Flood Risk Database (FRD) Technical Reference

November 2016

FEMA

For more information, please visit the FEMA Guidelines and Standards for Flood Risk Analysis and Mapping webpage (www.fema.gov/guidelines-and-standards-flood-risk-analysis-and-mapping). 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.

Revision Date	Implementation
November 2016	Effective Immediately

Table of Revisions

The following summary of changes details revisions to the Flood Risk Database (FRD) Technical Reference subsequent to its most recent version in May 2016.

Affected Section or Subsection	Revision Date	Revision Description
Sections 1.2 (Flood Risk Database Table Deliverables by Task) & 3.0 (Tables and Feature Classes)	November 2016	In order to promote more flexibility and simplicity in the FRD, removed the requirement to populate the following Flood Risk Map and Flood Risk Report-specific FRD tables: • S_Carto_Ar, S_Carto_Ln, S_Carto_Pt, and S_FRM_Callout_Ln • FRR_Custom, FRR_Images, and FRR_Project These are now considered enhanced tables.

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1.0 Flood Risk Database

1.1 Overview

The Flood Risk Database (FRD) is the key product that will support all other flood risk products. It is a database of non-regulatory flood risk data which contains the digital data used to prepare the Flood Risk Report (FRR) and Flood Risk Map (FRM), as well as other ancillary data generated during a Flood Risk Project.

The FRD tables prefixed with "S_" have a spatial component associated with them. The tables that begin with "L_" are tabular (often referred to as a look-up or business tables); there is no direct spatial component included in these tables. The spatial tables (feature classes) also have a suffix describing the type of feature contained within the table. These include a) _Ar (for polygonal areal features), b) _Ln (for linear features) and c) _Pt (for point features).

Table 1 provides a list of tables included in the FRD. The listing is ordered with spatial tables (feature classes) first, followed by non-spatial (business) tables and lookup tables last.

Table 1. Flood Risk Database Tables

FRD Table Name	Table Type	Table Description
S_AOMI_Pt	Spatial	Areas of mitigation interest points that contribute to flood losses or highlight flood issues and/or associated effects
S_Carto_Ar	Spatial	Polygons used for cartographic representations only on the Flood Risk Map
S_Carto_Ln	Spatial	Lines used for cartographic representations only on the Flood Risk Map
S_Carto_Pt	Spatial	Points used for cartographic representations only on the Flood Risk Map
S_CenBlk_Ar	Spatial	Census Block polygons
S_Cr_Fac_Pt	Spatial	Location and attributes of critical facilities identified for modeled dam release or levee breaches scenarios in the Flood Risk Project
S_CSLF_Ar	Spatial	Changes Since Last FIRM (CSLF) polygons depicting areas of change between new and previous flood hazards
S_Dams_XS_Ln	Spatial	Location and attributes for cross sections used for dam inundation modeling in the Flood Risk Project
S_DS_Inundation_Ar	Spatial	Location and attributes for the downstream inundation areas of the dams studied in the Flood Risk Project
S_Easement_Ar	Spatial	Location and attributes for the easements associated with the dams studied in the Flood Risk Project

FRD Table Name	Table Type	Table Description
S_FRD_Pol_Ar	Spatial	Location and attributes for political jurisdictions shown on the Flood Insurance Rate Maps (FIRMs) utilized in the Flood Risk Project
S_FRD_Proj_Ar	Spatial	Polygon representing the extents of the Flood Risk Project area
S_FRM_Callout_Ln	Spatial	Represents the leaders on the FRM for callouts
S_HUC_Ar	Spatial	Hydrologic Unit Code (HUC) boundaries in and adjacent to the Flood Risk Project area
S_Inc_Flood_Scen_Ar	Spatial	Polygons reflecting the additional areas of inundation associated with an increase to the base flood level
S_Levee_Ln	Spatial	Location and attributes for the levee as a line feature along the top of a levee
S_Lev_Breach_Pt	Spatial	Location and attributes for community-supplied levee breach and armored overtopping points
S_Lev_Elements_Pt	Spatial	Location and attributes for drainage and protection features along a levee
S_Lev_Freeboard_Ln	Spatial	Location and attributes for freeboard information associated with a levee scenario
S_Lev_Inundation_Ar	Spatial	Location and attributes for the inundation area associated with levee scenarios
S_Lev_Rating_Curve_Pt	Spatial	Location for points along a levee where a rating curve has been developed
S_PFD_Ar	Spatial	Spatial extent of the Federal Emergency Management Agency (FEMA) regulatory Primary Frontal Dune (PFD), delineated between the dune toe and heel
S_RM_Dams_Pt	Spatial	Location and attributes for dams studied in the Flood Risk Project
S_Simpl_Cst_Zone_Ar	Spatial	Polygons reflecting the relative level of wave hazard severity within the 1% annual chance floodplain
S_UDF_Pt	Spatial	Locations of user-defined facilities used in site-specific risk analysis
S_US_Inundation_Ar	Spatial	Location and attributes for the upstream inundation areas of the dams studied in the Flood Risk Project
FRD_Model_Info	Non-Spatial	Information about engineering models used in prior and updated analysis
FRD_Study_Info	Non-Spatial	General information about the FIRM database(s) utilized in the Flood Risk Project
FRR_Custom	Non-Spatial	Stores the custom text for the FRR
FRR_Images	Non-Spatial	Stores the custom images for the FRR
FRR_Project	Non-Spatial	Provides project level information for FRR generation / storage
L_AOMI_Summary	Lookup	Area of Mitigation Interest Summary table used for the FRR
L_Claims	Lookup	Claims data for each community or partial community and project area (1 record each)

FRD Table Name	Table Type	Table Description
L_CSLF_Summary	Lookup	CSLF Summary table by community or partial community and project area used for the FRR
L_Dams_XS_MDL_Results	Lookup	Results by cross section from the model of the dam release scenarios for the dams studied in the Flood Risk Project
L_Dam_Scenario	Lookup	Scenario for each model dam release in the Flood Risk Project
L_Exposure	Lookup	Exposure data for each community or partial community and project area (1 record each)
L_Levee_Scenario	Lookup	Scenarios associated with levees in the Flood Risk Project
L_Lev_Rating_Curve	Lookup	Attributes used to develop a rating curve associated with rating curve points
L_Local_GBS	Lookup	Local general building stock data by Census Block
L_RA_Results	Lookup	Stores risk assessment results by Census Block or partial Census Block, by frequency
L_RA_Summary	Lookup	Risk assessment summary table by community or partial community and project area
L_RA_UDF_Results	Lookup	Risk assessment results for user-defined facilities
L_Source_Cit	Lookup	Source citations for data sources used in the project; used to correlate with metadata

In addition to feature classes and tables stored in the geodatabase, several raster datasets will be delivered as part of each Flood Risk Project. These rasters and their naming convention are outlined in Section 4.0.

1.2 Flood Risk Database Table Deliverables by Task

Table 2 presents the Flood Risk Database tables that apply to specific components of a Flood Risk Project. The scope of a particular project could include several of these activities; therefore, all of the tables from each of the activities involved in the project will likely apply to that project.

The following Flood Risk Database tables are either R – Required or A – Required if Applicable, depending on the interim data development submittal requirements. A second code indicates whether it is an E – Enhanced Flood Risk Database item.

Table 2. FRD Submittal Table

FRD Table Name	Flood Risk Project	Changes Since Last FIRM	Flood Depth and Analysis Rasters	Flood Risk Assessment	AoMI	FRM	FRR	Coastal	Dams	Levees
S_AOMI_Pt					R					
S_Carto_Ar						E				
S_Carto_Ln						E				
S_Carto_Pt						E				
S_CenBlk_Ar				R						
S_Cr_Fac_Pt	A, E									
S_CSLF_Ar		R								
S_Dams_XS_Ln									A, E	
S_DS_Inundation_Ar									A, E	
S_Easement_Ar	A, E									
S_FRD_Pol_Ar	R									
S_FRD_Proj_Ar	R									
S_FRM_Callout_Ln						E				
S_HUC_Ar	R									
S_Inc_Flood_Scen_Ar	A, E							A, E		
S_Levee_Ln										A, E
S_Lev_Breach_Pt										A, E
S_Lev_Elements_Pt										A, E
S_Lev_Freeboard_Ln										A, E
S_Lev_Inundation_Ar										A, E
S_Lev_Rating_Curve_Pt										A, E
S_PFD_Ar								A, E		
S_RM_Dams_Pt									A, E	
S_Simpl_Cst_Zone_Ar								A, E		
S_UDF_Pt				A						
S_US_Inundation_Ar									A, E	
FRD_Model_Info		R								
FRD_Study_Info	R									
FRR_Custom							E			
FRR_Images							E			
FRR_Project							E			
L_AOMI_Summary					R					
L_Claims	A									

