For more information, visit the FEMA Guidelines and Standards for Flood Risk Analysis and Mapping webpage. Copies of the Standards for Flood Risk Analysis and Mapping policy, related guidance, technical references, and other information about the guidelines and standards development process are all available here. You can also search directly by document title at www.fema.gov/library.

Implementation Instructions

This version of the Technical Reference must be used on projects as described below. Generally, the changes in this version may also be implemented on any project, in coordination with the FEMA Project and Contracting Officer’s Representative.

<table>
<thead>
<tr>
<th>Revision Date</th>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 2017</td>
<td>Implemented immediately.</td>
</tr>
</tbody>
</table>

Table of Revisions

The following summary of changes details revisions to the Data Capture Technical Reference subsequent to its most recent version in November 2016.

<table>
<thead>
<tr>
<th>Affected Section or Subsection</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sections 1.0 and 3.0</td>
<td>May 2017</td>
<td>Revised to reflect Mapping Information Platform (MIP) Studies Redesign and new data upload processes and terminology.</td>
</tr>
<tr>
<td>Section 5.0</td>
<td>May 2017</td>
<td>Revised to reflect MIP Studies Redesign and new data upload processes and terminology; added Flood Elevation Determination Docket (FEDD) as final deliverable.</td>
</tr>
<tr>
<td>Section 6.0</td>
<td>May 2017</td>
<td>Revised to reflect MIP Studies Redesign and new data upload processes and terminology; added Validation and Independent Quality Assurance (QA)/Quality Control (QC) folders to all Data Capture purchases; added Levee, Outreach, Due Process, and General purchases and task folders.</td>
</tr>
</tbody>
</table>

This Document is Superseded. For Reference Only.
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For Reference Only.
1. Introduction

The purpose of the Data Capture Technical Reference is to provide a consistent framework for submittal, storage and retrieval of the technical and administrative data needed for a Flood Risk Project. In addition, this document provides data submittal standards for supporting data that are used in performing risk assessment analyses and the creation of flood risk products. This framework is intended to improve the quality of Flood Risk Project documentation; facilitate effective project handoff between organizations; provide easier retrieval of Flood Risk Project data and preserve the investment made in the data.

The following major production data capture points in the Mapping Information Platform (MIP) are included in this technical reference: Discovery, Base Map, Topographic, Terrain, Survey, Hydrology, Hydraulics, Alluvial Fan, Coastal, Levee, Floodplain Mapping, Draft Flood Insurance Rate Map (FIRM) Database, Produce Preliminary Products, Outreach, Due Process, Final FIRM Map Production and Distribution, General Data, and Flood Risk Products.

This document is intended to be used in conjunction with the FIRM Database Technical Reference document, which details the Geographic Information System (GIS) file formats and content of the FIRM Database files. Most of the FIRM Database files are initially developed during the data development stages outlined as MIP Data Capture tasks and will be submitted incrementally as the Flood Risk Project progresses through data development. The standards outlined in the FIRM Database Technical Reference must be applied to the FIRM Database elements of the Data Capture data submittals.

This document outlines some additional data standards for Discovery, Elevation, and Survey data. It also provides the required submittal directory structure and file format requirements for each MIP Data Capture task and upload.

2. Discovery Data Submittal Requirements

Discovery deliverables include all the data collected during Discovery (including data collected after the Discovery meeting) and the draft and final Discovery Map. Any data collected during Discovery that are required by the Coordinated Needs Management Strategy (CNMS) must use the data model provided in the CNMS Technical Reference to enter the data and update CNMS.

Discovery deliverables that are not captured by the CNMS are listed in the following sections and must be submitted as specified in this section and Section 6. An Extensible Markup Language (XML) file with the Discovery spatial data schema can be found on the FEMA Templates and Other Resources webpage at www.FEMA.gov.

If additional data are collected during Discovery that are not specifically mentioned in this section, those data must also be submitted in the format collected as part of Discovery deliverables as supplementary data. Data submitted to the MIP as part of this section must be consistent with data listed in the Discovery Report.
2.1 Table: DCS_L_Mtg_POC

This table is required for all Discovery projects. This non-spatial table includes contact information for the county and every incorporated community in the Flood Risk Project that has the following positions/roles occupied: Chief Executive Officer (CEO), such as Mayor, City Manager, County Judge or other; State National Flood Insurance Program (NFIP) Coordinator; local Floodplain Administrator (if community participates in the NFIP); State Hazard Mitigation Officer (SHMO) and data/GGIS contact (person to contact to obtain local data for use in the Flood Risk Project).

Table 1: DCS_L_Mtg_POC

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POC_ID</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Primary key for this table. Assigned by table creator</td>
</tr>
<tr>
<td>POC_NAME</td>
<td>Text</td>
<td>50</td>
<td>R</td>
<td>Point of Contact Full Name</td>
</tr>
<tr>
<td>FIRST_NAME</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Point of Contact First Name</td>
</tr>
<tr>
<td>LAST_NAME</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Point of Contact Last Name</td>
</tr>
<tr>
<td>CNT_TITLE</td>
<td>Text</td>
<td>50</td>
<td>A</td>
<td>Contact Position or Title</td>
</tr>
<tr>
<td>AGENCY</td>
<td>Text</td>
<td>50</td>
<td>R</td>
<td>Contact Agency Name</td>
</tr>
<tr>
<td>AGY_ROLE</td>
<td>Text</td>
<td>50</td>
<td>A</td>
<td>Role of Contact Agency</td>
</tr>
<tr>
<td>CEO</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Community CEO for NFIP purposes. Acceptable values for this field can be found in the D_TrueFalse domain table</td>
</tr>
<tr>
<td>FPA</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Community Floodplain Administrator for NFIP Purposes. Acceptable values for this field can be found in the D_TrueFalse domain table</td>
</tr>
<tr>
<td>SHMO</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>State Hazard Mitigation Officer. Acceptable values for this field can be found in the D_TrueFalse domain table</td>
</tr>
<tr>
<td>GIS</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>GIS Point of Contact for Community/Agency. Acceptable values for this field can be found in the D_TrueFalse domain table</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>Text</td>
<td>75</td>
<td>A</td>
<td>Contact Address</td>
</tr>
<tr>
<td>ADDRESS_2</td>
<td>Text</td>
<td>75</td>
<td>A</td>
<td>Contact Address 2</td>
</tr>
<tr>
<td>CITY</td>
<td>Text</td>
<td>25</td>
<td>A</td>
<td>Contact City</td>
</tr>
<tr>
<td>STATE</td>
<td>Text</td>
<td>24</td>
<td>A</td>
<td>Contact State. Acceptable values for this field are listed in the D_State_Name domain table</td>
</tr>
<tr>
<td>ZIP</td>
<td>Text</td>
<td>10</td>
<td>A</td>
<td>Contact ZIP Code</td>
</tr>
<tr>
<td>PHONE</td>
<td>Text</td>
<td>10</td>
<td>A</td>
<td>Contact Primary Phone Number. Only numbers (i.e., 3035551212)</td>
</tr>
<tr>
<td>PHONE_EXT</td>
<td>Text</td>
<td>6</td>
<td>A</td>
<td>Contact Primary Phone Number Extension. For example, x2345</td>
</tr>
<tr>
<td>EMAIL</td>
<td>Text</td>
<td>50</td>
<td>A</td>
<td>Contact E-mail Address</td>
</tr>
<tr>
<td>COMMENTS</td>
<td>Text</td>
<td>254</td>
<td>A</td>
<td>User provided comments</td>
</tr>
</tbody>
</table>
2.2 Table: DCS_L_Source_Cit

This table is required for all Discovery projects. This non-spatial table includes information about the sources of the spatial data that are submitted.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOURCE_CIT</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>Source Citation identifier used in the FIRM Database and in the metadata files. Default source abbreviations are listed in Table 3 of the FIRM Database Technical Reference. Source citations start with the type of source, followed by sequential numbers, for example “BASE1,” “BASE2,” etc.</td>
</tr>
<tr>
<td>CITATION</td>
<td>Text</td>
<td>25</td>
<td>A</td>
<td>Citation A short and unique citation name (Author and Year) used within the Flood Insurance Study (FIS) Report to reference this publication, such as “U.S. Census 2010.”</td>
</tr>
<tr>
<td>PUBLISHER</td>
<td>Text</td>
<td>254</td>
<td>R</td>
<td>Publisher Name This is the name of the publishing entity.</td>
</tr>
<tr>
<td>TITLE</td>
<td>Text</td>
<td>254</td>
<td>R</td>
<td>Title of referenced publication or data. Should include a volume number if applicable.</td>
</tr>
<tr>
<td>AUTHOR</td>
<td>Text</td>
<td>254</td>
<td>A</td>
<td>Author/Editor Used in FIS Report Bibliography and References Table. This is the author or editor of the reference. Multiple authors may be listed in this field.</td>
</tr>
<tr>
<td>PUB_PLACE</td>
<td>Text</td>
<td>100</td>
<td>A</td>
<td>Publication Place This is the place of publication (i.e., “Washington DC”).</td>
</tr>
<tr>
<td>PUB_DATE</td>
<td>Text</td>
<td>30</td>
<td>R</td>
<td>Publication Date. This the date of publication or date of issuance.</td>
</tr>
<tr>
<td>WEBLINK</td>
<td>Text</td>
<td>128</td>
<td>A</td>
<td>Reference Web Address. This is the web address for the reference, if applicable.</td>
</tr>
<tr>
<td>SRC_SCALE</td>
<td>Text</td>
<td>12</td>
<td>A</td>
<td>Scale of the source data, if applicable. For example: 1:24000.</td>
</tr>
<tr>
<td>MEDIA</td>
<td>Text</td>
<td>50</td>
<td>R</td>
<td>Media on which the source data were received.</td>
</tr>
<tr>
<td>SRC_DATE</td>
<td>Date</td>
<td>Default</td>
<td>A</td>
<td>Calendar date of the source data. Required for spatial sources. Used in metadata.</td>
</tr>
<tr>
<td>DATE_REF</td>
<td>Text</td>
<td>254</td>
<td>A</td>
<td>Date reference. What the source date represents (e.g., ground condition, effective date, publication date, model date, MIP submission date, etc.). Required for spatial sources. Used in metadata.</td>
</tr>
<tr>
<td>CONTRIB</td>
<td>Text</td>
<td>254</td>
<td>A</td>
<td>Source contribution. Information contributed by the source to the data set. Required for spatial sources. Used in metadata.</td>
</tr>
<tr>
<td>NOTES</td>
<td>Text</td>
<td>254</td>
<td>A</td>
<td>User Defined Notes.</td>
</tr>
</tbody>
</table>
2.3 Table: DCS_S_Pol_Ar

