Contents and File Naming Conventions (Continued)**

Directory Name	Directory Contains	File Format	File/Folder Name Example	Diagram Reference
\RFIRM	Raster image of FIRM panels and their associated world files	TIFF for Vector base map (i.e., black and white) PNG for Orthophoto base map (i.e., two-color)	\24031C0001A.tif and \24031C001A.tfw <i>((FIPS)C[PanelNumber][PanelSuffix].tif)</i> or \2412340001A.tif and \241234001A.tfw <i>((CID)[PanelNumber][PanelSuffix].tif)</i>	⑤
\FIS	Digital FIS report	PDF, bookmarked and unsecured	<i>Single jurisdiction, single volume:</i> \241234V000.pdf <i>((CID)C[VolumeNumber].pdf)</i> or <i>Countywide, Volume 1:</i> \24031CV001.pdf <i>((FIPS)[VolumeNumber].pdf)</i>	⑥
\Enhanced_DB	Three subdirectories, each containing all enhanced DFIRM database files in differing formats: <ul style="list-style-type: none"> <li>• \MapInfo</li> <li>• \ArcShape</li> <li>• \ArcExport</li> </ul>	<ul style="list-style-type: none"> <li>• \MapInfo: MapInfo MIF format</li> <li>• \ArcShape: ESRI Shapefile format</li> <li>• \ArcExport: ESRI Interchange format</li> </ul>		⑦

Source: Table 1-6 Digital File Structure, Guidelines and Specifications for Flood Hazard Mapping Partners (April 2003)

## **Appendix A. Transmittal Form**

## TRANSMITTAL FORM

### 1. Point of Contact:

\_\_\_\_\_  
Name of PTS Contractor

\_\_\_\_\_  
Name/Title

\_\_\_\_\_  
Address

\_\_\_\_\_  
Phone Number

\_\_\_\_\_  
Email

\_\_\_\_\_  
Name of Study / CID

\_\_\_\_\_  
Effective Date

### 2. MSC Deliverables Package:

Transmittal Letter(s)

LFD Letter

Inventory Worksheet

CMAL

RFIRM (TIF w/TFW)

RFIRM (PNG w/PGW)

FIS Report (PDF)

OrthoImagery (w/world files)

Shapefiles (SHP w/PRJ)

Map Info Files (MIF)

Metadata (TXT)

Arc Info Interchange Files (E00)

## **Appendix B. Inventory Worksheet**

## MSC Deliverable Guide

<b>INVENTORY WORKSHEET</b>		
TWO COLOR? YES:    NO: ✓		PTS: STARR
EFFECTIVE DATE: 11/18/2009		PROGRAM STATUS: R
COMMUNITY NUMBER: 470267		MAPPING PARTNER: AMEC
STATE AND COUNTY NUMBER (FIPS): 47145		COUNTY CODE: 145
COMMUNITY NAME: Roane County*		STATE/REGION: TN/04
COUNTY NAME: Roane County		<b>MSC USE ONLY</b> DATE DIGITAL RECEIVED:
PRINT TYPE                  NEW:                  REV: ✓		

NEW/REVISED FIRMS		STUDY/ FLOODWAYS		OBSOLETE
PANEL & SUFFIX	QTY TO TRANSFER	PANEL & SUFFIX	QTY TO TRANSFER	PANEL & SUFFIX
47145CIND0B		47145CV000B		47145CIND0A
47145C0093G				47145C0093F
47145C0094G				47145C0094F
47145C0113G				47145C0113F
47145C0140G				47145C0140F
47145C0145G				47145C0145F
47145C0160G				47145C0160F
47145C0170G				47145C0170F
47145C0180G				47145C0180F
47145C0185G				47145C0185F
47145C0190G				47145C0190F
47145C0195G				47145C0195F
47145C0205G				47145C0205F
47145C0206G				47145C0206F
47145C0207G				47145C0207F
47145C0210G				47145C0210F
47145C0215G				47145C0215F
47145C0220G				47145C0220F
47145C0226G				47145C0226F