FRD Table Name	Flood Risk Project	Changes Since Last FIRM	Flood Depth and Analysis Rasters	Flood Risk Assessment	AoMI	FRM	FRR	Coastal	Dams	Levees
L_CSLF_Summary		R								
L_Dams_XS_MDL_Results									A, E	
L_Dam_Scenario									A, E	
L_Exposure				R						
L_Levee_Scenario										A, E
L_Lev_Rating_Curve										A, E
L_Local_GBS				A, E						
L_RA_Results				R						
L_RA_Summary				R						
L_RA_UDF_Results				A						
L_Source_Cit	R	R	R	R	R	R	R	R		
RASTERS										
Arrv_xxxxxxxx									A, E	
CstDpthxxxpct								R		
Depth_xxxxxx			R							
Dpth_xxxxxxxx									A, E	A, E
DVS_xxxxxxxx			A, E					A, E	A, E	A, E
FID_xxxxxxxx									A, E	
Hillshade						R				
Pct30yrChance			R							
PctAnnChance			R							
Peak_xxxxxxxx									A, E	
Vel_xxxxxxxx			A, E					A, E	A, E	A, E
WSE_xxxxxx			R					R	A	A
WSE_Change			A, E							
RAdpth_xxxxxx			A, E					A, E	A, E	A, E

1.3 Data Accuracy and Integrity

All duplicate elements (i.e., features with coincident vertices and the same attributes) within the FRD should be removed. The data should also be horizontally controlled and referenced to the appropriate horizontal and vertical datums.

In the instances during which any data must be created (e.g., digitized from paper FIRM panels to create the prior Special Flood Hazard Area (SFHA) for CSLF) or adjusted (e.g.,

to correct for misalignment of SFHAs between county-wide FIRMs when merged for a HUC-8 watershed Flood Risk Project), the data should be created or adjusted according to FIRM Database Technical Reference requirements (e.g., edgematching, vertex spacing, coincident features, precise features, etc.).

2.0 Database Schema Properties

Table attribute structure defines the required fields and field properties. For a Geographic Information System (GIS) feature class or business table, field properties specify the type, field width and how the data is stored. Generally these properties are identified as the field name, field type, field length, field precision and field scale. The field name is the unique term used to identify the table column (e.g., CEN_BLK_ID). The field type indicates the type of data that is stored in the table column. Common field types include text, date, float (i.e., a small fractional number), double (i.e., a large fractional number), short integer (i.e., a small integer number) and long integer (i.e., a large integer number). The following two sections describe these field properties as they pertain to the file geodatabase (fGDB) and shapefile (SHP) formats being delivered.

2.1 fGDB Field Properties

For the text field type in a fGDB, the user should specify the field length for each field based on the Field Properties listed in each feature class. The field length indicates the number of characters that may be stored in the table column (e.g., a text field that has a length of 100 may store no more than 100 alphanumeric characters). Since only the data type and length (for text fields) must be declared for the fGDB, the tables identifying the field properties will not include a specification for precision and scale.

For date and numeric field types in a fGDB, the length is the number of bytes required to store the data and is controlled internally by the software based on the data type and cannot be changed by the user. The precision and scale in a fGDB are not utilized and will show only as a 0 value.

The file geodatabase schema provides support for Binary Large Object (Blob) and Raster data types. However, the SHP specification does not support those data types. Therefore, those fields will not be exported to SHP format. Those Blob and Raster objects can be extracted directly from the source FRR or FRM, as well as the fGDB version of the FRD.

2.2 SHP Field Properties

For the text field type in the SHP format, the user should specify the field length for each field based on Table 9. The field length indicates the number of characters that may be stored in the table column (e.g., a text field that has a length of 100 may store no more than 100 alphanumeric characters). Since only the data type and length (for text fields) must be declared for SHP format, the tables in this Technical Reference identifying the

field properties will not include a specification for precision and scale. Domain-based fields shall contain the actual descriptive values, not the numeric or alphanumeric coded value.

For numeric field types in a SHP format, the field length is ignored. The precision defines the number of digits that can be stored in the field. The scale defines the number of digits to the right of the decimal place. For those data types that store fractional values (e.g., double and float), the user may define the precision and scale. For example, the number 3456.78 has a precision of 6 and a scale of 2. If the user opts to accept the default values of 0 for the precision and scale, any number of decimal places may be stored. For those data types that store integer values (e.g., short integer and long integer), the user may only define the precision since the field value may not be fractional. For compatibility with the fGDB format of the FRD, the precision and scale are not specified in the following table and feature class data dictionaries.

For the date field type in a SHP format, the length, precision and scale are inherent and cannot be specified by the user. Date fields in the SHP format are stored in the native date format.

2.3 Required and Optional Fields

In the table documentation in Section 3 each field name is followed by a letter code as follows:

- R – Required for all records
- A – Required if applicable to that particular spatial feature
- E – Required if that enhancement is part of the Statement of Work (SOW), Mapping Activity Statement (MAS) or Inter-Agency Agreement (IAA)
- O – Optional; the Mapping Partner determines if the data for this field are available.

Most FRD tables also have the following, required fields:

a) HUC8_CODE that identifies the sub-basin for that feature

b) CASE_NO that identifies the FEMA project with which each feature is associated

c) VERSION_ID that stores the version of the FRD standard that was used to compile the data

2.4 Primary and Foreign Keys

Each FRD table and feature class has an OBJECTID field defined. This is a sequential number maintained internally in the geodatabase by Esri ArcGIS software. This OBJECTID field provides a mechanism for the software to uniquely access each record in the table. This field is required by the geodatabase schema.

Each FRD table and feature class also has a primary key defined that may be made up of one or more fields**.** This primary key is used to provide unique access to a record in the table. If the primary key is a single field, the field is usually suffixed with 'ID'. Where possible, these fields are designed to use identifications (IDs) that are known unique values. For example, in the S_CenBlk_Ar feature class, the primary key is the CEN_BLK_ID field, which is the character string that is created by concatenating the State and County Federal Information Processing Standards (FIPS) codes, followed by the Census tract, block group and block numbers. Allowance has been made for future Censuses that may add an alphabetic suffix to the Census Block id.

In some cases, no 'natural' key field exists. For example, the S_AOMI_Pt feature class does not currently have any unique identifier assigned to it. In these cases, the Mapping Partner will sequentially assign a unique number to each feature in the feature class. In the S_AOMI_Pt example, the AOMI_ID field is populated with "1", "2", "3", etc., for each successive feature. The Mapping Partner may choose another numbering method provided it is logical, documented and consistently implemented, and results in a unique ID value for each record in the table.

In some cases, a single primary key field uniquely identifies each record. However, the use of two or more non-system fields may also be used to uniquely identify a record. For example, in the L_CSLF_Summary table, there are fields for the CSLFSUMMID, which is either the Community Identifier (CID) for the individual community records or the CASE_NO for the project total records. For each community, there are three records based on the LOCATION field, one each for SFHA, non-SFHA and Floodway. So a combination of the CSLFSUMMID field and the LOCATION field will uniquely identify each record.

2.5 Null Values

Although the fGDB format supports "true" null values for data types, the SHP format does not. To provide consistency between the fGDB and SHP formats of the FRD standards, the following conventions for inserting pseudo null values into the tables is followed for both fGDB and SHP formats.

The value to use for non-populated data for each field that is required by the FRD technical specification or the SOW is as follows:

- Text: "NP"
- Numeric: -8888
- Date: 8/8/8888

The value to use for fields that are optional or required when applicable either by the FRD technical specification or the SOW is as follows:

- Text: Null (or "", the empty string)

- Numeric: -9999
- Date: 9/9/9999

For raster data, the value 'NODATA' should be used to represent the absence of data or null values. Generally, all areas outside the project area (i.e., the polygon in S_FRD_Proj_Ar) will be set to 'NODATA' in the depth and analysis rasters.

3.0 Tables and Feature Classes

Each of the feature classes and tables present in an FRD are described by the following:

- Overview – a short paragraph describing the table or feature class and its purpose
- Attribute Definitions – a description of each attribute
- Field Properties – the database schema for the table or feature class
- Relationships – a description of the relationships with other tables in the FRD, if applicable

In the field properties sections in the following table definitions, the key type column uses several abbreviations designating which fields are keys and what type they represent. These abbreviations are defined below:

- PK – Primary Key – This field is the internal primary key field used and maintained by ArcGIS software for all tables and feature classes registered in a geodatabase.
- UPK – User-defined Primary Key – This field(s) is the primary key to be used in accessing records in the table or feature class.
- FK – Foreign Key – This field is related to a UPK in another table.

Feature Class: S_AOMI_Pt – Areas of Mitigation Interest

This point feature class is intended to be used as a communication tool to direct users to areas and issues that warrant further investigation or research for possible mitigation, as well as to highlight prior mitigation successes. It is required to be populated when the Areas of Mitigation Interest (AoMI) dataset is produced.

This feature class contains one record for each AoMI type at a location on the FRM. Additionally, the features are used to create a summary by community and classification in the L_AOMI_Summary table. There is no direct link between the S_AOMI_Pt feature class and the L_AOMI_Summary table.