This table is required for all Discovery projects. This spatial file contains the political boundaries that cover the geographic extent of the Flood Risk Project. The spatial entity for this layer is a polygon.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL_AR_ID</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Primary key for table lookup. Assigned by table creator.</td>
</tr>
<tr>
<td>POL_NAME1</td>
<td>Text</td>
<td>50</td>
<td>R</td>
<td>Political Area Name 1. This is the primary name of the area shown, the area with floodplain management jurisdiction. For areas that have more than one name, this would be the primary name, with additional names shown in the field below. This would correspond to the official name of this jurisdiction used by FEMA within the NFIP. For unincorporated areas of a county, this must be the county name (e.g., Montgomery County).</td>
</tr>
<tr>
<td>POL_NAME2</td>
<td>Text</td>
<td>50</td>
<td>A</td>
<td>Political Area Name 2. This is the secondary name of the area shown. Populated if there is a common name for an area other than the official jurisdiction name.</td>
</tr>
<tr>
<td>POL_NAME3</td>
<td>Text</td>
<td>50</td>
<td>A</td>
<td>Political Area Name 3. This is the tertiary name of the area shown. Populated if there is a situation where islands, National Parks, National Forests, military bases, or other area boundaries and labels need to be shown on the FIRM underneath the POL_NAME1 and POL_NAME2 labels.</td>
</tr>
<tr>
<td>CO_FIPS</td>
<td>Text</td>
<td>3</td>
<td>R</td>
<td>This is the three-digit county Federal Information Processing Standard (FIPS) code. This is a standard numbering system that is used by the Federal government. Defined in FIPS Pub 6-4.</td>
</tr>
<tr>
<td>ST_FIPS</td>
<td>Text</td>
<td>2</td>
<td>R</td>
<td>This is the two-digit code that corresponds to the State FIPS code. This is a standard numbering system that is used by the Federal government. Defined in FIPS Pub 6-4. These two numbers correspond to the first two digits of the panel number. Acceptable values for this field are listed in the D_State_FIPS domain table.</td>
</tr>
<tr>
<td>COMM_NO</td>
<td>Text</td>
<td>4</td>
<td>R</td>
<td>This is the four-digit number assigned by FEMA to each community for tracking purposes under the NFIP. On newer FIRMs the State FIPS and the community number appear below the community name.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>R/A</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>-------</td>
<td>--------</td>
<td>-----</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CID</td>
<td>Text</td>
<td>6</td>
<td>R</td>
<td>This is the six-digit Community Identification (CID) number assigned by FEMA. It is created by combining the State FIPS code with the COMM_NO. If the jurisdiction does not have a community number assigned by FEMA, the CID is created by combining the State FIPS code with the abbreviation contained in the COMM_NO field (FED, ST, or OTHR).</td>
</tr>
<tr>
<td>ANI_TF</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Area Not Included. Acceptable values for this field are listed in the D_TrueFalse domain table.</td>
</tr>
<tr>
<td>ANI_FIRM</td>
<td>Text</td>
<td>6</td>
<td>A</td>
<td>Used for Area Not Included (ANI) polygons where ANI_TF equals “T” and where the data is included in another FIRM Database, usually because it is a multi-county community. Enter the DFIRM_ID of the FIRM Database that contains the Special Flood Hazard Area (SFHA) data of the ANI community. For a single-jurisdiction Flood Risk Project, the value is composed of the 2-digit state FIPS code and the 4-digit FEMA CID code (e.g., 480001). For a countywide Flood Risk Project, the value is composed of the 2-digit state FIPS code, the 3-digit county FIPS code, and the letter “C” (e.g., 48107C). Populate with “NP” if the area has never been converted to a FIRM Database from paper FIRM format.</td>
</tr>
<tr>
<td>SOURCE_CIT</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>Source Citation. Abbreviation used in the metadata file when describing the source information for the feature. The abbreviation must match a value in the DCS_L_Source_Cit table.</td>
</tr>
</tbody>
</table>

### 2.4 Table: DCS_S_Trnsport_Ln
This table is required for all Discovery projects. This spatial file provides transportation features that cover the geographic extent of the Flood Risk Project/mapping project. The spatial entity for this layer is a line.
### Table 4: DCS_S_Transport Ln

<table>
<thead>
<tr>
<th>Fields</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANS_ID</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Primary key for table lookup. Assigned by table creator.</td>
</tr>
<tr>
<td>MTFCC</td>
<td>Text</td>
<td>70</td>
<td>R</td>
<td>Census Bureau Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) feature class code. Defines the primary feature for the edge. Acceptable values for this field are listed in the D_MTFCC domain table.</td>
</tr>
<tr>
<td>FULLNAME</td>
<td>Text</td>
<td>100</td>
<td>R</td>
<td>Full name of feature. Concatenation of expanded text for prefix, qualifier, prefix direction, prefix type, base map name, suffix type, suffix direction, and suffix qualifier (as available) with a space between each expanded text field. This is the primary name of the feature. For areas that have more than one name, this would be the primary name with subsequent names shown in fields below. Route numbers and &quot;Intercoastal Waterway&quot; would also be included in this item.</td>
</tr>
<tr>
<td>ALTNAME1</td>
<td>Text</td>
<td>100</td>
<td>A</td>
<td>First alternative name of feature. This is the secondary name of the feature.</td>
</tr>
<tr>
<td>ALTNAME2</td>
<td>Text</td>
<td>100</td>
<td>A</td>
<td>Second alternative name of feature. This is the tertiary name of the feature.</td>
</tr>
<tr>
<td>SOURCE_CIT</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>Source Citation. Abbreviation used in the metadata file when describing the source information for the feature. The abbreviation must match a value in the DCS_L_Source_Cit table.</td>
</tr>
</tbody>
</table>

### 2.5 Table: DCS_S_HUC

This table is required for all Discovery projects. This spatial file contains the Hydrologic Unit Codes (HUCs) for the Flood Risk Project area. This will enable the capture of appropriate drainage basins, including those outside the community boundary. The spatial entity for this layer is a polygon.
2.6 Table: DCS_S_Discovery_Map

This table is required on all Discovery projects. This spatial file contains each stream segment and/or coastline contained within the FIRM database, National Hydrography Dataset (NHD) 100k coverage or best available streamline and/or flood sources included in the scope of work for the flood map project update. This file should provide an inventory of stream mileage for the project area by effective and proposed zone and Flood Risk Project type. This will be shown on the final Discovery Map. The spatial entity for this layer is a line.

Table 6: DCS_S_Discovery_Map

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DISCMAP_ID</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Primary key for table lookup. Assigned by table creator.</td>
</tr>
<tr>
<td>COUNTY</td>
<td>Text</td>
<td>100</td>
<td>R</td>
<td>County Name</td>
</tr>
<tr>
<td>COMMUNITY</td>
<td>Text</td>
<td>100</td>
<td>R</td>
<td>Community Name</td>
</tr>
<tr>
<td>STATE</td>
<td>Text</td>
<td>24</td>
<td>R</td>
<td>State Name. Acceptable values for this field are listed in the D_State_Name domain table.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>R/A</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td>--------</td>
<td>-----</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>CID</td>
<td>Text</td>
<td>6</td>
<td>R</td>
<td>This is the six-digit community identification number (CID) assigned by FEMA. It is created by combining the State FIPS code with the COMM_NO. If the jurisdiction does not have a community number assigned by FEMA, the CID is created by combining the State FIPS code with the abbreviation contained in the COMM_NO field (FED, ST, or OTHR).</td>
</tr>
<tr>
<td>ST_FIPS</td>
<td>Text</td>
<td>2</td>
<td>R</td>
<td>This is the two-digit code that corresponds to the State FIPS code. This is a standard numbering system that is used by the Federal government. Defined in FIPS Pub 6-4, these two numbers correspond to the first two digits of the panel number. Acceptable values for this field are listed in the D_State_FIPS domain table.</td>
</tr>
<tr>
<td>EZONE_TYP</td>
<td>Text</td>
<td>17</td>
<td>R</td>
<td>From effective Flood Risk Project. Acceptable values for this field are listed in the D_Zone domain table.</td>
</tr>
<tr>
<td>EST_TYP</td>
<td>Text</td>
<td>28</td>
<td>R</td>
<td>Effective Study Type. Acceptable values for this field are listed in the D_Study_Typ domain table.</td>
</tr>
<tr>
<td>FLOOD_TYP</td>
<td>Text</td>
<td>10</td>
<td>R</td>
<td>Flooding type. Acceptable values for this field are listed in the D_Flood_Typ domain table.</td>
</tr>
<tr>
<td>WTR_NM</td>
<td>Text</td>
<td>100</td>
<td>R</td>
<td>Surface Water Feature Name. This is the name of the stream or water body, including lakes and shorelines.</td>
</tr>
<tr>
<td>STREAM_LEN</td>
<td>Double</td>
<td>Default</td>
<td>R</td>
<td>Length of stream associated with a Flood Risk Project in feet</td>
</tr>
<tr>
<td>FBS_TF</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Are stream segments anticipated to meet Floodplain Boundary Standard (FBS)? Acceptable values for this field are listed in the D_TrueFalse domain table.</td>
</tr>
<tr>
<td>RANKING</td>
<td>Text</td>
<td>6</td>
<td>A</td>
<td>Ranking based on local/regional input. Values to be used for this field are High, Medium or Low.</td>
</tr>
</tbody>
</table>
### 2.7 Table: DCS_S_Prp_FirmPan

This table is required for Discovery projects if a Flood Risk Project will result from Discovery. This spatial file contains the proposed panel scheme for the Flood Risk Project area and the panels to be updated as a result of the Discovery meeting. The spatial entity for this layer is a polygon.

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FST_TYP</td>
<td>Text</td>
<td>28</td>
<td>R</td>
<td>Final Study Type. Acceptable values for this field are listed in the D_Study_Typ domain table.</td>
</tr>
<tr>
<td>SOURCE_CIT</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>Source Citation. Abbreviation used in the metadata file when describing the source information for the feature. The abbreviation must match a value in the DCS_L_Source_Cit table.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field</th>
<th>Type</th>
<th>Length</th>
<th>R/A</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRM_ID</td>
<td>Text</td>
<td>25</td>
<td>R</td>
<td>Primary key for table lookup. Assigned by table creator.</td>
</tr>
<tr>
<td>ST_FIPS</td>
<td>Text</td>
<td>2</td>
<td>R</td>
<td>State FIPS. Acceptable values for this field are listed in the D_State_FIPS domain table.</td>
</tr>
<tr>
<td>PCOMM</td>
<td>Text</td>
<td>4</td>
<td>R</td>
<td>Community or County Identification Number. This is the 3rd through the 6th digits of the panel number. For community based maps this corresponds to the FEMA CID. For countywide maps, this is the county (or county equivalent) FIPS code with a “C”.</td>
</tr>
<tr>
<td>PANEL</td>
<td>Text</td>
<td>4</td>
<td>R</td>
<td>Panel Number. This is the 7th through the 10th digits in the complete panel number. This is assigned by the scale of the map and the position within the community or county.</td>
</tr>
<tr>
<td>SUFFIX</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Map Suffix. This is the final digit in the complete panel number. This is a letter suffix at the end of the panel number. The map suffix is incremented one letter every time the panel gets republished.</td>
</tr>
<tr>
<td>Field</td>
<td>Type</td>
<td>Length</td>
<td>R/A</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>------</td>
<td>--------</td>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>FIRM_PAN</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>This is the complete FIRM panel number, which is made up of ST_FIPS, PCOMM, PANEL, and SUFFIX. This is the 11-digit FIRM panel number that is shown in the title block of the map.</td>
</tr>
<tr>
<td>PANEL_TYP</td>
<td>Text</td>
<td>30</td>
<td>R</td>
<td>Panel Type. The type of FIRM panel that identifies whether the panel is printed or not printed and whether it is community based or countywide mapping. Acceptable values for this field are listed in the D_Panel_Typ domain table.</td>
</tr>
<tr>
<td>SCALE</td>
<td>Text</td>
<td>5</td>
<td>R</td>
<td>Map Scale. This is the denominator of the FIRM scale as a ratio. For example, 24000 is the denominator for a 1&quot; = 2000' map. Acceptable values for this field are listed in the D_Scale domain table.</td>
</tr>
<tr>
<td>BASE_TYP</td>
<td>Text</td>
<td>10</td>
<td>R</td>
<td>Base map type. The type of base map used for the FIRM panel shall be recorded in this field. Acceptable values for this field are listed in the D_Basemap_Typ domain table.</td>
</tr>
<tr>
<td>UPDATED_TF</td>
<td>Text</td>
<td>1</td>
<td>R</td>
<td>Will this panel be updated as a result of Discovery meeting? Acceptable values for this field are listed in the D_TrueFalse domain table.</td>
</tr>
<tr>
<td>SOURCE_CIT</td>
<td>Text</td>
<td>11</td>
<td>R</td>
<td>Source Citation. Abbreviation used in the metadata file when describing the source information for the feature. The abbreviation must match a value in the DCS_L_Source_Cit table.</td>
</tr>
</tbody>
</table>

3. Elevation Data Submittal Requirements

The MIP allows for several separate types of elevation data. Each of these types of elevation data are assigned a unique MIP Data Capture task type: New Topographic Data Capture tasks are for elevation data that are newly purchased, Existing Topographic Data Capture tasks are for existing elevation data gathered for a Flood Risk Project, and Terrain Data Capture tasks are for processed terrain data that are used in the Flood Risk Project modeling and mapping tasks.