## **Appendix C. Community Map Action List and Sample**



**COMMUNITY MAP ACTION LIST**

(WHERE NO ENTRY IS NECESSARY, USE N/A)

FINAL LIST \_\_\_\_\_  
DATE \_\_\_\_\_

COLUMN CODE:

1. Two letter state designator

2. FEMA community six-digit I.D. number

3. Community name  
County(s) name

4. Four digit number and suffix for each FIRM or FHBM panel printed

5. INLICOAST  
I-Inland  
C-Coastal  
W-Wave Height

6. HAZARD  
FL-Flood  
MS-Mudslide  
ER-Erosion  
NF- Non-floodprone  
MF-Minimally floodprone  
DF-Undetermined but possible flood hazard

7.60.3 CODE  
\*Dual entry available  
A -Special Hazard not defined, no elevation data (NO FIRM OR FHBM PRINTED)  
B -Special Hazard Designated, no elevation data (FHBM OR MINIMAL FIRM)  
C -FIRM, no floodway or Coastal High Hazard  
D -FIRM, Regulatory floodway designated  
E -FIRM, Coastal High Hazard

8. PROGRAM STATUS  
1 -Emergency  
2 -Regular  
3 -Not participating-no map  
4 -Not participating-with map  
5 -Withdrew  
6 -Suspended

9. FHBM STATUS  
1 -Never mapped  
2 -Original  
3 -Revised  
4 -Rescinded  
5 -Superseded by FIRM

10. FIRM STATUS  
1 -Never mapped  
2 -Original  
3 -Revised  
4 -Rescinded  
5 -All Zone C/X - no published FIRM  
6 -All Zones A & C/X - no elevation determined  
7 -All Zones A & C/X - original FIRM by letter  
8 -All Zone D - no published FIRM  
9 -All Zone D - with published FIRM

11. DATES OF ALL PREVIOUSLY PRINTED MAPS

12. REVISION CODES  
1 -Part 65 - BFE Decrease  
2 -Part 65 - BFE Increase  
3 -Part 65 - SFHA Change  
4 -Part 65- Zone Designation Change: revised FIRM  
5 -Part 65 - Curvilinear  
6 -Parts 64 & 65 - Incorporation  
7 -Parts 64 & 65 – Disincorporation  
8 -Parts 64 & 65 – Annexation  
9 -Part 65 - SFHA Reduction  
10 -Part 68 - SFHA Increase w/o Numbered Zones  
11 -Part 65 - SFHA Increase with Numbered Zones  
12 -Part 65 - Drafting Correction: Printing Errors  
13 -Part 65 - Suffix Change ONLY  
14 -Part 65 - Change to Uniform Zone Designation (7/7/74)  
15 -Revisions Withdrawn  
16 -Refunds Possible  
17 -Letter of Map Revision (elevation change)  
18 -Letter of Map Revision (no elevation change)  
19 -Federal Register Omission  
20 -ATTENTION a previous map(s) rescinded or withdrawn for this community, affecting the sequence of suffixes  
21 -Miscellaneous

13. RESCISSION CODES  
1 -FEMA determined the community would not be inundated by the 100-year flood (COMMUNITY APPEAL)  
2 -FEMA determined the community would not be Inundated by the 100-year flood (no community appeal)  
3 -Map contained printing errors or was Improperly distributed. A new map will be printed & distributed  
4 -Community tacked land use authority over the SFHA  
5 -Map does not accurately show the SFHAs. A new map will be printed and distributed  
6 -The map had Inaccurate flood elevations  
7 -Map rescinded to evaluate mudslide hazards  
8 -T & E or T & E map rescinded  
9 -WITHDRAWN. A revision within a reasonable period was not possible. A new map will be  
10 -Miscellaneous