The S_AOMI_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
AOMI_ID	R	Area of Mitigation Interest Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this AoMI lies. See the definition in S_FRD_Pol_Ar for more detail. If the AoMI point does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the AoMI lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the AoMI does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
AOMI_CLASS	R	Area of Mitigation Interest Class. This is the general class to which the AoMI belongs (e.g., Riverine, Coastal, Past Floods, uses D_AOMI_Class).
AOMI_TYP	R	Type of Mitigation Interest. This is the general type to which the AoMI belongs (e.g., Dam, Levee, Erosion, etc., uses D_AOMI_Typ).
AOMI_CAT	R	Area of Mitigation Interest Source Category. This is the general category from which the AoMI Information originated (uses D_AOMI_SourceCat).

Field Name	R/A/E/O	Description
AOMI_SRCE	R	Source of the AoMI information (e.g., State Hazard Mitigation Officer, National Flood Insurance Program (NFIP), local Agency). Care should be taken in standardization of the names of these sources within a project. The L_AOMI_Summary table can be semi-automatically generated if a consistent naming convention is used.
AOMI_INFO	A	AoMI Information. This field provides the specific reasons this location is considered an AoMI.
NOTES	A	Comments explaining the relevance of this AOMI point. The size of this field provides the user space to supply more detail in a free form format regarding the relevance of this AoMI.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the AoMI point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the S_AOMI_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
AOMI_ID	UPK	R	Text	25		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
AOMI_CLASS		R	Text	4		D_AOMI_Class
AOMI_TYP		R	Text	4		D_AOMI_Typ
AOMI_CAT		R	Text	4		D_AOMI_SourceCat
AOMI_SRCE		R	Text	50		N/A
AOMI_INFO		A	Text	254		N/A
NOTES		A	Text	1000		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Note: Because of the length of the NOTES field and the dBASE limitation of 254 character field width, when this feature class is exported to SHP format, the Mapping Partner should create four fields to contain the data in the NOTES field (i.e., NOTES1, NOTES2, NOTES3 and NOTES4).

Feature Class: S_Carto_Ar – Cartographic Areas

This polygon feature class is used to provide a cartographic background for the FRM. The features contained in the feature class are primarily large hydrographic areas that are best represented as polygons and polygons representing the restudy areas and significant cultural features (e.g., parks, military bases, national forests, etc.). Other potential features include the portions of communities that lie outside of the S_FRD_Proj_Ar polygon to allow the entire community area to be displayed in the project locator inset on the FRM. This is an enhanced feature class that can be populated when displaying additional polygon cartographic features on the FRM.

The S_Carto_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CART_AR_ID	R	Cartographic Area Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
F_TYPE	R	Feature Subtype for symbolization. Uses D_Carto_Typ.
F_CODE	A	Feature Code for symbolization. Uses D_Carto_Hydro_Code.
NAME	A	Feature Name use for labeling on the FRM. This should be the name for the body of water or other feature name.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code (HUC) for the sub-basin in which the feature lies. If the feature crosses a HUC-8 boundary, the field shall be populated with the HUC-8 value in which the majority of the feature lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_Carto_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CART_AR_ID	UPK	R	Text	25		N/A
F_TYPE		R	Short Integer	Default		D_Carto_Typ
F_CODE		A	Long Integer	Default		D_Carto_Hydro_Code
NAME		A	Text	80		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Carto_Ln – Cartographic Lines

This polyline feature class is used to provide a cartographic background for the FRM. The features contained in the feature class are primarily streams and transportation features (i.e., roadways). This is an enhanced feature class that can be populated when displaying additional polyline cartographic features on the FRM.

The S_Carto_Ln layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CART_LN_ID	R	Cartographic Line Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
F_TYPE	R	Feature Subtype for symbolization. Uses D_Carto_Typ.
F_CODE	A	Feature Code for symbolization. Uses D_Carto_Hydro_Code for possible values when F_TYPE = 100 Hydrographic and D_Carto_Trans_Code for F_TYPE=200 Transportation; Should be null for other F_TYPEs.
NAME	A	Feature Name use for labeling on the FRM. This should be the name for the stream, roadway, or other feature.
HWY_NUM	A	Highway Number or Route Number to place on shield.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the feature lies. If a feature crosses a HUC-8 boundary, the field shall be populated with the HUC-8 value in which the majority of the feature lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field properties for the S_Carto_Ln layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CART_LN_ID	UPK	R	Text	25		N/A
F_TYPE		R	Short Integer	Default		D_Carto_Typ
F_CODE		A	Long Integer	Default		D_Carto_Hydro_Code D_Carto_Trans_Code
NAME		A	Text	80		N/A
HWY_NUM		A	Short Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A

Feature Class: S_Carto_Pt – Cartographic Points

This point feature class is used to provide a cartographic background for the FRM. It is an enhanced feature class that can be populated when displaying additional point cartographic features on the FRM.

The S_Carto_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CART_PT_ID	R	Cartographic Point Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
F_TYPE	R	Feature Subtype for symbolization. Uses D_Carto_Typ.
F_CODE	A	Feature Code for symbolization. Uses D_Carto_Hydro_Code for possible values when F_TYPE = 100 Hydrographic and D_Carto_Trans_Code for F_TYPE = 200 Transportation; Should be null for other F_TYPEs.
NAME	A	Feature Name used for labeling on the FRM. This should be the name for the stream, roadway, or other feature.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the feature lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the S_Carto_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CART_PT_ID	UPK	R	Text	25		N/A
F_TYPE		R	Short Integer	Default		D_Carto_Typ
F_CODE		A	Long Integer	Default		D_Carto_Hydro_Code D_Carto_Trans_Code
NAME		A	Text	80		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

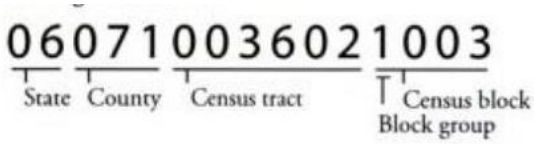
Feature Class: S_CenBlk_Ar – Census Blocks

This polygon feature class is the spatial foundation for all census block-based flood risk assessment data. All of the inventory and damage estimates for flood risk assessments are stored and performed at the Census Block level, except for the User Defined Facilities (UDFs). This feature class contains the spatial location of the Census Blocks for the project. The census block geometries shall be based on the version of Hazus used to perform the analysis, which should be documented in the metadata. This should include information on whether the census block type was homogenous or dasymetric (see Flood Risk Assessment Guidance for more information). This feature class also stores the Asset Replacement Value, as well as the estimated population count for each block. The risk assessment results are stored in other tables (e.g., L_RA_Results). This feature class is required to be populated when the Flood Risk Assessment dataset is produced.

The feature class should contain one record for each Census Block in or partially in the project area.

This feature class is linked to the inventory (L_Local_GBS) and results tables (i.e., L_RA_Results).

The S_CenBlk_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CEN_BLK_ID	R	This field should be populated with the Census Block identifier. This identifier is based on the following format with an optional single alphabetic character suffix to accommodate the 2010 decennial Census: 
POPULATION	R	Population Count for the Census Block.
ARV_BG_TOT	R	Asset Replacement Value of Buildings of All Structure Types. Obtained from General Building Stock data, in whole dollars.
ARV_CN_TOT	R	Asset Replacement Value of Contents for All Structure Types. Obtained from General Building Stock data, in whole dollars.
ARV_BG_RES	R	Asset Replacement Value of Residential Buildings. Obtained from General Building Stock data, in whole dollars.

Field Name	R/A/E/O	Description
ARV_CN_RES	R	Asset Replacement Value of Contents for Residential Structures. Obtained from General Building Stock data, in whole dollars.
ARV_BG_COM	R	Asset Replacement Value of Commercial Buildings. Obtained from General Building Stock data, in whole dollars.
ARV_CN_COM	R	Asset Replacement Value of Contents for Commercial Structures. Obtained from General Building Stock data, in whole dollars.
ARV_BG_OTH	R	Asset Replacement Value of Buildings of Other Structure Types. Obtained from General Building Stock data, in whole dollars.
ARV_CN_OTH	R	Asset Replacement Value of Contents of Other Structure Types. Obtained from General Building Stock data, in whole dollars.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the Census Block lies. If a Census Block crosses a HUC-8 boundary, the field shall be populated with the HUC-8 value in which the majority of the Census Block lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ CenBlk_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CEN_BLK_ID	UPK, FK	R	Text	17		L_RA_Results L_Local_GBS
POPULATION		R	Long Integer	Default		N/A
ARV_BG_TOT		R	Long Integer	Default		N/A
ARV_CN_TOT		R	Long Integer	Default		N/A
ARV_BG_RES		R	Long Integer	Default		N/A
ARV_CN_RES		R	Long Integer	Default		N/A
ARV_BG_COM		R	Long Integer	Default		N/A
ARV_CN_COM		R	Long Integer	Default		N/A
ARV_BG_OTH		R	Long Integer	Default		N/A
ARV_CN_OTH		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Cr_Fac_Pt – Critical Facilities

This point feature class includes locations of critical facilities that could be impacted by the upstream or downstream inundation areas associated with a dam or a levee or other areas affected by coastal or riverine flooding. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

This feature class should be clipped by S_FRD_Proj_Ar so that no features are present outside of the S_FRD_Proj_Ar polygon.