Elevation data submittals must be submitted as specified in Section 6, in folders organized by the elevation task type. Within those folders, the data are to be organized in sub-folders based on
the type of data being submitted (e.g., point cloud, break lines, DEM, Hydro-flattened or Hydro-enforced, Triangulated Irregular Network [TIN], contours, etc. as applicable). Note that even if elevation data are submitted on media to the Engineering Library, the supporting documentation (i.e. the content of the Task Documentation, Correspondence, and Spatial_Files folders) must be uploaded to the MIP.

See the Elevation Guidance document for information about elevation data types, elevation data accuracy standards and reporting, and elevation data acquisition. See the MIP Guidance document for information about submitting large datasets on media.

3.1 Elevation Inventory File

When FEMA purchases new topographic data (e.g., LiDAR, photogrammetry, or topobathymetry) directly, in addition to submitting the full suite of required data deliverables (i.e., raw point cloud, classified point cloud, and DEM), the data must be accompanied by a spatial elevation inventory file named S_Elev_Inv_Ar. This file was defined by the National Oceanic and Atmospheric Administration (NOAA) and it may not conform to FEMA FIRM Database conventions (e.g., domain values). FEMA and other agencies report the status of their elevation datasets to NOAA using this file and NOAA uses the data in this file to update the on-line U.S Interagency Elevation Inventory.

This table is required when FEMA purchases new elevation data directly. It is not required if the purchase was made using a USGS contract vehicle, i.e., the USGS Geospatial Product and Services Contract).

The spatial entities representing the elevation inventory footprints are polygons.

The S_Elev_Inv_Ar layer contains the following elements.

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Required/Required if Applicable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEV_INV_ID</td>
<td>R</td>
<td>Primary key for table lookup. Assigned by table creator (NOAA).</td>
</tr>
<tr>
<td>ProjectName</td>
<td>R</td>
<td>Descriptive name of the project. The name should include the following in order: the year of collection, the source, and the title of the data collection. If it is already this way, there is no need to change it. For new data sets, make sure to include all the information mentioned above and make sure the data set name is unique. (Example: “2010 FEMA Lidar: Great Dismal Swamp.”)</td>
</tr>
<tr>
<td>DataType</td>
<td>R</td>
<td>Type of data. Acceptable values for this field are: Lidar-Topo, Lidar-Topobathy, Lidar-Bathy, IfSAR, Multibeam, NOAA Hydro Survey, Other Bathy Survey, and Photogrammetry. Normally Lidar-Topo for FEMA projects.</td>
</tr>
<tr>
<td>CollectionYear</td>
<td>R</td>
<td>Fiscal year the data was funded. If multi-year, input year when the majority of data was funded. If the year is unknown, enter 9999.</td>
</tr>
<tr>
<td>Field Name</td>
<td>Required/Required if Applicable</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>ProjectStatus</td>
<td>R</td>
<td>The completion status of the data. Acceptable values for this field are: Complete, In Progress, Planned/Funded, and Unknown. Normally this file is submitted at Complete.</td>
</tr>
<tr>
<td>Restrictions</td>
<td>R</td>
<td>The restrictions, if any, on use of the data. Acceptable values for this field are: Public, Purchase, Government Only, Other, and Unknown. All FEMA purchased data must be public.</td>
</tr>
<tr>
<td>State</td>
<td>R</td>
<td>2-letter abbreviation of the state. If multiple states, leave blank, acceptable values for this field are listed in the D_State_Name table.</td>
</tr>
<tr>
<td>MissionID</td>
<td>A</td>
<td>Placeholder for NOAA CSC internal Lidar mission ID. Leave blank.</td>
</tr>
<tr>
<td>PointOfContact</td>
<td>R</td>
<td>Point of contact (POC) for the data. If known, include position of the person responsible, name of office/agency, URL, phone number, email. The information in this field will not be publicly distributed, so you are able to include personal information (name, email, etc.). Coordinate with FEMA project lead. Could be FEMA lead, contractor name, MIP Help or other POC.</td>
</tr>
<tr>
<td>MetadataLink</td>
<td>R</td>
<td>The URL for link to the metadata. If no link to the metadata is available, enter &quot;Not Provided.&quot; For metadata uploaded to the MIP: <a href="https://hazards.fema.gov">https://hazards.fema.gov</a></td>
</tr>
<tr>
<td>WebServiceLink</td>
<td>A</td>
<td>The URL for data download where possible. If data is not available for online download enter a Point of Contact. DO NOT INCLUDE PERSONAL INFORMATION (name, email). Do include title, name of office/agency, URL, phone number. For FEMA this will typically be: FEMA Engineering Library <a href="https://www.fema.gov/engineering-library">https://www.fema.gov/engineering-library</a> (1-877) FEMA MAP (1-877-336-2627)</td>
</tr>
<tr>
<td>DataAccess</td>
<td>R</td>
<td>The URL for data download where possible. If data is not available for online download enter a Point of Contact. DO NOT INCLUDE PERSONAL INFORMATION (name, email). Do include title, name of office/agency, URL, phone number. For FEMA this will typically be: FEMA Engineering Library <a href="https://www.fema.gov/engineering-library">https://www.fema.gov/engineering-library</a> (1-877) FEMA MAP (1-877-336-2627)</td>
</tr>
<tr>
<td>HorizontalDatum</td>
<td>R</td>
<td>Horizontal datum of the data. Acceptable values for this field are: NAD83, NAD83HARN, NAD83NSRS2007, NAD83NA2011, NAD27, WGS84, User Specified, Not Provided, Unknown.</td>
</tr>
<tr>
<td>HorizontalAccuracy</td>
<td>R</td>
<td>The horizontal accuracy expressed in meters. This is accuracy of the positions of the data. Many times this is not provided, if so, enter &quot;Not Provided.&quot; Otherwise use actual value from Quality Assurance (QA) Report.</td>
</tr>
<tr>
<td>VerticalAccuracy</td>
<td>R</td>
<td>The vertical accuracy expressed in cm. This is open for different formats for reporting vertical accuracy. Preferred is cm RMSE (Root Mean Square Error). Please provide actual values from QA Report and indicate reporting format (e.g., RMSEz or Accuracyz at 95% confidence level).</td>
</tr>
<tr>
<td>VerticalDatum</td>
<td>R</td>
<td>Vertical datum of the data. Acceptable values for this field are: NAVD88, GRS80, NGVD29, WGS84, Local Tidal, MSL, MLLW, User Specified, Not Provided, Unknown. FEMA data should typically be in NAVD88.</td>
</tr>
<tr>
<td>Notes</td>
<td>A</td>
<td>Any items of interest, additional information not represented by previous attributes, etc. This information will be displayed in the public online viewer.</td>
</tr>
</tbody>
</table>
### Field Name | Required/Required if Applicable | Description
--- | --- | ---
ProductsAvailable | R | The types of data available.
PointSpacing | R | The distance between data points. Also, may be called Horizontal Resolution of Ground Sample Distance (GSD). Expressed in meters, actual.
CollectionDate | R | The actual date(s) of collection of the data. Enter range of dates, if applicable.
PointSpacingNumber | R | Just the number, in meters, of the distance between data points. If Point Spacing is Not Provided or Unknown, enter 9999.
VerticalRMSE | R | Just the number of the cm RMSE Vertical Accuracy of the data. If Vertical Accuracy is Not Provided or Unknown, enter 9999.
QL | R | The USGS quality level assigned to the data set. Numeric value from 1 to 9. 1-5 are the quality levels. 7 is bad or unusable data. 8 is bathymetry, 9 is Unknown.
InvID | R | USIEI ID number assigned by NOAA. Leave blank.
Owner | R | Agency responsible for maintaining record. Acceptable values for this field are: NOAA, USGS, and FEMA.
StartDate | A | Month and year of start of data collection. The day is not added for this field; however, the database will format the entry as MM/1/YYYY. If the month is unknown, input the first of Jan (Ex: 1/1/YYYY). If the year is unknown leave this field blank.
EndDate | A | Month and year of end of data collection. The day is not added for this field; however, the database will format the entry as MM/1/YYYY. If the month is unknown, input the 31st of Dec (Ex: 12/31/YYYY). If the year is unknown leave this field blank.
PointCloud | R | The classification status of the point cloud (Raw = Data before any classification done). Acceptable values for this field are: Classified, Raw and Classified, Unknown, Raw - Unclassified Only, Null.

#### 3.2 Table: S_Elev_Inv_Ar

<table>
<thead>
<tr>
<th>Field</th>
<th>R/A</th>
<th>Type</th>
<th>Length/Precision</th>
<th>Scale (SHP Only)</th>
<th>Joined Spatial / Lookup Tables or Domains</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEV_INV_ID</td>
<td>R</td>
<td>Text</td>
<td>25</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>ProjectName</td>
<td>R</td>
<td>Text</td>
<td>250</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>DataType</td>
<td>R</td>
<td>Text</td>
<td>20</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>CollectionYear</td>
<td>R</td>
<td>Short Integer</td>
<td>Default</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>ProjectStatus</td>
<td>R</td>
<td>Text</td>
<td>20</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Restrictions</td>
<td>R</td>
<td>Date</td>
<td>20</td>
<td>0</td>
<td>N/A</td>
</tr>
<tr>
<td>State</td>
<td>R</td>
<td>Text</td>
<td>2</td>
<td>D_State_Name</td>
<td></td>
</tr>
<tr>
<td>MissionID</td>
<td>A</td>
<td>Short Integer</td>
<td>Default</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>PointOfContact</td>
<td>R</td>
<td>Text</td>
<td>300</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
### 3.3 Topographic Breakline Topology Requirements

Topographic breaklines are optional and may be needed depending upon the planned procedures used to perform hydrologic and hydraulic modeling. When optional breaklines are produced, the following breakline topology rules must be followed for the applicable feature classes.

#### Table 8: Topographic Breakline Topology Rules

<table>
<thead>
<tr>
<th>Topology Filename (*_TOPOLOGY)</th>
<th>Spatial Layer</th>
<th>Topology Rule</th>
<th>Parameter</th>
<th>Minimum Cluster Tolerance (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HydraulicStruct</td>
<td>HydraulicStructure</td>
<td>Must Not Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>HydraulicStruct</td>
<td>HydraulicStructure</td>
<td>Must Not Self Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>HydrographicStruct</td>
<td>HydrographicFeature</td>
<td>Must Not Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>HydrographicStruct</td>
<td>HydrographicFeature</td>
<td>Must Not Self Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>HydrographicStruct</td>
<td>HydrographicFeature</td>
<td>Must not Overlap</td>
<td>CoastalShoreline</td>
<td>0.003</td>
</tr>
<tr>
<td>Coastal</td>
<td>CoastalShoreline</td>
<td>Must Not Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>Coastal</td>
<td>CoastalShoreline</td>
<td>Must Not Self Intersect</td>
<td></td>
<td>0.003</td>
</tr>
<tr>
<td>PondsLakes</td>
<td>Ponds_and_Lakes</td>
<td>Must Not Intersect</td>
<td>CoastalShoreline</td>
<td>0.003</td>
</tr>
<tr>
<td>PondsLakes</td>
<td>Ponds_and_Lakes</td>
<td>Must Not Self Intersect</td>
<td></td>
<td>0.003</td>
</tr>
</tbody>
</table>

This Document is Superseded. For Reference Only.
4. Field Survey Submittal Standards

See the Data Capture Guidance – Workflow Details document for information about field survey submittals, including photos, sketches, survey data, survey field notebooks, survey data naming conventions, and survey codes. Examples of the use of survey codes for different types of structures are also included.