14. LIST OF NUMBERED FLOODWAY PANELS PRINTED

15. ADDRESS OF COMMUNITY'S MAP REPOSITORY

10 -All Zone C/X - with published FIRM

**COMMUNITY MAP ACTION FORM**  
**REVIEW CONTRACTOR: Michael Baker Corp**

Effective Date: January 19, 2006

List Number:

State	FIA Community Number	Community Name (County Name)	Printed Panel(s) & Suffix	Inland/Coastal	Hazard	60.3 Code	Program Status	Map Status		Initial Map Date		Printed Floodway Panels	Location of Map Repository	Comments
								FHBM	FIRM	FHBM	FIRM			
MO	290813	Linn County (Unincorporated Areas)	INDOA 0025C	I	FL	D	2	1	3		12/15/83		Linn County Courthouse 108 North High Street Linneus, MO 64653	
			0045C, 0050C, 0075C, 0100C, 0125C, 0150C, 0160C, 0170C, 0175C, 0200C, 0225C, 0250C, 0270C, 0275C, 0285C, 0295C, 0300C, 0315C, 0320C, 0325C, 0350C, 0375C, 0400C, 0425C, 0450C, 0455C, 0460C, 0500C											
MO	290214	City of Brookfield (Linn County)	INDOA 0316C 0320C	I	FL	D	2	5	3	02/01/74	07/16/90		City Hall 116 West Brooks Street Brookfield, MO 64628	
MO	290619	City of Browning (Linn County)	INDOA 0045C	I	FL	B	2	5	3	02/21/75	09/18/85		City Hall 313 West Main Street Browning, MO 64630	
MO	290913	City of Bucklin (Linn County)	INDOA 0350C	I	NF	A	2	1	2				City of Bucklin 22 North Livingston Street Bucklin, MO	
MO	290557	City of Laclede (Linn County)	INDOA 0295C	I	FL	B	2	4	2	06/25/76			City Hall 607 Pershing Drive Laclede, MO 64651	
MO	290563	City of Linneus (Linn County)	INDOA 0170C 0175C, 0285C, 0300C	I	FL	B	2	4	3	07/11/75			City of Linneus 207 North High Street Linneus, MO 64653	

## **Appendix D. DFIRM Deliverables**

## DFIRM Deliverables (Revised June, 2010)

The purpose of this document is to ensure consistency of the DFIRM deliverables. These deliverables include the products delivered by the Production and Technical Services (PTS) contractors to the Map Service Center (MSC) and the products that will be distributed by the MSC.

### I. DFIRM products to be delivered to the MSC

- A. Raster Images Geo-referenced
  - a. FIRMs and Floodways
    - i. Vector base maps (i.e., black and white maps) – TIFF, Group 4, 400 dpi 1-bit
    - ii. Orthophoto base maps (i.e., two-color maps) – PNG, 400 dpi–24 bit–D size
  - b. FIS Study Text – one PDF file per volume – bookmarked at the major headings of each entry in the table of contents (minimum) and at the start of each flooding source’s profile (subject to cost and Project Officer’s approval).
- B. DFIRM Vector Databases – GIS data files
  - a. MapInfo files
  - b. ESRI Shapefiles
  - c. ESRI Interchange files
  - d. Metadata
- C. Digital Orthophotos – in the format used to make the DFIRM (if applicable). This will be the format that the orthophotos were provided to FEMA unless the appearance of the portion of the orthophoto shown on the DFIRM was modified by reprojection, resampling, etc. These images must be delivered in black and white so that they can be readily used to recreate the FIRM.
- D. Inventory Worksheet  
Community Map Action List (CMAL) (to be sent with each GPO package and compiled and sent electronically at the completion of an entire effective date).

### II. DFIRM naming convention of products delivered to the MSC

A naming convention for the DFIRM product has been established to facilitate the automation of data storage, retrieval, and CD-ROM production that is based on established FEMA IDs.