The S_Cr_Fac_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CRITFAC_ID	R	Critical Facility Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
NAME	R	Name of Critical Facility.
CRIT_STAGE	R	The flood stage elevation at which damages occur at the facility. The datum for the critical stage shall be documented in the S_FRD_Proj_Ar. For the majority of cases, the datum should be NAVD88. Uses D_V_Datum domain.
RM_DAMS_ID	A	Risk Map Dams Identifier. Foreign Key to S_RM_Dams_Pt feature class.
LEVEE_ID	A	Foreign Key to Risk Map Levees (S_Levee_Ln feature class)
AOMI_ID	R	Area of Mitigation Interest Identifier. Foreign Key to the S_AOMI_Pt feature class.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this Critical Facility lies. See the definition in S_FRD_Pol_Ar for more detail. If the Critical Facility point does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the Critical Facility lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the Critical Facility does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.

Field Name	R/A/E/O	Description
CF_DESCRIP	R	A brief description of why the facility is considered critical. Quantification of significance is highly encouraged. Examples include a primary hospital for a 3 county area, the only fire station for the community, a factory that employs 30% of the county's workforce.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the point representing the facility lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the S_Cr_Fac_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CRITFAC_ID	UPK	R	Text	25		N/A
NAME		R	Text	50		N/A
CRIT_STAGE		R	Double	Default	Default	N/A
RM_DAMS_ID	FK	A	Text	25		S_RM_Dams_Pt
LEVEE_ID	FK	A	Text	25		S_Levee_Ln
AOMI_ID	FK	R	Text	25		S_AOMI_Pt
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
CF_DESCRIP		R	Text	128		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_CSLF_Ar – Changes Since Last FIRM

This polygon feature class depicts the changes in spatial extents between the previous and newly revised FIRMs It is required to be populated when the Changes Since Last FIRM dataset is produced. If the CSLF polygon spans FIRM panels that have different effective dates, then those polygons should be divided at the panel boundaries.

This feature class is linked to the FRD_Model_Info table by the NEW_MODEL and PRE_MODEL fields allowing the user to easily find which models were associated with the CSLF polygons. The feature class is also related to the L_SourceCit table by the PRE_SRCCIT, NEW_SRCCIT and SOURCE_CIT fields to document the previous and current FIRM databases used to develop the CSLF. Although a formal relationship class cannot exist to a different database, the feature class is associated with the Coordinated Needs Management Strategy (CNMS) data using the CNMS_ID field.

The S_CSLF_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CSLF_ID	R	CLSF Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CNMS_ID	R	CNMS Identifier. Foreign Key to S_Studies_Ln feature class in the CNMS Database. This identifier is composed of the 5-digit county FIPS code, '01' indicating the S_Studies_Ln feature class, and a 5-digit unique sequential number.
AREA_SF	R	Area of the change polygon, measured in square feet in the local projection.
PRE_ZONE	R	Previous Flood Zone Designation . This is the flood zone designation from the previous, effective FIRM. Uses D_Zone domain.
PRE_ZONEST	R	Previous Flood Zone Subtype Designation. This is the designation from the previous, effective FIRM. Uses D_ZoneSubtype domain.
PRE_MODEL	A	Models used for previous, effective FIRM. This is a foreign key to the FRD_Model_Info table.
PRE_TOPO	A	Topographic Type used for previous delineation. Uses D_Topo_Typ domain.
PRE_SRCCIT	A	Source Citation for previous FIRM. This is a foreign key to the L_Source_Cit table.
NEW_ZONE	R	New Flood Zone Designation. This is the flood zone designation from the current project. Uses D_Zone domain.

Field Name	R/A/E/O	Description
NEW_ZONEST	R	New Flood Zone Subtype Designation. This is the flood zone designation from the current project. Uses D_ZoneSubtype domain.
NEW_MODEL	R	Models used for new delineation. This is a foreign key to the FRD_Model_Info table.
NEW_TOPO	R	Topographic Type used for new delineation. Uses D_Topo_Typ domain.
NEW_SRCCIT	R	Source Citation for new FIRM. This is a foreign key to the L_Source_Cit table.
PEAKDSCHG	E	Peak Discharge Change. The change to the study's peak discharges that may have impacted analysis (e.g., Increase/Decrease/Negligible/ Unknown) [aka, CNMS element C2]. Uses D_Change domain. This is an enhanced field.
MDLMETHODS	E	Model Methods Change. The presence of significant changes to primary assumptions associated with the updated model methodology since last the last study (e.g., True/False/Unknown) [aka, CNMS element C3]. Uses D_TrueFalse domain. This is an enhanced field.
FLD_CTRLCHG	E	Flood Control Structures Change. The change to the study's major flood control structure(s) that may have impacted analysis since the last study (e.g., Increase/Decrease/Negligible/ Unknown). [aka, CNMS element C4]. Uses D_Change domain. This is an enhanced field.
HYDSTRCHG	E	Hydraulic Structures Change. The change to the study's number of hydraulic structures that may have impacted analysis since the last study (e.g., Increase/Decrease/Negligible/ Unknown). [aka, CNMS element C6 & S4]. Uses D_Change domain. This is an enhanced field.
TOPOCHG	E	Topography Change. The change in the underlying topography used for mapping the floodplain may have impacted the analysis since the last study (e.g., True/False/Unknown). Uses D_TrueFalse domain. This is an enhanced field.
SEDCHG	E	Sediment Change. The presence of significant changes to channel sedimentation since last the last study (e.g., True/False/Unknown) [aka, CNMS element C7]. Uses D_Change domain. This is an enhanced field.
EROSIONCHG	E	Erosion Change. The presence of significant changes to channel erosion or scour since last the last study (e.g., True/False/ Unknown) [aka, CNMS element C7]. Uses D_Change domain. This is an enhanced field.

Field Name	R/A/E/O	Description
CHANNELCHG	E	Channel Change. The presence of significant changes to channel geometry since last the last study (e.g., True/False/Unknown) [aka, CNMS element C5 & S5]. Uses D_TrueFalse domain. This is an enhanced field.
LEVEECHG	E	Levee Change. The change in the levee status or modeling parameters/scenario for the levee may have impacted the analysis since the last study (e.g., True/False/Unknown). Uses D_TrueFalse domain. This is an enhanced field.
RUNOFFCHG	E	Runoff Change. The change to the study's runoff characteristics due landuse, vegetation or imperviousness changes that may have impacted analysis (e.g., Increase/Decrease/Negligible/Unknown) [aka, CNMS elements S3 & S7]. Uses D_Change domain. This is an enhanced field.
DUNECHG	E	Dune Change. The presence of significant changes to frontal dunes since last the last study (e.g., True/False/Unknown) [aka, CNMS element S8]. Uses D_Change domain. This is an enhanced field.
OTHCHG	E	Other Changes. The description of other changes the Mapping Partner believes to have contributed to the results of the analysis. This is an enhanced field.
SFHACHG	A	SFHA Change. The type of SFHA change for each CSLF polygon based upon previous and new flood zones (i.e., does this polygon indicate an Increase/Decrease/Zero change in the SFHA). Uses D_Change domain.
FLDWYCHG	A	Floodway Change. The type of floodway change for each CSLF polygon based upon previous and new flood zones (i.e., does this polygon indicate an Increase/Decrease/Zero change in the floodway area). Uses D_Change domain.
NONSFHACHG	A	Non-SFHA Change. The type of non-SFHA change for each CSLF polygon based upon previous and new flood zones (i.e., does this polygon indicate an Increase/Decrease/Zero change in the non-SFHA area). Uses D_Change domain.
CHHACHG	A	Increase or decreases in the SFHA in coastal communities that have been newly added into, or removed from, the coastal high hazard areas (VE or V Zones). This field is not meant to capture changes in V zone elevations (e.g. VE10 to VE12, VE9 to VE8, etc.). Uses D_Change domain.
STRUCTURES	E	The estimated count of affected structures within the area of change. This is an enhanced field.
POPULATION	E	The estimated affected population within the area of change. This is an enhanced field.