5. Deliverables

This section provides information about the required deliverables for the regulatory and Flood Risk products. These deliverables are submitted to the MIP and are subsequently made available to the public by the Flood Map Service Center (MSC). The MIP Data Capture task submittals are outlined in Section 6.

Note that the file names for deliverable products specified in this section also apply to the corresponding files in deliverables that are submitted to the MIP as outlined in Section 6. For example, the file naming convention used for the deliverable FIS Report Portable Document Format (.PDF) file(s) also applies to the FIS Report Word file uploaded to the MIP.

Note also that these requirements apply to all new study deliverables, regardless of project age.

5.1 Preliminary Regulatory Products

The required documents that make up the preliminary regulatory products package are outlined in Section 6. They must be named using the product naming conventions outlined below for the final regulatory products and must be submitted in the digital format and directory structure indicated in Section 6.

Note that a separate standalone PDF of any 11”x17” FIRM Index page(s) must be submitted at Preliminary even though they are also included within the FIS report PDF.

5.2 Final Regulatory Products

The required documents that make up the final regulatory products package include the items listed below. They must be in the digital format and directory structure indicated in Section 6. All deliverables are submitted to the MIP and the MSC will review, publish, and distribute the data directly from the MIP.

5.2.1 Transmittal to Community CEO

A Transmittal Letter to the community CEO is sent by the MSC to each community, along with the final mapping products distributed by the MSC. Where possible, Post Office Box addresses
should be avoided to promote direct delivery to community officials. Refer to Appendix A of the Document Control Procedures Manual for the current letter templates.

There must be one transmittal letter for each community that will receive mapping data and/or a FIS from the MSC. The letter must include the current (as of the date the post-preliminary study deliverables are prepared) CEO’s name and address, the six-digit community identification number and the effective date. Each letter must be provided in Word format.

5.2.2 Inventory Worksheet for Each Community

The Inventory Worksheet is used by the MSC to update the MSC inventory and community information. Every community — including the Unincorporated Areas; the countywide or all-jurisdictions mapping number, if applicable; non-flood-prone and non-participating communities; and communities without a printed map but appearing in the FIS Report and/or FIRM Database — requires a separate Inventory Worksheet. This also includes communities that appear as part of a “Countywide” or “All Jurisdictions” study but are not part of the Physical Map Revision (PMR).

The Inventory Worksheet must be provided in Excel format (XLS/XLSX). The formatting of the standard Inventory Worksheet template must not be modified or otherwise altered. A sample Inventory Worksheet and directions on how to enter the community codes on the Inventory Worksheet can be found on the FEMA Templates and Other Resources page at FEMA.gov. Submitting the Inventory Worksheet to the MIP complies with the standard to submit the Community Map Action List and the Transmittal Form to the MSC.

5.2.3 FIS Report

The FIS Report must be submitted in digital format as an unsecure PDF file, with a resolution of 400 dots per inch (dpi). There must be one PDF file per FIS volume that is bookmarked as described in the Flood Insurance Study (FIS) Report Technical Reference.

The PDF version of the FIS Report must be named <ST_FIPS><PCOMM><VOLUME NUMBER>.pdf.

Examples:
24031CV000B.pdf – Single volume countywide FIS
120234V001A.pdf – Community FIS Volume 1 of 2
120234V002A.pdf – Community FIS Volume 2 of 2

5.2.4 FIRM Scans and World Files

FIRM Scans are the raster images of the FIRM panels and FIRM Index. The FIRM Scans must be georeferenced to the local projection (e.g., Universal Transverse Mercator or State Plane) used for hardcopy FIRM publication. The FIRM Scans of the FIRM panels must conform to the requirements of the FIRM Panel Technical Reference. The FIRM Scans of the FIRM Index must conform to the requirements of the Flood Insurance Study (FIS) Technical Reference if the FIRM Index is prepared in the new 11”x17” format. Note that a separate stand-alone georeferenced
FIRM Index scan must be submitted even if it is also included as a figure within the FIS Report. The FIRM Scans must be named according to the map number shown on the title block of the FIRM panel or FIRM Index. Color images must be 400 dpi, in 24-bit Portable Network Graphics (PNG) format. Black and white images must be 400 dpi, Group 4 compression, in Tagged Image File (TIF) format. All images must be accompanied by their world file.

Examples:

FIRM Scans

24031C0001A.png or 24031C0001A.tif – FIRM panel
24031CIND0A.png or 24031CIND0A.tif – FIRM Index

World files for the image files above:

24031C0001A.pgwx or 24031C0001A.tfwx – FIRM panel
24031CIND0A.pgwx or 24031CIND0A.tfwx – FIRM Index

5.2.5 FIRM Database

FIRM Databases must be submitted in Shapefile (SHP) format. The FIRM Database must conform to the requirements of the FIRM Database Technical Reference. FIRM Database Shapefiles must be named using the table names in the FIRM Database Technical Reference. Note that S_Transport_Ln is not required if orthophotos are submitted.

5.2.6 Orthophotos

The aerial images and any associated world files that were used to create the FIRM (if applicable) must be submitted if not previously submitted or if modified from those submitted under the Base Map Data Capture task. These data should be in the format in which the orthophotos were provided to the FEMA Mapping Partner, unless the appearance of any portion of the orthophotos shown on the FIRM was modified by re-projection, re-sampling, etc. In this case, only the modified orthophotos should be submitted.

5.2.7 Metadata File

Metadata files should be provided in XML format. The metadata file must conform to the requirements of the Metadata Profiles Technical Reference. The FIRM Database metadata file must be named <ST_FIPS><PCOMM>_<EFF_DATE>_metadata.xml 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 CID. EFF_DATE is the effective date of the study in YYYYMMDD format.

Examples:

24031C_20031217_metadata.xml – a countywide FIRM Database
241234_20031217_metadata.xml – a community FIRM Database
5.2.8 Flood Elevation Determination Docket (FEDD) File

A FEDD File must be submitted for each affected community, including the documents listed in the FEDD Checklist, per 44 CFR 67.3\(^1\). Rolled into this file are copies of all correspondence related to due process and the FEDD File Checklist, organized in chronological order. One PDF file is to be submitted for each community. The file must be named as follows: County\_state\_Community\_FEDD\_Effective\_Date. See the Post-Preliminary Deliverables Guidance document for additional information about the contents of the FEDD file.

Example:
Bergen\_NJ\_Alpine\_FEDD\_Effective\_Date

5.3 Final Flood Risk Products

The required documents that make up the final Flood Risk Products package include the Flood Risk Database (FRD) accompanied by metadata, Flood Risk Report (FRR), and Flood Risk Map (FRM). These products must be accompanied by an index that provides a cross reference to the communities covered in the FRD. These items must be submitted to the MIP in the digital format and directory structure indicated below and in Section 6.

5.3.1 Project ID

The Project ID should be a description that most effectively summarizes what area is covered by the project. The Project ID may be an 8-digit HUC identifying the watershed (strongly preferred for watershed based projects), a text description (e.g., the coastal flooding source studied – “Delaware Bay”), or a CID or FIPS code identifying the primary county or community mapped. The Project ID should be the same across all products for the Flood Risk Project. Note that it is good practice to limit the Project ID to 40 characters or less.

5.3.2 Flood Risk Database

Because the Flood Risk Database (FRD) datasets are quite large, the FRD data must be submitted in a series of .ZIP files that each contains data in one file format. FRD submittals must contain the following items:

- A .ZIP file containing the FRD files in Shapefile (SHP) format and the FRD metadata file in XML format.
- A .ZIP file containing the FRD in File Geodatabase (fGDB) format (including the Flood Depth and Analysis rasters in Environmental Systems Research Institute, Inc. (Esri) grid format) and the FRD metadata file in XML format.
- A .ZIP file containing the Flood Depth and Analysis rasters in Georeferenced Tagged Image File Format (GeoTIFF) format and the FRD metadata file in XML format.

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\(^1\) The correspondence noted above may not be applicable to all communities. For instance, communities that have adopted an automatic revision clause in their floodplain management ordinances may not receive a 90- or 30-day suspension letter.
The FRD must conform to the requirements of the Flood Risk Database Technical Reference.

The names of the .ZIP files identify the Project ID for the FRD, the volume number if applicable, the file format and the date the data are submitted to the MSC. The .ZIP files must be named <Project ID>_<Volume Number (if applicable)>_<File Format>_<YYYYMMDD>. The <Volume Number> is used only if there are multiple volumes; it is not needed for a single volume .ZIP file. The <File Format> is “GeoDatabase” for the fGDB, “ShapeFiles” for the SHP files, and “GeoTIFFs” for the GeoTIFFs. The <YYYYMMDD> is the date the data are submitted to the MSC.

The directory for an FRD must be named FRD_<Project ID>_<YYYYMMDD>. The FRD fGDB file must also be named FRD_<Project ID>_<YYYYMMDD>. FRD Shapefiles must be named using the table names in the Flood Risk Database Technical Reference. The GeoTIFF versions of the rasters must be named using the file naming convention in the Flood Risk Database Technical Reference.

Examples:

FRD_87654321_20130419.gdb – a watershed-wide FRD fGDB
FRD_87654321_GeoDatabase_20130419.zip – a single volume watershed-wide FRD fGDB .ZIP file
FRD_87654321_1_GeoDatabase_20130419.zip – volume 1 of a two-volume watershed-wide FRD fGDB .ZIP file
FRD_87654321_2_GeoDatabase_20130419.zip – volume 2 of a two-volume watershed-wide FRD fGDB .ZIP file
FRD_87654321_ShapeFiles_20130419.zip – a watershed-wide FRD shapefiles .ZIP file
FRD_87654321_GeoTIFFS_20130419.zip – a watershed-wide FRD GeoTIFFs .ZIP file
FRD_Delaware_Bay_20130419.gdb – a coastal FRD fGDB
FRD_Delaware_Bay_GeoDatabase_20130419.zip – a single volume coastal FRD fGDB .ZIP file
FRD_Delaware_Bay_1_GeoDatabase_20130419.zip – volume 1 of a two-volume coastal FRD fGDB .ZIP file
FRD_Delaware_Bay_2_GeoDatabase_20130419.zip – volume 2 of a two-volume coastal FRD fGDB .ZIP file
FRD_Delaware_Bay_Shapefiles_20130419.zip – a coastal FRD shapefiles .ZIP file
FRD_Delaware_Bay_GeoTIFFS_20130419.zip – a coastal FRD GeoTIFFs .ZIP file
FRD_42079C_20130419.gdb – a countywide FRD fGDB
FRD_42079C_GeoDatabase_20130419.zip – a single volume countywide FRD fGDB .ZIP file
FRD_42079C_1_GeoDatabase_20130419.zip – volume 1 of a two-volume countywide FRD fGDB .ZIP file
FRD_42079C_2_GeoDatabase_20130419.zip – volume 2 of a two-volume countywide FRD fGDB .ZIP file
FRD_42079C_ShapeFiles_20130419.zip – a countywide FRD shapefiles .ZIP file
FRD_42079C_GeoTIFFS_20130419.zip – a countywide FRD GeoTIFFs .ZIP file

5.3.3 FRD Metadata Files
FRD metadata files must be provided in XML format. The metadata file must conform to the Metadata Profiles Technical Reference. The FRD metadata file must be named <Project ID>_FRD_metadata.xml.
Examples:
87654321_FRD_metadata.xml – metadata for a watershed-wide FRD
Delaware_Bay_FRD_metadata.xml – metadata for a coastal FRD
42079C_FRD_metadata.xml – metadata for a countywide FRD

5.3.4 Flood Risk Report
The Flood Risk Report (FRR) must be submitted in digital format as an unsecure PDF file, with a resolution of 400 dpi. The FRR must also be uploaded to the MIP in Word format.