**Note: Case must be preserved in all filenames. Use the case shown in the examples below (e.g., uppercase for panels, studies, and DFIRM IDs; mixed case for some directory names; and lower case for “metadata” and file extensions).**

#### DFIRM ID Naming

##### INITIAL DFIRM Submission

The top directory for each CD or DVD containing the initial DFIRM for an area must be identified as:

*<CID or County FIPs>\_DFIRM*

Examples:

120234\_DFIRM – a community DFIRM

12345C\_DFIRM – a county DFIRM

## REVISED DFIRM Submission

When a DFIRM is revising an area that already has a DFIRM database, an alpha is to be added to the DFIRM name as:

*<CID or County FIPs>\_<Alpha>\_DFIRM*

The first revision will contain the letter “A.” The alpha will be advanced one letter for each subsequent revision. If a DFIRM is revised more than 26 times, passing the 26 alpha characters, subsequent revisions will contain double alphas (e.g., AA, AB, and so forth).

Examples:

120234\_A\_DFIRM – a community DFIRM

120234\_AB\_DFIRM – a community DFIRM

12345C\_A\_DFIRM – a county DFIRM

12345C\_AB\_DFIRM – a county DFIRM

A new countywide study for Montgomery County, Maryland, would be stored as:

24031C\_DFIRM

The revised countywide study for Montgomery County, Maryland, would be stored as:

24031C\_A\_DFIRM

### **III. Name and directory structure of CDs and DVDs delivered to the MSC**

#### Disc Volume Name

Including a volume name of the disc is optional. If present, the volume name of the disc, will be the DFIRM\_ID as described above (i.e., 120234\_DFIRM).

#### Directory Structure

The directory structure of the disc is defined to group specific item types into separate directories for processing. Each item type will have a specifically named and located directory on the disc. The overall directory structure is as follows:

```

Volume_Name (optional)
  \
  |   \<DFIRM_ID>
      |   \DFIRM_DB
          |   \ArcExport
          |   \ArcShape
          |   \MapInfo
    
```

```

|       \Document
|       \ Enhanced_DB
|           \ArcExport
|           \ArcShape
|           \MapInfo
|       \FIS
|       \Ortho_photos
|       \RFIRM

```

- \ - The root directory name that appears when the CD is loaded will be the name of the DFIRM ID. This DFIRM\_ID will also appear on the outside of the case.
- \DFIRM\_DB\ - Directory contains subdirectories for GIS file sets.
  - \MapInfo\ - Directory contains all standard DFIRM database files in MapInfo MIF format.
  - \ArcShape\ - Directory contains all standard DFIRM database files in ESRI Shapefile format.
  - \ArcExport\ - Directory contains all standard DFIRM database files in ESRI Interchange format.
- \Document\ - This directory contains the metadata file that has been specified in Appendix L of FEMA's Guidelines and Specifications for Flood Hazard Mapping Partners. This standard states that the file will be named as:

<ST\_FIPS><PCOMM>\_<EFF\_DATE>\_metadata.txt

-or-

<ST\_FIPS><PCOMM>\_<REV>\_<EFF\_DATE>\_metadata.txt

Where:

- A. ST\_FIPS is the two-digit state FIPS code
- B. PCOMM is the either the three digit county FIPS code with a trailing C or the four digit community number
- C. REV is the revision of the DFRIM if it a revised copy
- D. EFF\_DATE is the effective date of the study in *YYYYMMDD* format

Examples:

24031C\_20031217 \_metadata.txt – an initial countywide DFIRM

241234\_20031217\_metadata.txt – an initial community DFIRM

24031C\_A\_20031217 \_metadata.txt – a revised countywide DFIRM

241234\_\_AB\_20031217\_metadata.txt – a revised community DFIRM

- \Ortho\_photos\ - This directory contains any digital aerial photography and associated world files that are shown on the finished FIRM panel.