Field Name	R/A/E/O	Description
CID	R	This is the six-digit CID assigned by FEMA in which this CSLF polygon lies. See the definition in S_FRD_Pol_Ar for more detail. If the CSLF polygon does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the CSLF polygon feature lies. If a feature crosses a HUC-8 boundary, the field shall be populated with the HUC-8 value in which the majority of the feature lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail. This field should be populated with the SOURCE_CIT for the current Flood Risk Project.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_CSLF_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CSLF_ID	UPK	R	Text	25		N/A
CNMS_ID	FK	R	Text	12		S_Studies_Ln (CNMS)
AREA_SF		R	Double	Default	Default	N/A
PRE_ZONE		R	Text	4		D_Zone
PRE_ZONEST		R	Text	4		D_ZoneSubtype
PRE_MODEL	FK	A	Text	11		FRD_Model_Info
PRE_TOPO		A	Text	4		D_Topo_Typ
PRE_SRCCIT	FK	A	Text	25		L_Source_Cit
NEW_ZONE		R	Text	4		D_Zone
NEW_ZONEST		R	Text	4		D_ZoneSubtype
NEW_MODEL	FK	R	Text	11		FRD_Model_Info
NEW_TOPO		R	Text	4		D_Topo_Typ
NEW_SRCCIT	FK	R	Text	25		L_Source_Cit
PEAKDSCHG		E	Text	1		D_Change

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
MDLMETHODS		E	Text	1		D_TrueFalse
FLD_CTRLCHG		E	Text	1		D_Change
HYDSTRCHG		E	Text	1		D_Change
TOPOCHG		E	Text	1		D_TrueFalse
SEDCHG		E	Text	1		D_Change
EROSIONCHG		E	Text	1		D_Change
CHANNELCHG		E	Text	1		D_TrueFalse
LEVEECHG		E	Text	1		D_TrueFalse
RUNOFFCHG		E	Text	1		D_Change
DUNECHG		E	Text	1		D_Change
OTHCHG		E	Text	25		N/A
SFHACHG		A	Text	1		D_Change
FLDWYCHG		A	Text	1		D_Change
NONSFHACHG		A	Text	1		D_Change
CHHACHG		A	Text	1		D_Change
STRUCTURES		E	Long Integer	Default		N/A
POPULATION		E	Double	Default	Default	N/A
CID	FK	R	Text	6		S_FRD_Pol_Ar
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Dams_XS_Ln – Dam Cross Sections

This polyline feature class includes cross sections from the models of the dam release scenarios. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

This feature class is related to the L_Dams_XS_MDL_Results table using the DAMS_XS_ID field.

The S_Dams_XS_Ln layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
DAMS_XS_ID	R	Risk Map Dams Cross Section Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table. This identifier should match the identifiers from the S_XS feature class in the FIRM database. In the case of a model that was not previously incorporated in a Flood Insurance Study, the identifiers should match those in the original model.
RM_DAMS_ID	R	Risk Map Dams Identifier. Foreign Key to S_RM_Dams_Pt feature class.
STREAM_STA	R	Stream Station (in feet or miles) referenced in the S_XS feature class in the FIRM database. In the case of a model that was not previously incorporated in a Flood Insurance Study, the stream station should match those in the original model. The metadata should indicate which unit is being used as well as the origin of the stream stationing.
DS_DIST	R	The distance downstream (in feet or miles) from the toe of the dam referenced in RM_DAMS_ID to the cross section. The units used for DS_DIST should be the same as for STREAM_STA.
LEN_UNIT	R	Stream Station and downstream distance units using the D_Length_Unit domain.
STREAM_NM	R	Stream Name. The name used should match the stream name on the FIRM panel and in the DFIRM database.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the cross section line lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.

Field Name	R/A/E/O	Description
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field properties for the S_ Dams_XS_Ln layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
DAMS_XS_ID	UPK	R	Text	25		N/A
RM_DAMS_ID	FK	R	Text	25		S_RM_Dams_Pt
STREAM_STA		R	Double	Default	Default	N/A
DS_DIST		R	Double	Default	Default	N/A
LEN_UNIT		R	Text	4		D_Length_Units
STREAM_NM		R	Text	128		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A

Feature Class: S_DS_Inundation_Ar – Dam Downstream Inundation Areas

This polygon feature class contains flood inundation areas downstream of a dam for various release scenarios. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_DS_Inundation_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
DS_INUN_ID	R	Downstream Inundation Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
RM_DAMS_ID	R	Risk Map Dams Identifier. Foreign Key to S_RM_Dams_Pt feature class.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this inundation area lies. This may require subdividing the inundation areas using the S_FRD_Pol_Ar feature class. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the inundation lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
SCENAR_ID	R	Scenario Identifier. Foreign Key to the L_Dam_Scenario table.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the inundation area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field Name	R/A/E/O	Description
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ DS_Inundation_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
DS_INUN_ID	UPK	R	Text	25		N/A
RM_DAMS_ID	FK	R	Text	25		S_RM_Dams_Pt
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
SCENAR_ID	FK	R	Text	25		L_Dam_Scenario
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Easement_Ar – Dam Easements

This polygon feature class contains existing easement polygons (where available) that limit or restrict development near dams. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Easement_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
ESMT_ID	R	Easement Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
RM_DAMS_ID	R	Risk Map Dams Identifier. Foreign Key to S_RM_Dams_Pt feature class.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this easement lies. This may require subdividing the easement areas using the S_FRD_Pol_Ar. See the definition in S_FRD_Pol_Ar for more detail. If the easement does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the easement lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the easement does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
OWNER	R	Name of the property owner or easement grantor. The grantee is presumed to be the owner of the dam.
ESMT_DATE	R	Date the easement was acquired.
ESMT_TYPE	R	Nature of the restriction of the easement (drainage, flowage, conservation). Uses D_Esmt_Typ domain.
ESMT_PURPS	R	Description of the purpose for the easement by providing the event or elevation the easement is based on (e.g., 3.0' above the 1937 flood stage).
IMAGE	A	Scanned image of the plat or legal document used to convey the easement.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the easement lies.

Field Name	R/A/E/O	Description
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ Easement_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
ESMT_ID	UPK	R	Text	25		N/A
RM_DAMS_ID	FK	R	Text	25		S_RM_Dams_Pt
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
OWNER		R	Text	128		N/A
ESMT_DATE		R	Date	Default		N/A
ESMT_TYPE		R	Text	6		D_Esmt_Typ
ESMT_PURPS		R	Text	128		N/A
IMAGE		A	Blob	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_FRD_Pol_Ar – FRD Political Areas

This polygon feature class is the combination of the S_Pol_Ar feature class from all FIRM databases in the project area. It is required to be populated. There should be one record (polygon) per community. This will necessitate the use of multi-part polygons for non-contiguous community boundaries. The polygon(s) should be clipped at the project boundary using the S_FRD_Proj_Ar feature class.

This feature class should only contain communities that have summary information presented in Section 3 of the Flood Risk Report.

The S_FRD_Pol_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
POL_AR_ID	R	Political Area Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table. This field should be renumbered after appending all the constituent S_Pol_Ar feature classes to provide uniqueness in this feature class.
DFIRM_ID	R	Regulatory Product Identifier. 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). Within each FIRM database, the DFIRM_ID value is identical.
CID	R	Community Identification Number. This is the six-digit community number assigned by FEMA. 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 (i.e., FED, ST, or OTHR), followed by a sequential number (e.g., a tribal land may be 36OTHR01).
POL_NAME1	R	Political Area Name 1 - This is the primary name of the community. This is the area with Floodplain Management Jurisdiction. This would correspond to the official name of this jurisdiction used by the FEMA within the NFIP. For unincorporated areas of a county, this must be the county name (e.g., Montgomery County). For cities, towns, and villages the name should be of the format “City of Floodville” or “Town of Waterloo”. In the case where FED, ST, or OTHR is used in the CID field, the Mapping Partner must enter an appropriate name describing the political area.

Field Name	R/A/E/O	Description
POL_NAME2	A	Political Area Name 2. This is the secondary name of the area shown on FIRM panels. Populated if there is a common name for an area other than the official jurisdiction name. Also used in situations where islands, National Parks, National Forests, military bases, or other area boundaries and/or labels need to be shown on the FRM.
CO_FIPS	R	County FIPS Code. This is the three-digit county FIPS code. This is a standard numbering system that is used by the Federal government. Defined in FIPS Pub 6-4.
ST_FIPS	R	State FIPS. 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. Acceptable values for this field are listed in the D_State_FIPS domain.
COMM_NO	R	Community Number. This is the four-digit number assigned by FEMA to each community for tracking purposes under the NFIP. This number can be obtained from the community status book that can be viewed at www.msc.fema.gov.
POPULATION	R	Population for portion of community in this project area.
TOT_POP	R	Total population of the community.
PCT_POP	R	Percent of the community's population in this project area.
LND_AR_SM	R	Land Area. Area in square miles of the community in this project area.
TOT_LND_AR	R	Total Land Area. Total land area of the community in square miles.
PCT_LND_AR	R	Percentage Land Area. Percentage of the community's land area in this project area.
NFIPSTATUS	R	NFIP Status. This is a true/false status field which indicates if the community participates in the NFIP. If the community has been placed in suspended status, a value of false should be used to designate that the community is no longer participating. D_TrueFalse contains valid values for this field.
CRS_RATING	R	FEMA Community Rating System (CRS) Classification for the community (1 ~ 10).
PASTDECLAR	R	Past Declarations. Number of past Federal flood emergency declarations. Since declarations are normally made at the county level, if the portion of the community for this project is in that county, then that declaration would apply in tallying the declarations for the community. The data in this field should not be aggregated to larger political areas because of the potential for counting the same declaration multiple times.
FLD_POLICY	R	Flood Policies. Number of flood insurance policies for this portion of the community in the project area.