The PDF version of the FRR must be named FRR_<Project ID>_<Volume Number (if applicable)>_<YYYYMMDD>.pdf. The <Volume Number> is used only if the FRR requires multiple volumes; it is not needed for a single volume FRR. The <YYYYMMDD> is the date the data are submitted to the MSC. The FRR in Word format must also conform to the same naming convention.

Examples:
FRR_87654321_20130419.pdf – a single volume watershed-wide FRR
FRR_87654321_1_20130419.pdf – volume 1 of a two-volume watershed-wide FRR
FRR_87654321_2_20130419.pdf – volume 2 of a two-volume watershed-wide FRR
FRR_Delaware_Bay_20130419.pdf – a single volume coastal FRR
FRR_Delaware_Bay_1_20130419.pdf – volume 1 of a two-volume coastal FRR
FRR_Delaware_Bay_2_20130419.pdf – volume 2 of a two-volume coastal FRR
FRR_42079C_20130419.pdf – a single volume countywide FRR
FRR_42079C_1_20130419.pdf – volume 1 of a two-volume countywide FRR
FRR_42079C_2_20130419.pdf – volume 2 of a two-volume countywide FRR

5.3.5 Flood Risk Map

The Flood Risk Map (FRM) must be submitted in digital format as an unsecure PDF file, with a resolution of 400 dpi. The MXD file used to create the FRM must also be uploaded to the MIP.

The PDF version of the FRM must be named FRM_<Project ID>_<Sheet Number (if applicable)>_<YYYYMMDD>.pdf. The <Sheet Number> is used only if the FRM is too large or detailed to fit on a single sheet; it is not needed for a single page FRM. The <YYYYMMDD> is the date the data are submitted to the MSC. The FRM in MXD format must also conform to the same naming convention.

Examples:
FRM_87654321_20130419.pdf – a single page watershed-wide FRM
FRM_87654321_1_20130419.pdf – sheet 1 of a two-page watershed-wide FRM
FRM_87654321_2_20130419.pdf – sheet 2 of a two-page watershed-wide FRM
FRM_Delaware_Bay_20130419.pdf – a single page coastal FRM
FRM_Delaware_Bay_1_20130419.pdf – sheet 1 of a two-page coastal FRM
FRM_Delaware_Bay_2_20130419.pdf – sheet 2 of a two-page coastal FRM
FRM_42079C_20130419.pdf – a single page countywide FRM
FRM_42079C_1_20130419.pdf – sheet 1 of a two-page countywide FRM
FRM_42079C_2_20130419.pdf – sheet 2 of a two-page countywide FRM

5.3.6 Flood Risk Products Index

The index provides a listing of the communities covered in the FRD being submitted to the MSC. It is a table designed to ensure that all communities with data in the dataset are accurately represented on the MSC website. A sample Flood Risk Products Index form can be found on the FEMA Templates and Other Resources page at www.FEMA.gov. All regions, states, counties, CIDs and products associated with the Flood Risk Products submission should be listed.

The Transmittal Form must be provided in Excel format. The Index for the Flood Risk Dataset must be named FRD_<Project ID>_Index.

Example:
FRD_87654321_Index.xls
6. MIP Directory Structure and File Formats

A complete set of the most up-to-date engineering and mapping data associated with changes to FEMA maps must be captured in the MIP before their effective date. These data form the scientific and technical basis for the flood map and are needed in the future to address challenges or changes to the maps. This requirement replaces the previous requirement to submit a hardcopy Technical Support Data Notebook (TSDN) at the end of each mapping project.

Mapping Partners must submit data to the MIP in the file format(s) and in the MIP directory structure shown below for each of their assigned MIP Data Capture tasks. If a sub-folder is not applicable to a particular study, it does not need to be created. Only folders that contain data need to be created. Where multiple file formats are shown separated by a slash, either is acceptable (e.g., Word/PDF). When multiple file formats are required to be submitted, they are noted as such (e.g., Word and PDF). Note: See Appendix A for a list of file format acronyms used in this section.

The MIP was previously organized with pre-defined directories for each FEMA Region, state, county, community, MIP case number, assigned MIP tasks, and an auto-generated System ID# (Task SYSID). That folder structure will remain in place for legacy data. Data added to the MIP prior to June 2017 are considered to be legacy.

The current MIP Studies system includes folders that are organized by Fiscal Year, MIP project (case) number, Purchase, and Data Capture task as illustrated below in Figure 1. The folders associated with MIP Data Capture tasks are automatically generated in the MIP as the task upload button is used. These folders are considered task level folders. Folders at a lower level than the MIP Data Capture task level folders will need to be created by Mapping Partners, as applicable to the data being submitted. These folders should be created and populated with the data applicable to the task, named appropriately, zipped, and uploaded to the MIP. The uploaded data will subsequently be unzipped in the submitted folder structure on the MIP.

Note that the folder structure for each Data Capture task includes a Task Documentation folder that includes certification forms and a project narrative. Mapping Partners should complete and submit only one Certification of Completeness and one Certification of Compliance form when their work on a project is complete. Additionally, the Introduction/Project Overview and the Scope of Work do not need to be repeated in each Data Capture project narrative. They should be included in the project narrative that represents the first task completed under a project and in the final task submitted by the Mapping Partner. See the Data Capture General Guidance document for additional details on the Task Documentation folder.

In general, the spatial extents of a MIP Data Capture task will be defined by the purchase geography. If subfolders that represent subdivisions of the purchase geography would facilitate the Mapping Partner’s workflow and/or future use of the data (i.e. HUC8 basins within a larger HUC4 watershed-based project), the Mapping Partner should include logically named sub-folders.
Note that the directory structure shown in this section represents the structure below the Data Capture Tasks that are assigned in the MIP for each Purchase. Directory names are shown in bold for clarification.

The MIP is organized into J: and K: drives. Unless noted otherwise, all references in the following section are to the directory structure on the J: drive.

![MIP Directory Structure Diagram](image)

**Figure 1: MIP Directory Structure**

6.1 Discovery

Discovery Data Capture

Task Documentation

- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Discovery Metadata - .XML
Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Discovery_Preparation
- Project Team documents – Word/.PDF
- Community Profiles – Word/.PDF
- Project Plan – and/or Outreach Engagement Plan – Word/.PDF
- Draft Discovery Report – Word/.PDF
- Draft Discovery Map – .PDF
- Meeting materials, including but not limited to contact list, invitations, save the date emails, agenda, meeting minutes, attendance records, and meeting summary – Word/.PDF/.XLS/.XLXS
- Meeting Presentation or Outreach Materials – Word/.PDF/.PPT

Discovery_Meeting
- Meeting Invitations, save the date emails – Word/.PDF
- Meeting Agenda/Meeting Minutes – Word/.PDF
- Meeting Attendance Records – Word/.PDF/.XLS/.XLXS
- Meeting Summary – Word/.PDF
- Meeting Presentation or Outreach Materials – Word/.PDF/.PPT
- Project Charter – Word/.PDF

Post_Discovery
- Post-Discovery Meeting Notes – Word/.PDF
- Final Discovery Map – .PDF
- Final Discovery Report – Word/.PDF
- Community Engagement Plan – Word/.PDF
- Community Comments Received – Format as received
- SOW or Mapping Activity Statement (MAS) – Word/.PDF
- Geospatial Data Summary – Word/.PDF

Spatial_Files
- Community Contact List – (DCS_L_Mtg_POC) .DBF/.PGDB/.fGDB/.GML
- Source citations (DCS_L_Source_Cit) MDB/.DBF/.PGDB/.fGDB/.GML
- Political Areas (DCS_S_Pol_Ar) – .SHP/.PGDB/.fGDB/.GML
- Transportation (DCS_S_Transport_Ln) – .SHP/.PGDB/.fGDB/.GML
- Discovery Map (DCS_S_Discovery_Map) – .SHP/.PGDB/.fGDB/.GML
- Proposed FIRM Panel Index (DCS_S_Prp_FIRMPan) – SHP/PGDB/fGDB/GML
- HUC (DCS_S_HUC) – .SHP/.PGDB/.fGDB/.GML

Supplemental_Data
- All other relevant data collected during Discovery – Format as received.
Validation
- Any review documents and/or checklists used during the validation of the Discovery Data Capture submittals – Word/.XLS/.XLSX/.PDF.

Independent QA/QC
- Any documents related to independent reviews of Discovery Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF.

6.2 Base Map

Base Map Data Capture

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Certification of Compliance (if applicable) – .PDF
- Basemap and/or Orthoimagery Metadata – .XML

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/PDF.

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML

Supplemental_Data
- Any additional Base Map data collected for use in the preparation of this Flood Risk Project – Format as received.

Validation
- Any review documents and/or checklists used during the validation of the Base Map Data Capture submittals – Word/.XLS/.XLSX/.PDF.

Independent QA/QC
- Any documents related to independent reviews of Base Map Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF.

6.3 Topographic

Note that all New Topographic Data Capture deliverables must be submitted on media in folders organized by the folder structure shown below. The supporting documentation (i.e. the content of the Task Documentation, Correspondence, and Spatial_Files folders) must also be uploaded to the MIP.

Existing Topographic Data Capture deliverables may be able to be uploaded to the MIP. However, these data submittals may need to be submitted on media if they are too large for the
'Managed Upload' option. See the Data Capture General Guidance and MIP User Care for more information about data upload options.

New Topographic Data Capture

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Flight plans and logs – Word/.PDF
- Mapping Partner and independent QA/QC reports – Word/.PDF
- Photogrammetric Reports (if applicable) – Format as received
- Terrain Metadata – .XML
- Readme file specifying that the data are located in the Engineering Library

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Source

Raw_Point_Cloud_Data
- LiDAR Data – .LAS/.ASCII
- LiDAR Tile Index – .SHP/.PGDB/.fGDB

Classified_Point_Cloud_Data
- LiDAR Data – .LAS/.ASCII
- LiDAR Tile Index – .SHP/.PGDB/.fGDB

Breaklines
- 3D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 3D Breakline Tile Index – .SHP/.PGDB/.fGDB
- 2D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 2D Breakline Tile Index – .SHP/.PGDB/.fGDB

Bare_Earth_DEM
- DEMs – Esri grid/GeoTIFF/ASCII grid
- DEM Tile Index – .SHP/.PGDB/.fGDB

Contours
- Contours – .SHP/.PGDB/.fGDB/.DXF
- Contour Tile Index – .SHP/.PGDB/.fGDB
- Bathymetric Data – .SHP/.PGDB/.fGDB/.DXF
- Bathymetry Tile Index – .SHP/.PGDB/.fGDB

TIN
- Uncorrected TIN Files – Esri ArcGIS
- Terrain – Esri ArcGIS
- TIN Tile Index – .SHP/.PGDB/.fGDB
HDEM
- Hydrologically Corrected DEMs – Esri grid/GeoTIFF/ASCII grid
- Terrain – Esri ArcGIS
- HDEM Tile Index – .SHP/.PGDB/.fGDB

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML
- S_Elev_Inv_Ar spatial elevation inventory file – .SHP/.PGDB/.fGDB/.GML
- Source Index – .SHP/.PGDB/.fGDB/.GML

Supplemental_Data
- Any additional elevation data collected for use in the preparation of this Flood Risk Project – Format as received

Validation of New Topographic Data
- Any review documents and/or checklists used during the validation of New Topographic Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC of New Topographic Data
- Any documents related to independent reviews of New Topographic Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

Existing Topographic Data Capture
Note that if existing (gathered) elevation data are used, Mapping Partners only need to submit the bare earth data used for the Flood Risk Project and documentation for the data. The raw point cloud and other LiDAR project components not used for the project do not need to be submitted. Gathered LiDAR data outside the project area do not need to be submitted.