- \RFIRM\ - This directory contains the georeferenced TIFF and/or the georeferenced PNG raster images of the FIRM panels and their associated world files, following the naming conventions:

Examples:

(Images)	(World Files)
24031C0001A.tif	24031C0001A.tfw
24031C0001A.png	24031C0001A.pgw

- \FIS\ - This directory contains the PDF version of the FIS report, following the naming conventions for an FIS study text:

Example:

24031CV000.pdf

- \Enhanced\_DB\ - Directory contains subdirectories for GIS file sets.
  - \MapInfo\ - Directory contains all enhanced DFIRM database files in MapInfo MIF format.
  - \ArcShape\ - Directory contains all enhanced DFIRM database files in ESRI Shapefile format.
  - \ArcExport\ - Directory contains all enhanced DFIRM database files in ESRI Interchange format (if available).

#### IV. DFIRM naming convention of products to be distributed by the MSC

Products distributed by the MSC will utilize the following naming convention to be easily understood by customers:

##### A. DFIRM database

State abbreviation\Community or County Name\DFIRM\_DB

Examples:

\MD\Montgomery\_Co\DFIRM\_DB

- \DFIRM\_DB\
  - \MapInfo\ - Directory contains all standard DFIRM database files in MapInfo MIF format.
  - \ArcShape\ - Directory contains all standard DFIRM database files in ESRI Shapefile format.
  - \ArcExport\ - Directory contains all standard DFIRM database files in ESRI Interchange format.
- \Enhanced\_DB\
  - \MapInfo\ - Directory contains all enhanced DFIRM database files in MapInfo MIF format.

- \ArcShape\ - Directory contains all enhanced DFIRM database files in ESRI Shapefile format.
- \ArcExport\ - Directory contains all enhanced DFIRM database files in ESRI Interchange format.
- \Document\ - Directory contains the metadata file.  
The DFIRM database standard states that the file will be named as:

`<ST_FIPS><PCOMM>_<EFF_DATE>_metadata.txt`

Where:

- ST\_FIPS is the two-digit state FIPS code
- PCOMM is either the three digit county FIPS code with a trailing C or the four digit community number
- EFF\_DATE is the effective date of the study in YYYYMMDD format

Examples:

24031C\_20031217\_metadata.txt – a countywide DFIRM

241234\_20031217\_metadata.txt – a community DFIRM

- \Ortho\_photos\ - Directory contains digital aerial photography and associated world files (if available).

### B. Raster Maps

TIFF or PNG raster images of FIRM panels

Examples:

(Images)	(World Files)
24031C0001A.tif	24031C0001A.tfw
24031C0001A.png	24031C0001A.pgw

### C. FIS

PDF of the FIS report

Example:

24031CV000.pdf

## **Appendix E. Community Map Action List**

## Community Map Action List Select Category Codes and their Usage August 2, 2006

The FEMA Map Service Center (MSC) has created this document with the assistance of FEMA’s Community Assistance Section to help identify the proper usage of select category codes found on the Community Map Action List (CMAL). The intent of this document is to reduce the data entry errors found on CMALs that are submitted to the MSC as part of the MSC Deliverables Package. The tables provided below correspond to select categories of the CMAL. Each table includes the various codes found in that category and a detailed description of each code’s usage.

Column: INLAND/COASTAL – (only one code can be selected for a community):

CMAL Code	Explanation and Usage of Code
I – Inland	Used for inland flooding. Should be used if the 60.3 code shown in the LFD is “b,” “c” or “d.”
C – Coastal	Used for coastal flooding. Should be used if the 60.3 code shown in the LFD is “e.”
IC –Inland and Coastal	Used if a community is affected by both inland and coastal flooding. Should be used if the 60.3 code shown in the LFD is either “b,” “c” or “d” and “e.”