Field Name	R/A/E/O	Description
POLICY_COV	R	Flood Policy Coverage. Dollar amount of flood insurance coverage for this portion of the community in the project area.
HMP_STATUS	R	HMP Status . This is a true/false status field indicating if the community participates in a FEMA approved Hazard Mitigation Plan. D_TrueFalse contains valid values for this field.
HMP_NAME	A	Name of the Hazard Mitigation Plan in which the community participates.
HMP_EXPIRE	A	Expiration date of the Hazard Mitigation Plan in which the community participates.
POL_TYP	R	Political Boundary Type (i.e., Local, County, State, Federal) – Used for symbology on the FRM.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the community lies shall be used.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail. See the definition in L_Source_Cit for additional detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ FRD_Pol_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
POL_AR_ID	UPK	R	Text	25		N/A
DFIRM_ID		R	Text	6		N/A
CID	UPK, FK	R	Text	12		L_CSLF_Summary, L_AOMI_Summary, L_Claims, L_Exposure, and L_RA_Summary
POL_NAME1		R	Text	50		N/A
POL_NAME2		A	Text	50		N/A
CO_FIPS		R	Text	3		N/A
ST_FIPS		R	Text	2		D_State_FIPS
COMM_NO		R	Text	4		N/A
POPULATION		R	Long Integer	Default		N/A
TOT_POP		R	Long Integer	Default		N/A
PCT_POP		R	Double	Default	Default	N/A
LND_AR_SM		R	Double	Default	Default	N/A
TOT_LND_AR		R	Double	Default	Default	N/A
PCT_LND_AR		R	Double	Default	Default	N/A
NFIPSTATUS		R	Text	1		D_TrueFalse
CRS_RATING		R	Short Integer	Default		D_CRS_Rating
PASTDECLAR		R	Long Integer	Default		N/A
FLD_POLICY		R	Long Integer	Default		N/A
POLICY_COV		R	Double	Default	Default	N/A
HMP_STATUS		R	Text	1		D_TrueFalse
HMP_NAME		A	Text	100		N/A
HMP_EXPIRE		A	Date	Default		N/A
POL_TYP		R	Text	3		D_Pol_Typ
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_FRD_Proj_Ar – FRD Project Area

This polygon feature class represents the spatial 'footprint' of the project (or portion of the project if multiple suites of products are created for the project). It is required to be populated. The single polygon that 'best' represents the project area should be used. These features shall be multi-part polygons to support non-contiguous Physical Map Revision (PMR) project footprints.

This feature class is used to clip other feature classes delivered in the FRD.

The S_FRD_Proj_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description. The FEMA case number is an alphanumeric identifier assigned to this project which is generated by the MIP. An example of a FEMA case number for a Flood Risk Project is 06-03-0002S, which is of the format YY-RR-####A. The YY represent the last two digits of the year, the RR is the FEMA Region, #### is a sequential number, and A is an alphabetic suffix, which is usually S for studies. The case number shall be entered into the field in this format, including hyphens.
PROJ_NM	R	Project Name (e.g., Watershed, USA).
H_DATUM	R	Horizontal Datum used for all feature classes and rasters used in the project. Normally this would be NAD83 [1986]. D_Horiz_Datum contains valid values for this field.
V_DATUM	R	Vertical Datum used for all feature classes and rasters used in the project. Normally this would be NAVD88. D_V_Datum contains valid values for this field.
PROJECTION	R	Projection used for all feature classes in project. Normally this would be GCS. D_Projection contains valid values for this field.
PROJ_ZONE	A	Projection Zone for the PROJECTION defined above, if applicable. Otherwise, use a null value. Generally this would only be used for UTM zones (i.e., 01, 02, ...). State Plane Zones are already included as part of the PROJECTION field.
PROJ_UNIT	R	Projection Unit for the PROJECTION defined above. Normally this would be Decimal Degrees (DECDEG) for FRDs where the vector data is in un-projected GCS.

Field Name	R/A/E/O	Description
V_UNITS	R	Vertical Units for rasters, elevations stored in attributes, etc., normally US Survey Feet (USFT). D_Length Units contains valid values for this field.
META_NM	R	Metadata filename (e.g., FRD_YRR1234S_metadata.xml).
HAZUS_VER	R	Hazus Version. The version of Hazus used in the risk assessments (e.g., 'MR4' or 'MR5').
CENSUS	R	Year of Census data used (e.g., 2000, 2010, etc.) for the Hazus analysis.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the project lies. If the project area spans multiple HUCs (e.g., large coastal study), populate this field with 'MULTI'.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ FRD_Proj_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CASE_NO	UPK	R	Text	12		N/A
PROJ_NM		R	Text	50		N/A
H_DATUM		R	Text	6		D_Horiz_Datum
V_DATUM		R	Text	6		D_V_Datum
PROJECTION		R	Text	6		D_Projection
PROJ_ZONE		A	Text	4		N/A
PROJ_UNIT		R	Text	6		D_Proj_Unit
V_UNITS		R	Text	4		D_Length_Units
META_NM		R	Text	50		N/A
HAZUS_VER		R	Text	4		N/A
CENSUS		R	Text	4		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
VERSION_ID		R	Text	11		N/A

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_FRM_Callout_Ln – Flood Risk Map Callouts

This polyline feature class is used to display the callout/leader lines on the FRM. The line must be digitized from a centroid of the callout box to the geographic feature being highlighted by the callout box. This is an enhanced feature class that can be populated when using callout images on the FRM.

The S_FRM_Callout_Ln layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
CALLOUT_ID	R	Callout Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
IMG_TITLE	R	Image Title. Title for placement with the callout box.
IMG_HEIGHT	R	Image Height. Height of the callout image depicted in inches on the map.
IMG_WIDTH	R	Image Width. Width of the callout image depicted in inches on the map.
IMG_CPTION	R	Image Caption. Caption to be placed under the image.
IMG_BINARY	R	Image Binary. The binary formatted image being depicted within the callout box. This image is stored as a managed raster as an attribute of the feature class.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field properties for the S_ FRM_Callout_Ln layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
CALLOUT_ID	UPK	R	Text	25		N/A
IMG_TITLE		R	Text	50		N/A
IMG_HEIGHT		R	Float	Default	Default	N/A
IMG_WIDTH		R	Float	Default	Default	N/A
IMG_CPTION		R	Text	254		N/A
IMG_BINARY		R	Raster	N/A		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A

Feature Class: S_HUC_Ar – Hydrologic Unit Code Boundaries

This polygon feature class depicts the watersheds in and around the project area. This feature class has sub-types by the level of hydrologic unit (i.e., 8, 10, 12 or 14) and using DIGITS as the sub-type field. It is required to be populated. The watershed boundaries delivered in this feature class should be based on the Watershed Boundary Dataset (WBD), which is a companion dataset to the National Hydrography Dataset (NHD).

The S_HUC_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
HUC_CODE	R	HUC Identifier (Primary Key). This should be the HUC identifier assigned by WBD.
HUC_NAME	R	Name of basin / sub-basin from WBD.
DIGITS	R	Number of digits in HUC-Code (8, 10, 12, or 14).
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ HUC_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
HUC_CODE	UPK	R	Text	14		N/A
HUC_NAME		R	Text	80		N/A
DIGITS		R	Short Integer	Default		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Inc_Flood_Scen_Ar – Increased Flooding Scenarios

This polygon feature class represents the additional areas that would be flooded by hypothetical increases of 1, 2 or 3 feet (or other user-defined values) above the base flood elevation level. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Inc_Flood_Scen_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
IFS_ID	R	Increased Flooding Scenarios Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which S_Inc_Flood_Scen_Ar lies. See the definition in S_FRD_Pol_Ar for more detail.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which S_Inc_Flood_Scen_Ar lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail.
RETURN_PER	R	Return Period. Indicates the return period for which the remaining fields apply. The valid values for this field are in the domain D_Event.
INCREASE	R	Increase in feet (1, 2, 3, etc.). The standard increments will be in whole feet, but fractional values are permissible (e.g., 1.5, 2.75, etc.) if specifically requested.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the coastal inundation area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field Name	R/A/E/O	Description
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_Inc_Flood_Scen_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
IFS_ID	UPK	R	Text	25		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
RETURN_PER		R	Text	6		D_Event
INCREASE		R	Float	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Lev_Breach_Pt – Levee Community-Supplied Breach and Armored Overtopping Locations

This point feature class identifies specific high-risk location(s) for breaches or armored overtopping locations along the levee, as provided by the community. Types of breaches can include historic locations, overtopping locations and potential engineered breach locations. This dataset can also include Armored Overtopping locations where the levee crest is below the base flood elevation but is expected to withstand the overtopping without an erosive breach. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Lev_Breach_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
BR_PT_ID	R	Levee Elements Points Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
LEVEE_ID	R	Foreign Key to Risk Map Levees
PT_TYP	R	Levee Elements Point Type. Uses D_Breach_Pt_Typ domain.
ORIGIN	R	Origin of the Data.
BR_DATE	A	Date of breach or overtopping (if historical).
BR_IN_WID	R	Initial width in feet of breach or overtopping.
BR_MAX_WID	R	Maximum width in feet of breach or overtopping.
BR_IN_HGT	R	Initial height in feet of breach or overtopping.
BR_MAX_HGT	R	Maximum height in feet of breach or overtopping.
BR_IN_TIME	R	Initial time in minutes of breach or overtopping.
BR_DEV_TIME	R	Time in minutes of development for breach or overtopping.
BR_MAX_TIME	R	Time in minutes to maximum breach or overtopping
SCENAR_ID	R	Levee Scenario Identifier (Link to L_Levee_Scenario)
DESCRIP	A	Additional Descriptive Information
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee breach point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.