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Terrain Metadata – .XML
- Readme file specifying that the data are located in the Engineering Library

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Source
Raw_Point_Cloud_Data
- LiDAR Data – .LAS/.ASCII
- LiDAR Tile Index – .SHP/.PGDB/.fGDB

Classified_Point_Cloud_Data
- LiDAR Data – .LAS/.ASCII
- LiDAR Tile Index – .SHP/.PGDB/.fGDB
**Breaklines**
- 3D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 3D Breakline Tile Index – .SHP/.PGDB/.fGDB
- 2D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 2D Breakline Tile Index – .SHP/.PGDB/.fGDB

**Bare_Earth_DEM**
- DEMs – Esri grid/GeoTIFF/ASCII grid
- DEM Tile Index – .SHP/.PGDB/.fGDB

**Contours**
- Contours – .SHP/.PGDB/.fGDB/.DXF
- Contour Tile Index – .SHP/.PGDB/.fGDB
- Bathymetric Data – .SHP/.PGDB/.fGDB/.DXF
- Bathymetry Tile Index – .SHP/.PGDB/.fGDB

**TIN**
- Uncorrected TIN Files – Esri ArcGIS
- Terrain – Esri ArcGIS
- TIN Tile Index – .SHP/.PGDB/.fGDB

**HDEM**
- Hydrologically Corrected DEMs – Esri grid/GeoTIFF/ASCII grid
- Terrain – Esri ArcGIS
- HDEM Tile Index – .SHP/.PGDB/.fGDB

**Spatial_Files**
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML
- Source Index – .SHP/.PGDB/.fGDB/.GML

**Supplemental_Data**
- Any additional elevation data collected for use in the preparation of this Flood Risk Project – Format as received

**Validation of Existing Topographic Data**
- Any review documents and/or checklists used during the validation of Existing Topographic Data Capture submittals – Word/.XLS/.XLSX/.PDF

**Independent QA/QC of Existing Topographic Data**
- Any documents related to independent reviews of Existing Topographic Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

**6.4 Terrain**
Terrain Data Capture deliverables may be able to be uploaded to the MIP. However, these data submittals may need to be submitted on media if they are too large for the ‘Managed Upload’ option. See the Data Capture General Guidance and MIP User Care for more information about data upload options.
Terrain Data Capture

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Terrain Metadata – .XML
- Readme file specifying that the data are located in the Engineering Library

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Final

Breaklines
- 3D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 3D Breakline Tile Index – .SHP/.PGDB/.fGDB
- 2D Breaklines – .SHP/.PGDB/.fGDB/.DXF
- 2D Breakline Tile Index – .SHP/.PGDB/.fGDB

Bare_Earth_DEM
- DEMs – Esri grid/GeoTIFF/ASCII grid
- DEM Tile Index – .SHP/.PGDB/.fGDB

Contours
- Contours – .SHP/.PGDB/.fGDB/.DXF
- Contour Tile Index – .SHP/.PGDB/.fGDB
- Bathymetric Data – .SHP/.PGDB/.fGDB/.DXF
- Bathymetry Tile Index – .SHP/.PGDB/.fGDB

TIN
- Uncorrected TIN Files – Esri ArcGIS
- Terrain – Esri ArcGIS
- TIN Tile Index – .SHP/.PGDB/.fGDB

HDEM
- Hydrologically Corrected DEMs – Esri grid/GeoTIFF/ASCII grid
- Terrain – Esri ArcGIS
- HDEM Tile Index – .SHP/.PGDB/.fGDB

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML
- Source Index – .SHP/.PGDB/.fGDB/.GML

Supplemental_Data
- Any additional elevation data collected for use in the preparation of this Flood Risk Project – Format as received
Validation
- Any review documents and/or checklists used during the validation of Terrain Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Terrain Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.5 Survey
Survey Data Capture

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Certification of Compliance (if applicable) – .PDF
- Survey Metadata – .XML

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Photos
- Digital Photographs – .JPEG/.TIFF/.BMP

Sketches
- Digital Sketches – .JPEG/.TIFF/.BMP/.PDF

Survey_Data

Supplemental_Data
- Any additional Survey data collected for use in the preparation of this Flood Risk Project (e.g., survey notebooks, etc.) – Format as received

As-Built
- As-Built Data – Format as received

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML

Validation
- Any review documents and/or checklists used during the validation of Survey Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Survey Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF
6.6 Hydrology

Hydrology Data Capture

Task Documentation
- Hydrology Report – Word and .PDF
- Draft FIS Section 5.1 – Word and .PDF
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Certification of Compliance (if applicable) – .PDF
- Hydrology Metadata – .XML
- Large Scale Automated Engineering Report or Base Level Engineering Report (if applicable) – Word and .PDF

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Watershed_Name

Simulations
- Model input and output files – Native format
- Readme file explaining contents of each named file – .TXT

Supplemental_Data
- Database file(s) and/or spatial files such as data and analyses for stream and rainfall gages and computations for regional regression equations such as output from USGS PeakFQ, NFF or NSS computer programs – Native format
- Any additional Hydrology data collected for use in the preparation of this Flood Risk Project – Format as received

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML

Note that Hydrology data submitted for Large Scale Automated Engineering, Base Level Engineering, or Levee analyses may not include all FIRM Database files listed in the FIRM Database Technical Reference Table 2.

Validation
- Any review documents and/or checklists used during the validation of Hydrology Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Hydrology Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.7 Hydraulics

Hydraulics Data Capture

Task Documentation
Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Stream_Name (Station)

Simulations
- Model input and output files for all flood frequencies required by the MAS and floodway analysis – Native format
- Model input and output files for levee analysis for the 1-percent-annual-chance flood including, if applicable: de-accredited left levee and hold right levee; de-accredited right levee and hold left levee; both levees in place; and both levees de-accredited (for floodway analysis) – Native format
- Model input and output files for levee analyses for all flood frequencies required by the MAS [e.g., the 10-, 4-, 2-(normally with levees in place), 1-, 0.2- (normally without levees) percent-annual-chance floods] – Native format
- Readme file explaining contents of each named file – .TXT

Profiles
- Profiles – RASPLT .MDB/.DXF/.DWG

FWDT
- Floodway Data Tables – .MDB/.XLS/.XLSX/.DBF
- Flood Hazard Data Tables – .MDB/.XLS/.XLSX/.DBF

Supplemental_Data
- Database file(s) and/or spatial files such as high water mark data for model calibration – Native format
- Zone A backup files – Native format
- Any additional Hydraulics data collected for use in the preparation of this Flood Risk Project – Format as received

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML

Note that the submitted FIRM Database files must match the model output with respect to floodplain boundaries, cross sections, and water surface elevations and their precision. Unlike in the regulatory data submittals, floodplain boundaries and cross sections should not be cartographically modified, and the data may not necessarily agree exactly with the regulatory FIRM, FIRM Database, flood profiles, and Floodway Data Tables.
Note also that Hydraulics data submitted for Large Scale Automated Engineering, Base Level Engineering, or Levee analyses may not include all FIRM Database files listed in the FIRM Database Technical Reference Table 2.

Validation
- Any review documents and/or checklists used during the validation of Hydraulics Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Hydraulics Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.8 Alluvial Fan

Alluvial Fan Data Capture

Task Documentation
- Alluvial Fan Technical Report (including Stage 1, Stage 2, and Stage 3 documentation) – Word and .PDF
- Draft FIS Section 5.4 – Word and .PDF
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Certification of Compliance (if applicable) – .PDF
- Alluvial Fan Metadata – .XML

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Stream_Name

Simulations
- Model input and output files – Native format
- Readme file explaining contents of each named file – .TXT

Profiles
- Profiles – RASPLLOT .MDB/.DXF/.DWG

Hydraulic_Databases
- Database File(s) – Native format

FAN_Program_Files
- Model input and output files – Native format

Supplemental_Data
- Any additional spatial or non-spatial Alluvial Fan data collected for use in the preparation of this Flood Risk Project – Format as received

Spatial_Files
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML
Note that the submitted FIRM Database files must match the model output with respect to floodplain boundaries, cross sections, and water surface elevations and their precision. Unlike in the regulatory data submittals, floodplain boundaries and cross sections should not be cartographically modified, and the data may not necessarily agree exactly with the regulatory FIRM, FIRM Database, flood profiles, and Summary of Alluvial Fan Analyses and Results of Alluvial Fan Analyses tables.

Validation
- Any review documents and/or checklists used during the validation of Alluvial Fan Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Alluvial Fan Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.9 Coastal
Coastal Data Capture

Water_Body_Name
Project_Name

Task Documentation
- ReadMe – simple text document describing the types of documents in the folder and the folder structure
- White Papers, Technical Memos, etc. related to Coastal Analyses and Mapping – Word or .PDF
- Draft FIS Coastal Hydrology and Coastal Hydraulic Analysis Sections (typically 5.1 and 5.3) – Word and .PDF
- FIS Graphics (e.g., SWEL contour map, transect location map) – .PDF/.JPEG
- FIS Tables – .MDB/.XLS/.XLSX/.DBF
- FIS Coastal Profiles – .PDF/.JPEG and .DXF/.DWG
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Certification of Compliance (if applicable) – .PDF
- Coastal Metadata – .XML

Coastal_IDS_1
- Final IDS 1Report – .PDF
- IDS 1 QA/QC Tracking forms – Word or .XLS/.XLSX

Coastal_IDS_2
- Final IDS 2Report – .PDF
- IDS 2 QA/QC Tracking forms – Word or .XLS/.XLSX

Coastal_IDS_3
- Final IDS 3Report – .PDF
- IDS 3 QA/QC Tracking forms – Word or .XLS/.XLSX
Coastal_IDS_4
- Final IDS 4 Report – .PDF
- IDS 4 QA/QC Tracking forms – Word or .XLS/.XLSX

Coastal_IDS_5
- Final IDS 5 Report – .PDF
- IDS 5 QA/QC Tracking forms – Word or .XLS/.XLSX

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Stillwater_Data

Tidal Water Level Data
- ReadMe – simple text file describing organization and naming convention of files within this directory including data source, units and datum for all raw data files – .PDF/.TXT
- Graphic showing location and names of stations from which tidal water level data was retrieved – .PDF/.JPEG
- Historical hourly water level data for each station from which tidal water level data was retrieved – .MDB/.XLS/.XLSX/.DBF
- Historical annual maximum water level data for each station from which tidal water level data was retrieved – .MDB/.XLS/.XLSX/.DBF

High Water Mark Data
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Graphic showing location and names of locations where high water mark data was retrieved – .PDF/.JPEG
- High water mark data from each location from which high water mark data was retrieved – .MDB/.XLS/.XLSX/.DBF
- If available, any notes or documentation on methods applied to obtain the high water mark data or the quality of individual data points. – .PDF