Column: HAZARD – (only one code can be selected for a community):

CMAL Code	Explanation and Usage of Code
FL – Flood	Used if the community has SFHAs identified. SFHAs consist of Zones AE, AO, AH, AR, A99, A1-A30, VE, VO and V1-V30 included on FHBM/FIRM). Do not use this code for communities with only Zones A or V; use “MF” for minimally floodprone instead.
MS– Mudslide	Used if the community is subject to mudslides (Zones M, N and/or P shown on FHBM/FIRM. Maps may be printed or unprinted).
ER – Erosion	Used if the community is subject to erosion hazards (Zone E shown on FHBM/FIRM).
NF – Non-floodprone	Used if the community has no SFHAs identified (Only Zones B, C or X shown on FHBM/FIRM).
MF – Minimally floodprone	Used if the community has only unnumbered/unlettered Zones A or V identified.
DF – Undetermined but possible flood hazard	Used if the community has undetermined, but possible flood hazards (Zone D shown on FHBM/FIRM. Maps may be printed or unprinted).

Column: PROGRAM STATUS – (only one code can be selected for a community):

CMAL Code	Explanation and Usage of Code
1 – Emergency	Community participates in the Emergency Program.
2 – Regular	Community participates in the Regular Program.
3 – Not participating, no map	Community is non-participating in the NFIP and is not shown on a FHBM/FIRM.
4 – Not participating, with map	Community is non-participating in the NFIP and is shown on a FHBM/FIRM.
5 – Withdrew	Community has withdrawn from the NFIP.
6 – Suspended	Community is currently suspended from the NFIP.
7, 8, and 9	Internal codes. Contact MSC before use.

## MSC Deliverable Guide

Column: MAP STATUS (FHBM) – (only one code can be selected for a community):

CMAL Code	Explanation and Usage of Code
1 – Never mapped	A FHBM was never produced for the community. Leave the date field on the CMAL blank.
2 – Original	The FHBM is the original for the community. The effective date of the map should be recorded on the CMAL.
3 – Revised	The original FHBM was revised by another FHBM. The revision date of the map should be recorded in the notes section of the CMAL.
4 – Rescinded	The FHBM was rescinded. The date of and reason for the rescission should be recorded in the notes section of the CMAL.
5 – Superseded by FIRM	The FHBM was superseded by a FIRM. The effective date of the FIRM represents the date on which the FHBM was superseded.

Column: MAP STATUS (FIRM) – (only one code can be selected for a community):

CMAL Code	Explanation and Usage of Code
1 – Never mapped	A FIRM has never been produced for the community. Leave the date field on the CMAL blank.
2 – Original	The FIRM represents the first FIRM for the community that contains SFHAs with Base Flood Elevations (BFEs). For FIRMs produced in the non-countywide format, the date of the FIRM is identified as “Effective Date” on the title block. This FIRM’s effective date would be listed in the CIS under the initial FIRM field.
3 – Revised	The current FIRM for the community is being superseded by a new FIRM (the FIRM is being revised). For FIRMs produced in the non-countywide format, the date of the FIRM is identified as “Map Revised” on the title block. The FIRM must contain SFHAs with BFEs.
4 – Rescinded	The FIRM was rescinded. The date of, and reason for, the rescission should be recorded in the notes section of the CMAL.
5 – All Zone C/X – No published FIRM	The community is participating in the Regular Program as non-floodprone and no FIRM has been printed (identified non-SHFA community). This code can be used for non-participating communities; however, they will not be sanctioned after one year if they fail to adopt.
6 – All Zones A & C/X – no elevation determined	The community is either non-participating or participating in the Regular Program as minimally floodprone and the published FIRMs include only Zones A and C.
7 – All Zones A & C/X – original FIRM by letter	The community is participating in the Regular Program as minimally floodprone and the FHBM was converted to a FIRM by letter. In the rarest of occasions, this code may apply to non-participating communities.
8 – All Zone D – no published FIRM	The community is all Zone D and there is no published FIRM. This code can apply to non-participating or participating communities.
9 – All Zone D – with published FIRM	The community is all Zone D and a FIRM was printed. This code can apply to non-participating or participating communities.
10 – All Zone C/X – with published FIRM	The community is all Zone C/X and a FIRM was printed. If used for non-participating communities, they will not be sanctioned after one year if they fail to adopt.