Field Name	R/A/E/O	Description
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field properties for the S_ Lev_Breach_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
BR_PT_ID	UPK	R	Text	25		N/A
LEVEE_ID	FK	R	Text	25		S_Levee_Ln
PT_TYP		R	Text	1		D_Breach_Pt_Typ
ORIGIN		R	Text	50		N/A
BR_DATE		A	Date	Default		N/A
BR_IN_WID		R	Double	Default	Default	N/A
BR_MAX_WID		R	Double	Default	Default	N/A
BR_IN_HGT		R	Double	Default	Default	N/A
BR_MAX_HGT		R	Double	Default	Default	N/A
BR_IN_TIME		R	Double	Default	Default	N/A
BR_DEV_TIME		R	Double	Default	Default	N/A
BR_MAX_TIME		R	Double	Default	Default	N/A
SCENAR_ID	FK	R	Text	25		L_Levee_Scenario
DESCRIP		A	Text	50		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_Lev_Elements_Pt – Levee Element Locations

This point feature class contains locations and information (such as capacity) for drainage and protection features along the levee. These include but are not limited to, pumps, gravity conduits, sleeves and closure structures. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Lev_Elements_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
LEV_PT_ID	R	Levee Elements Points Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
LEVEE_ID	R	Foreign Key to Risk Map Levees (S_Levee_Ln)
LEV_PT_TYP	R	Levee Elements Point Type. Uses D_Levee_Pt_Typ domain.
DESCRIP	A	Additional Descriptive Information
ORIGIN	A	Additional information on the origin of the data.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field properties for the S_ Lev_Elements_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
LEV_PT_ID	UPK	R	Text	25		N/A
LEVEE_ID	FK	R	Text	25		S_Levee_Ln
LEV_PT_TYP		R	Text	5		D_Levee_Pt_Typ
DESCRIP		A	Text	50		N/A
ORIGIN		A	Text	50		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_Lev_Freeboard_Ln – Levee Freeboard

This polyline feature class contains freeboard information along the levee for different scenarios. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Lev_Freeboard_Ln layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
FREEBRD_ID	R	Freeboard identifier. Primary Key-Unique Identifier.
LEVEE_ID	R	Foreign Key to Risk Map Levees. (S_Levee_Ln)
SCENAR_ID	R	Levee Scenario Identifier (Link to L_Levee_Scenario)
FRB_VAL	R	Freeboard Range Associated with this Line Segment, Rounded to Nearest Foot, -1-0 shown as 0, 0-1 shown as 1, 1-2 shown as 2, 2-3 shown as 3
DESCRIP	A	Additional Descriptive Information
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee freeboard line lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field properties for the S_ Lev_Freeboard_Ln layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
FREEBRD_ID	UPK	R	Text	25		N/A
LEVEE_ID	FK	R	Text	25		S_Levee_Ln
SCENAR_ID	FK	R	Text	25		L_Levee_Scenario
FRB_VAL		R	Short Integer	Default		N/A
DESCRIP		A	Text	50		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A

Feature Class: S_Lev_Inundation_Ar – Levee Analysis Impact Area

This polygon feature class contains extents of flooding behind a levee for various scenarios such as different precipitation events. This includes the Levee Shadow event, which represents the extents of the impacted area behind a levee based on the levee crest elevation. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Lev_Inundation_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
LEV_INUN_ID	R	Levee inundation area identifier. Primary Key-Unique Identifier.
LEVEE_ID	R	Foreign Key to Risk Map Levees. (S_Levee_Ln)
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this inundation area lies. This may require subdividing the inundation areas using the S_FRD_Pol_Ar feature class. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the inundation lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
SCENAR_ID	R	Levee Scenario Identifier (Link to L_Levee_Scenario)
AREA_SF	R	Area of Inundation in Square Feet
AREA_SM	R	Area of Inundation in Square Miles
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the inundation area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field Name	R/A/E/O	Description
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ Lev_Inundation_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
LEV_INUN_ID	UPK	R	Text	25		N/A
LEVEE_ID	FK	R	Text	25		S_Levee_Ln
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
SCENAR_ID	FK	R	Text	25		L_Levee_Scenario
AREA_SF		R	Double	Default	Default	N/A
AREA_SM		R	Double	Default	Default	N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_Lev_Rating_Curve_Pt – Levee Rating Curve Locations

This point feature class contains locations along a levee where a rating curve has been developed. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Lev_Rating_Curve_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
RATCURPTID	R	Rating curve point identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table. This is also the Foreign Key to the Levee Rating Curve Table.
LEVEE_ID	R	Foreign Key to Risk Map Levees. (S_Levee_Ln)
DESCRIP	A	Additional Descriptive Information
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee rating curve point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field properties for the S_ Lev_Rating_Curve_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
RATCURPTID	UPK	R	Text	25		N/A
LEVEE_ID	FK	R	Text	25		S_Levee_Ln
DESCRIP		A	Text	50		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_Levee_Ln – Levee Locations

This polyline feature class contains location and attributes for the levee as a line feature along the top of a levee. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Levee_Ln layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
LEVEE_ID	R	Levee Identifier. Primary Key-Unique Identifier.
NAME	R	Common Name of Levee
FEMA_LEV_ID	R	FEMA Midterm Levee Inventory Segment Identifier
AOMI_ID	R	Foreign Key to Area of Mitigation Interest (AoMI)
OWNER	R	Name of Owner, as Well as Builder and/or Designer if Applicable
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this inundation area lies. This may require subdividing the inundation areas using the S_FRD_Pol_Ar feature class. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the inundation lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
LENGTH_FT	R	Length of levee in feet as described in levee analysis
HEIGHT_FT	R	Average height of levee in feet as described in levee analysis
TOP_WIDTH	R	Average width at top of levee in feet as described in levee analysis
BOT_WIDTH	R	Average width at bottom of levee in feet as described in levee analysis
FREEBOARD	R	Design Freeboard in Feet
EAP	R	Existence of Emergency Action Plan (Uses D_TrueFalse domain)
EAP_ORG_NM	R	Name of Organization that Maintains the EAP
EAP_ORG_URL	R	URL of the Organization that Maintains the EAP

Field Name	R/A/E/O	Description
YEAR_BUILT	R	Year Levee was Built (YYYY)
CONST_TYPE	R	Construction Type (Uses D_Const_Typ domain)
DESCRIP	A	Additional Descriptive Information
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field properties for the S_ Levee_Ln layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
LEVEE_ID	UPK	R	Text	25		N/A
NAME		R	Text	128		N/A
FEMA_LEV_ID	FK	R	Text	25		N/A
AOMI_ID	FK	R	Text	25		S_AOMI_Pt
OWNER		R	Text	100		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
LENGTH_FT		R	Double	Default	Default	N/A
HEIGHT_FT		R	Double	Default	Default	N/A
TOP_WIDTH		R	Double	Default	Default	N/A
BOT_WIDTH		R	Double	Default	Default	N/A
FREEBOARD		R	Double	Default	Default	N/A
EAP		R	Text	1		D_TrueFalse
EAP_ORG_NM		R	Text	128		N/A
EAP_ORG_URL		R	Text	50		N/A
YEAR_BUILT		R	Text	4		N/A
CONST_TYPE		R	Text	4		D_Const_Typ
DESCRIP		A	Text	50		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A

Feature Class: S_PFD_Ar – Dune Size and Location

This polygon feature class depicts the spatial extent of the FEMA regulatory PFD, delineated between the dune toe and heel. The creation of this dataset is only applicable in coastal areas where dunes are present. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_PFD_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
PFD_ID	R	PFD Identifier. User-defined Primary Key/Unique Identifier. This field should be sequentially numbered for all records in the table.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this S_PFD_Ar lies. See the definition in S_FRD_Pol_Ar for more detail.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the S_PFD_Ar lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail.
TOPO_SRC	R	Source of the topographic data from which the PFD was delineated.
TOPO_DATE	R	Date of the topographic data source from which the PFD was delineated.
DELIN_DATE	R	Date of feature delineation.
PFD_TF	R	Part of the PFD (True or False). Uses D_TrueFalse domain.
DUNE_SIZE	R	Dune Size. This is the relative size of the dune, most commonly determined by the erosion analysis for the flood study. Valid values for this field are in the domain D_PFD_Size – SMALL, LARGE, or UNKNOWN .
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the primary frontal dune erosion area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field Name	R/A/E/O	Description
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ PFD_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
PFD_ID	UPK	R	Text	25		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
TOPO_SRC		R	Text	100		N/A
TOPO_DATE		R	Date	Default		N/A
DELIN_DATE		R	Date	Default		N/A
PFD_TF		R	Text	1		D_TrueFalse
DUNE_SIZE		R	Text	4		D_PFD_Size
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_RM_Dams_Pt – Dam Locations

This point feature class identifies the dams within the Flood Risk Project area for which additional dam-related flood risk datasets have been developed. This is an enhanced feature class that is required to be populated when any of the other enhanced dam-related feature classes have been produced.