Stillwater_Analysis

Stillwater_Analysis_Approach
- Narrative of approach used to determine water levels for use in performing the FIS (e.g., 2D surge modeling with JPM-OS, 2D modeling for multi-decadal hindcast, desktop analysis for multi-decadal hindcast, etc.) – .PDF

Desktop_Hydro_Analysis_Name
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- One fully worked example demonstrating inputs, analysis technique and outputs used for the analysis of water levels – .PDF
- Input and output data referenced in the fully worked example – Native format

This Document is Superseded. For Reference Only.
Complete analysis input and output for all stations within the study – Native format

**2D_Hydro_Modeling_Analysis_Name**

**Hydro_Model_Geometry**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Final model mesh including nodal elevations, roughness coefficients and all other static boundary conditions assigned. – Native Format
- Final DEM of topography and bathymetry used in model mesh creation – .SHP/.PGDB/.fGDB/.GML

**Tidal_Calibration**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Model input files needed to reproduce final tidal simulations – Native format
- Model output files from final tidal simulations – Native format

**Hydro_Historic_Storm_Verification**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Model input files needed to reproduce final storm verification simulations – Native format
- Model output files from final storm verification simulations – Native format

**Hydro_Production_Runs**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Model inputs needed to reproduce time varying water level elevations throughout the model domain for each event modeled – Native format
- Model output needed to reproduce results from the statistical analysis – Native format
- Optional additional output from analysis – Native format

**Hydro_Statistical_Analysis**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- One fully worked example demonstrating inputs, analysis technique and outputs used to calculate the 0.2% and 1%-annual-chance water levels – .PDF
- Input and output data referenced in the fully worked example – Native format

**Hydro_Supplemental_Data**
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Any additional data used in the water level modeling of this Flood Risk Project – Native format
Hydro_Spatial_Files
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Final 0.2% and 1%-annual-chance surge surfaces used as input for the transect based wave analysis – .SHP/.PGDB/.fGDB/.GML

Wave_Analysis
Wave_Analysis_Approach
- Narrative of approach used to determine regional wave conditions for use in performing the FIS (e.g., 2D wave modeling within JPM-OS, 2D wave modeling for multi-decadal hindcast, desktop analysis for multi-decadal hindcast, etc.). Includes explanation of how different ocean/regional/coastal scale wave domains were linked. – .PDF

Desktop_Wave_Analysis_Name
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- One fully worked example demonstrating inputs, analysis technique and outputs used for the analysis of regional wave conditions – .PDF
- Input and output data referenced in the fully worked example – Native format
- Final analysis output for all locations within the study area – Native format

2D_Wave_Modeling_Analysis_Name
Wave_Model_Geometry
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files. Includes explanation of how different ocean/regional/coastal scale wave domains were linked – .PDF/.TXT
- Final model mesh including nodal elevations, roughness coefficients and all other static boundary conditions assigned. – Native format

Wave_Historic_Storm_Verification
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files. Includes explanation of how different ocean/regional/coastal scale wave domains were linked – .PDF/.TXT
- Model input files needed to reproduce final storm verification simulations – Native format
- Model output files from final storm verification simulations – Native format
- Wave data used to compare with model results from the verification runs – Native format

Wave_Production_Runs
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files. Includes explanation of how different ocean/regional/coastal scale wave domains were linked – .PDF/.TXT

This Document is Superseded.
For Reference Only.
- Model inputs needed to reproduce time varying wave conditions throughout the model domain for each event modeled – Native format
- Model output needed to reproduce results from the statistical analysis – Native format
- Final analysis output for all locations within the study area – Native format
- Data necessary to develop the final 1-percent- and 0.2-percent- annual-chance wave conditions – Native format

**Wave_Supplemental_Data**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Any additional data used in the modeling of offshore wave conditions for this Flood Risk Project – Native format

**Transect_Based_Wave_Hazard_Analysis**

- Narrative of approach used to determine wave hazards – .PDF
- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT

**Wave_Statistical_Analysis_Event**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- One fully worked example demonstrating inputs, analysis technique and outputs used to determine the input wave conditions for use within the transect based wave analysis – .PDF
- Input and output data referenced in the fully worked example – Native format

**Wave_Hazard_Model_Name**

**Simulations**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Model/calculation input and output files for wave hazard analyses – Native format
- For response-based studies, one fully worked example demonstrating inputs, analysis technique and outputs used to determine the Total Water Level – .PDF
- Wave Envelope Files – .PDF and .DXF or spatially compatible file

**Spatial_Files**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Field survey, land-use and other reference files for 1D wave calculations – Native format
- Topographic and bathymetric datasets if different from 2D_Hydro_Modeling_Analysis_Name\Hydro_Model_Geometry – .SHP/.PGDB/.fGDB/.GML
- Spatial files by model including Transect Layout file – .SHP/.PGDB/.fGDB/.GML

**Supplemental_Data**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Any additional data used in the modeling of wave hazards for this Flood Risk Project – Native format

**Spatial_Files**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.PGDB/.fGDB/.GML

**Coastal_Flood_Risk_Spatial_Files**

- ReadMe – simple text file describing organization and naming convention of files within this directory including units and datum for all raw data files – .PDF/.TXT
- Final coastal Flood Risk Products produced for the study (i.e. depth grids, erosion hazard, etc.) – .SHP/.PGDB/.fGDB/.GML
- Maps of coastal final Flood Risk Products produced for the study. – .PDF

**Validation**

- Any review documents and/or checklists used during the validation of Coastal Data Capture submittals – Word/.XLS/.XLSX/.PDF

**Independent QA/QC**

- Any documents related to independent reviews of Coastal Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

### 6.10 Levee

**Levee Analysis and Mapping (LAMP) Data Capture**

**Levee System ID_Levee Name**

**Task Documentation**

- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF

**Correspondence**

- Local Levee Partnership Team (LLPT) meeting minutes; LLPT meeting invitation letters; Natural Valley Concurrence Letters; emails; transmittals; memoranda; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

**LAMP_Package**

- LAMP Report – Word/.PDF
- LAMP analysis – Native format
- LAMP identification and LAMP Plan preparation materials – Native format

Supplemental_Data
- Any additional supporting documentation collected or developed in support of a LAMP plan and path forward – Native format

Validation of LAMP
- Any review documents and/or checklists used during the validation of LAMP Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC of LAMP
- Any documents related to independent reviews of LAMP Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

Levee Data Capture

Levee System ID_Levee Name
Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF

Correspondence
- PAL agreements; Natural Valley Concurrence Letters submitted outside the formal LAMP process; emails; transmittals; memoranda; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

65.10 Data Package
- Certified data submittals associated with levee accreditation and LAMP scenarios; Operations and Maintenance plans – Word/.PDF

Supplemental_Data
- Any additional supporting documentation such as PAL research or non-certified engineering data – Native format

Validation of Levee
- Any review documents and/or checklists used during the validation of Levee Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC of Levee
- Any documents related to independent reviews of Levee Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.11 Floodplain Mapping

Floodplain Mapping Data Capture
Task Documentation
- Draft FIS Report – Word and .PDF
- FIS Tables – .MDB/.XLS/.XLSX/.DBF
- FIS text overflow for Principal Flood Problems and Special Considerations (if necessary)
  - .TXT
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Floodplain/Redelineation Metadata – .XML
- Large Scale Automated Engineering Report or Base Level Engineering Report (if applicable) – Word and .PDF

**Correspondence**
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

**Base_Map**

**Spatial_Files**
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP/.GDB/.fGDB/.GML

Note that Floodplain Mapping data submitted for Large Scale Automated Engineering, Base Level Engineering, or Levee analyses may not include all FIRM Database files listed in the FIRM Database Technical Reference Table 2.

**Topographic_Data**
- Topographic Data Files (if not submitted under Terrain Capture) – .LAS/.ASCII/.SHP (2D or 3D)/.PGDB/.fGDB/.DXF/Esri Grid/.GeoTIFF/.ASCII Grid/Esri ArcGIS

**Supplemental_Data**
- Rectified effective maps and any other data that was used to re-create effective profiles and delineations – Native format

**Validation**
- Any review documents and/or checklists used during the validation of Floodplain Mapping Data Capture submittals – Word/.XLS/.XLSX/.PDF

**Independent QA/QC**
- Any documents related to independent reviews of Floodplain Mapping Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

### 6.12 Draft FIRM Database

**Draft FIRM Database Data Capture**
- FIRM Database Draft Metadata – .XML
- FIS text overflow for Principal Flood Problems and Special Considerations (if necessary) – .TXT
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .
Data Capture Technical Reference

- Certification of Completeness (if applicable) – .PDF

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical
  issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Validation
- Any review documents and/or checklists used during the validation of Draft FIRM Database
  Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Draft FIRM Database Data Capture
  submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.13 Preliminary
Note that currently the Database Verification Tool (DVT) requires all data used for verification
(i.e., SHP files and metadata) to be in the highest level folder.

Produce Preliminary Products Data Capture
- FIRM Database Preliminary Metadata – .XML
- FIS text overflow for Principal Flood Problems and Special Considerations (if necessary) – .TXT
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP

Task Documentation
- Certification of Completeness (if applicable) – .PDF
- Project Charter (if signed after Discovery) – .PDF

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical
  issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

RFIRM
- Preliminary FIRM Panel Images – .PDF
- Preliminary FIRM Index Images – .PDF

FIS
- Preliminary FIS Report – .PDF

Prelim_Letters
- Preliminary or Revised Preliminary issuance letters – Word

SOMA
- Preliminary SOMA documents – Word
Pre and Post Quality Review (QR)3

- Pre-QR3 Submission Questionnaire and Self-Certification – .PDF
- Post-QR3 Confirmation and Self-Certification forms. – .PDF

QR3

- QR3 and SOMA Checklists – .XLS/.XLSX/Word/.PDF

Distribute Preliminary Products

- Distribute Preliminary Products receipts – .PDF

Validation

- Any review documents and/or checklists used during the validation of Produce Preliminary Products Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC

- Any documents related to independent reviews of Produce Preliminary Products Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.14 Outreach

FIPS (Federal Information Processing Standard code)

Task Documentation

- Certification of Completeness (if applicable) – .PDF
- Project Narrative – Word/.PDF

Correspondence

- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

CCO Meeting Data Capture

- CCO Meeting agenda – Word/.PDF
- CCO Meeting invitations, save the date emails – Word/.PDF
- CCO Meeting minutes – Word/.PDF
- CCO Meeting attendance record – Word/.XLS/.XLSX/.PDF
- CCO Meeting presentation file (if applicable) – .PDF/.PPT

Feedback Data Capture

Feedback_Type

- Recorded feedback that occurs outside of the Appeal period – Word/.PDF
- Recorded feedback or comments provided by community(s) at community outreach meeting(s) or submitted separately during a review period (e.g. 30-day proposed model review, 30-day review of Draft FIRM [work map] and draft model) – Word/.PDF
- Technical files provided by community(s) at community outreach meeting(s) or submitted separately during a review period (e.g. 30-day proposed model review, 30-day review of Draft FIRM [work map] and draft model) – Format as provided

This Document is Superseded. For Reference Only.
Event Data Capture

**Event_Type**
- Outreach meeting or event file(s) to include meeting invitations, meeting agenda, meeting minutes, attendance records, and/or presentation materials – Word/.XLS/.XLSX/.PDF/.PPT
- Letters and other materials developed for notification to CEO of 30-day proposed model review (SID 620) – Word/.PDF
- Letters and other materials developed for notification to CEO of 30-day review of Draft FIRM (work map) and draft model (SID 621) – Word/.PDF
- Post-preliminary outreach materials (e.g. radio, television, etc.) (SID 622) – Word/.PDF

6.15 Due Process

FIPS

**Task Documentation**
- Certification of Completeness (if applicable) – .PDF
- Project Narrative – Word/.PDF

**Correspondence**
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

QR4 Part 1
- QR4 Checklist Part 1 – .XLS/.XLSX

**Appeal Start Docket Approval**
- Any review documents and/or checklists used during the validation of the Appeal Start docket (optional) – Word/.XLS/.XLSX

**Initiate Appeal/Comment**
- Outreach meeting file(s) to include meeting invitations, meeting agenda, meeting minutes, attendance records, and/or presentation materials – Word/.XLS/.XLSX/.PDF/PPT
- Proposed Federal Register notice – Word/.PDF
- Published Federal Register notice – .PDF
- Newspaper notice – Word/.PDF
- 90-day appeal start letters – Word/.PDF

QR4 Part 2
- QR4 Checklist Part 2 – .XLS/.XLSX

**Record Appeal/Comment**
- Recorded comments or appeal data submitted by community(s) – Format as provided
- Appeal acknowledgement letters – Word/.PDF
- Appeal resolution letters – Word/.PDF

**Validation for Record Appeal/Comment**
- Any review documents and/or checklists used during the validation of Record Appeal/Comment submittals (optional) – Word/.XLS/.XLSX

This Document is Superseded. For Reference Only.
6.16 Final Map Production and Distribution

Note that currently the DVT requires all data used for verification (i.e. .SHP files and metadata) to be in the highest level folder.

Develop Final Mapping Products Data Capture

- FIRM Database Final Metadata – .XML
- FIS text overflow for Principal Flood Problems and Special Considerations (if necessary) – .TXT
- FIRM Database files as described in the FIRM Database Technical Reference Table 2 – .SHP

Correspondence

- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

RFIRM

- Final georeferenced FIRM Panel Images – PNG + PGW or PGWX/TIF + .TFW or .TFWX
- Final georeferenced FIRM Index Image(s) – PNG + PGW or PGWX/TIF + .TFW or .TFWX

Ortho_photos

- Orthoimagery used as base map for FIRMs (if not previously submitted or modified from a Base Map submittal) – BIL/BIP/GeoTIFF/MRSID/PNG + .PGW or .PGWX/Georeferenced JPEG/TIF – .TFW – .TFWX/.ECW/.JPEG2000

FIS

- Final FIS Report – Word and Bookmarked .PDF
- Profiles – RASPLT .MDB/.DXF/.DWG

MSC_Paperwork

- Transmittal Letters – Word
- Inventory Worksheets – .XLS/.XLSX

MXD

- FIRM Panel and FIRM Index MXD Files – .MXD

QR5

- QR5 Checklist – .XLS/.XLSX
- QR5 Shapefile(s) – .SHP
- QR5 Passing Report – Word/.PDF

QR7

- QR7 Checklist – .XLS/.XLSX
- QR7 Passing Report – Word/.PDF

LFD Docket

- LFD Questionnaire – .XLS/.XLSX
- LFD Verification Form – .XLS/.XLSX
- Final Flood Hazard Determination (FHD) table (i.e. draft final LFD notice) – Word/.PDF
- LFD letter(s) – Word/.PDF
- Final SOMA – Word/.PDF

QR6
- QR6 Checklist – .XLS/.XLSX

LFD Approval
- Any review documents and/or checklists used during the validation of the LFD docket (optional) – Word/.XLS/.XLSX

Finalize LFD
- LFD letters sent to community(s) – Word/.PDF
- Published Federal Register notice – .PDF
- Return receipt for certified mail for LFD letters – .PDF
- Final SOMA – Word/.PDF

Suspension Notification Letters
- 90-Day letters sent to community(s) – Word/.PDF
- Return receipt for certified mail for 90-Day letters – .PDF
- 30-Day letters sent to community(s) – Word/.PDF
- Return receipt for certified mail for 30-day letters – .PDF

QR8
- QR8 Checklists – .XLS/.XLSX

Prepare Revalidation
- Draft Revalidation letters to be sent to community(s) – Word/.PDF

Review Revalidation
- Revalidation checklist(s) – Word/.XLS/.XLSX

Revalidation Approval
- Any review documents and/or checklists used during the validation of Revalidation submittals (optional) – Word/.XLS/.XLSX

Distribute Revalidation
- Revalidation letters sent to community(s) – Word/.PDF

FEDD File Data Capture
- FEDD files (one file per community) – .PDF
- FEDD Checklist – .XLS/.XLSX
- Return receipt for certified mail for 90-day appeal start letters – .PDF
- Newspaper affidavit/tear sheet – .PDF
TSDN Data Capture
- Final Project Narrative – Word
- Certification of Completeness – .PDF
- Certification of Compliance – .PDF
- TSDN Checklist – .XLS/.XLSX/Word/.PDF
- Other checklists (if applicable) – .XLS/.XLSX/Word/.PDF
- Project Charter (if signed after Discovery) – .PDF

Validation
- Approved FEDD File Checklist –.XLS/.XLSX

6.17 Flood Risk Products Data
Note that an identical folder structure is provided for Draft and Final Flood Risk Products data submittals. Draft data uploads are only required if applicable.

Flood Risk Products Data Capture

Project ID

Draft

Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Large Scale Automated Engineering Report or Base Level Engineering Report (if applicable) – Word and .PDF

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Flood_Risk_Datasets

CSLF
- Input and output data associated with the Changes Since Last FIRM (CSLF) dataset (not the actual CSLF dataset which is submitted with the FRD) – Native format

FDAG
- Input and output data associated with the Flood Depth and Analysis Grids (FDAG) dataset (not the actual grids which are submitted with the FRD) – Native format

FRA
- Input and output data associated with the Flood Risk Assessment (FRA) dataset, which include Hazus data (not the actual Risk Assessment dataset which is submitted with the FRD) – Native format (.hpr files for Hazus data)
AOMI
- Input and output data associated with the Areas of Mitigation Interest (AOMI) dataset (not the actual AOMI dataset which is submitted with the FRD) – Native format

Flood_Risk_Products
FRD
- .ZIP file containing FRD and accompanying metadata file – SHP and .XML
- .ZIP file containing FRD and accompanying metadata file – FDB and .XML
- .ZIP file containing Flood Depth and Analysis rasters and accompanying metadata file – GeoTIFF and .XML

FRR
- Flood Risk Report – Word and .PDF

FRM
- Flood Risk Map - .PDF and .MXD

Supplemental_Data
- Input and output data associated with the FRD (not the actual FRD which is submitted with the final mapping data) – Native format
- Input and output data associated with the Flood Risk Report (not the actual FRR which is submitted with the FRD) – Native format
- Input and output data associated with the Flood Risk Map (not the actual FRM which is submitted with the FRD) – Native format
- Any additional data used to assist in the preparation of this Flood Risk Project – Native format

Final
Task Documentation
- Project Narrative – Word
- Certification of Completeness (if applicable) – .PDF
- Large Scale Automated Engineering Report or Base Level Engineering Report (if applicable) – Word and .PDF

Correspondence
- Letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

Flood_Risk_Datasets
CSLF
- Input and output data associated with the Changes Since Last FIRM dataset (not the actual CSLF dataset which is submitted with the FRD) – Native format

FDAG
- Input and output data associated with the Flood Depth and Analysis Grids dataset (not the actual grids which are submitted with the FRD) – Native format
FRA
- Input and output data associated with the Flood Risk Assessment dataset, which include Hazus data (not the actual Risk Assessment dataset which is submitted with the FRD) – Native format (.hpr files for Hazus data)

AOMI
- Input and output data associated with the Areas of Mitigation Interest dataset (not the actual AOMI dataset which is submitted with the FRD) – Native format

Flood_Risk_Products
FRD
- .ZIP file containing FRD and accompanying metadata file – SHP and .XML
- .ZIP file containing FRD and accompanying metadata file – fGDB and .XML
- .ZIP file containing Flood Depth and Analysis rasters and accompanying metadata file – GeoTIFF and .XML

FRR
- Flood Risk Report – Word and .PDF

FRM
- Flood Risk Map - .PDF and .MXD

Supplemental_Data
- Input and output data associated with the FRD (not the actual FRD which is submitted with the final mapping data) – Native format
- Input and output data associated with the Flood Risk Report (not the actual FRR which is submitted with the FRD) – Native format
- Input and output data associated with the Flood Risk Map (not the actual FRM which is submitted with the FRD) – Native format
- Any additional data used to assist in the preparation of this Flood Risk Project – Native format

Validation
- Any review documents and/or checklists used during the validation of Flood Risk Products Data Capture submittals – Word/.XLS/.XLSX/.PDF

Independent QA/QC
- Any documents related to independent reviews of Flood Risk Products Data Capture submittals (if applicable) – Word/.XLS/.XLSX/.PDF

6.18 General Data
Due to the flexible nature of the General purchase, additional folders may be created by the user as necessary.

General Data Capture

Project_Name_Project_ID
Task Documentation
6.19 Project Correspondence

Using the MIP Tools & Links >Data Upload >Load Studies Data Artifacts interface, the following information may be uploaded to the MIP K: drive. These files will be stored in folders under the project number on the K: drive.

These files must be submitted as a .ZIP file for each of the data categories organized in the following directory structure.

**Correspondence**

**FIPS**
- Any additional supporting correspondence relevant to the Flood Risk Project not previously submitted during Data Capture. These may include letters; transmittals; memoranda; general status reports and queries; SPRs; technical issues; direction by FEMA; and internal communications, routing slips, and notes – Word/.PDF

**FBS Reports**
- Floodplain Boundary Standard (FBS) Self-Certification Document (this document must be submitted within 30 days after issuance of preliminary maps). The file must be named as follows: County or Community_State_FBS_Preliminary.
- Revised FBS Self-Certification Document (this document must be submitted within 30 days after issuance of the Letter of Final Determination (LFD) if floodplain boundaries were revised during the post-preliminary phase). The file must be named as follows: County or Community_State_FBS_Final.

Supporting_Artifacts

FIPS
- Any additional supporting documentation relevant to the Flood Risk Project not previously submitted during Data Capture – Native format

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Appendix A. File Format Acronyms List

The following acronyms are used in the list of file format(s) shown in the directory structure.

.ASCII – American Standard for Information Interchange
.BIL – Band Interleaved by Line
.BIP – Band Interleaved by Pixel
.BMP – Bitmap image file
.CSV – Comma Separated Values
.DBF – dBase DataBase File
.DXF – AutoCAD® Drawing Interchange Format or Drawing Exchange Format
.DWG – AutoCAD® DraWinG file
.ECW – Intergraph® (ERDAS) Enhanced Compression Wavelet
Esri grid – Esri® raster file format
.fGDB – Esri® File Geodatabase
.GML – Geographic Markup Language
GeoTIFF – Georeferenced TIFF
.IMG – Image file
.JPG/.JPEG2000 – Joint Photographic Experts Group
.LAS – LASer (ASPRS)
.MDB – Microsoft® Access Database
.MrSID – LizardTech® Multiresolution Seamless Image Database
.MSG - Microsoft® Outlook Message
.MXD – Esri® ArcMap document
.PDF – Adobe® Portable Document Format
.PGDB – Esri® Personal Geodatabase
.PGW or .PGWX – PNG World File
.PNG – Portable Network Graphics
.PPT - Microsoft® PowerPoint
.SHP – Esri® Shapefile

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.TFW or .TFWX – TIFF World File
TIFF – Tagged Image File Format
.TIN – Triangulated Irregular Network
.TXT – Text file
Word – Microsoft® Word .doc or .docx file format
.XLS/.XLSX – Microsoft® Excel format
.XML – Extensible Markup Language

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