The S_RM_Dams_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
RM_DAMS_ID	R	Risk Map Dams Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
NAME	R	Name most commonly used to reference the dam.
DESCRIP	R	Description of dam to be used in Flood Risk Report.
NID_ID	R	National Inventory of Dams Identifier. Foreign Key to the National Inventory of Dams database.
AOMI_ID	R	Area of Mitigation Interest Identifier. Foreign Key to the S_AOMI_Pt feature class.
OWNER	R	Name of the dam owner, as well as builder and/or designer if applicable. For example if a municipality was the current owner/operator of a dam which was designed and constructed by the US Army Corps of Engineers (USACE), an appropriate entry to this field would be “City of Smallville / USACE”.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this dam lies. See the definition in S_FRD_Pol_Ar for more detail. If the dam point does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the Dam lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the Dam does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
ST_FIPS	R	State FIPS code for the State where the dam is located (Uses D_State_FIPS domain)

Field Name	R/A/E/O	Description
HAZ_CLASS	R	Hazard classification (High, Significant, Low). Metadata must provide State definitions for each classification and how the State classifications were translated into the standardized classifications above. (Uses D_HAZ_Class domain)
YEAR_BUILT	R	Year in which the dam was constructed (YYYY).
CONST_TYPE	R	The type of construction of the dam (e.g., RCC, Earth Fill, etc.). (Uses D_Const_Typ domain)
LENGTH_FT	R	The length of the dam (measured in feet).
HEIGHT_FT	R	The height of the dam (measured in feet).
DRN_AR_SM	R	The drainage area (measured in square miles).
NORMSTORAF	R	The volume of water stored at normal pool (measured in acre-feet).
TODSTORAF	R	The total volume of water stored when pool is at the top of dam (measured in acre-feet).
TOD_ELEV	R	The top of dam elevation (measured in feet). The datum and units for the top of dam elevation shall be documented in the S_FRD_Proj_AR. For the majority of cases, the datum should be NAVD88. Uses D_V_Datum domain.
EAP	R	Existence of an Emergency Action Plan (T/F). Uses D_TrueFalse domain.
EAP_ORG_NM	A	The name of the organization where the EAP is maintained, if the field above is false, the organization name will be listed as Null.
EAP_ORG_URL	A	The internet URL for the organization where the EAP is maintained, if the field above is false, the organizations URL will be listed as Null.
DEFICIENCS	R	Existence of any known dam safety deficiencies (T/F). Uses D_TrueFalse domain.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the dam point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field properties for the S_ RM_Dams_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
RM_DAMS_ID	UPK	R	Text	25		N/A
NAME		R	Text	128		N/A
DESCRIP		R	Text	128		N/A
NID_ID	FK	R	Text	25		N/A
AOMI_ID	FK	R	Text	25		S_AOMI_Pt
OWNER		R	Text	100		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
ST_FIPS		R	Text	2		D_State_FIPS
HAZ_CLASS		R	Text	4		D_HAZ_Class
YEAR_BUILT		R	Text	4		N/A
CONST_TYPE		R	Text	4		D_Const_Typ
LENGTH_FT		R	Double	Default	Default	N/A
HEIGHT_FT		R	Double	Default	Default	N/A
DRN_AR_SM		R	Double	Default	Default	N/A
NORMSTORAF		R	Double	Default	Default	N/A
TODSTORAF		R	Double	Default	Default	N/A
TOD_ELEV		R	Double	Default	Default	N/A
EAP		R	Text	1		D_TrueFalse
EAP_ORG_NM		A	Text	128		N/A
EAP_ORG_URL		A	Text	128		N/A
DEFICIENCS		R	Text	1		D_TrueFalse
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_Simple_Cst_Zone_Ar – Simplified Coastal Zones

This polygon feature class represents the relative level of wave action within the coastal 1% annual chance floodplain. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_Simpl_Cst_Zone_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
SCZ_ID	R	Simplified Coastal Zones Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which S_Simpl_Cst_Zone_Ar lies. See the definition in S_FRD_Pol_Ar for more detail.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which S_Simpl_Cst_Zone_Ar lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail.
WAVE_HAZ	R	Wave Action Level. Indicates the relative level of wave action within the coastal 1% annual chance floodplain. The valid values for this field are in the domain D_Wave_Haz: HIGH (areas designated as coastal high hazard areas – V or VE, including the primary frontal dune if present), MODERATE (Coastal A Zone areas with wave heights between 1.5 and 3 feet), and MINIMAL (A Zone areas with wave heights less than 1.5 feet).
BLDG_COUNT	O	Optional field that can be populated with a count of the number of buildings within each wave hazard feature polygon if a building footprint feature class exists.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the coastal inundation area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field Name	R/A/E/O	Description
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_Simpl_Cst_Zone_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
SCZ_ID	UPK	R	Text	25		N/A
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
WAVE_HAZ		R	Text	4		D_Wave_Haz
BLDG_COUNT		O	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Feature Class: S_UDF_Pt – User Defined Facility (UDF) Locations

This point feature class locates UDFs for which site- or location-specific risk assessments are performed. There is one record for each UDF assessed. The results are stored in a risk assessment table (L_RA_UDF_Summary) and related to this point feature class (at the centroid of the building footprint, parcel boundary, etc.) This feature class is required to be populated when flood risk assessments for a Flood Risk Project are performed at the site-specific level.

This feature class provides the location and inventory data where site-specific risk assessments were performed. This table is linked with the L_RA_UDF_Results table to allow presentation of the UDF analysis on a thematic map.

The S_UDF_Pt layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
UDF_ID	R	UDF Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CEN_BLK_ID	R	Census Block Identifier. See the CEN_BLK_ID field in the S_CenBlk_Ar feature class for more detail.
OCCUP_TYP	R	Specific Occupancy Type from risk assessment analysis. Uses D_Occupancy_Typ for valid values.
FACLTY_TYP	R	Facility Type. Uses D_Facility_Typ for valid values.
ARV_BLDG	R	Asset Replacement Value of Building.
ARV_CNTNT	R	Asset Replacement Value of Contents.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the point representing the facility lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the S_UDF_Pt layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
UDF_ID	UPK, FK	R	Text	25		L_RA_UDF_Results
CEN_BLK_ID	FK	R	Text	17		S_CenBlk_Ar
OCCUP_TYP		R	Text	5		D_Occupancy_Typ
FACLTY_TYP		R	Text	4		D_Facility_Typ
ARV_BLDG		R	Long Integer	Default		N/A
ARV_CNTNT		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Feature Class: S_US_Inundation_Ar – Dam Upstream Inundation Areas

This polygon feature class contains flood inundation areas upstream of a dam for various scenarios. This is an enhanced feature class that is required to be populated when this dataset is specifically included as part of the Flood Risk Project scope.

The S_US_Inundation_Ar layer contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SHAPE	R	Shape Geometry Field. Internal field used by ArcGIS software to store the feature geometry.
US_INUN_ID	R	Upstream Inundation Identifier. User-defined Primary Key/Unique Identifier. This field should be sequentially numbered for all records in the table.
RM_DAMS_ID	R	Risk Map Dams Identifier. Foreign Key to S_RM_Dams_Pt feature class.
CID	A	Community Identification Number. This is the six-digit CID assigned by FEMA in which this inundation area lies. This may require subdividing the inundation areas using the S_FRD_Pol_Ar feature class. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
POL_NAME1	A	Political Area Name 1. This is the primary name of the community in which the inundation area lies. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. If the inundation area does not lie in an area covered by a FEMA community identifier, this field shall be populated with a null value.
SCENAR_ID	R	Scenario Identifier. Foreign Key to the L_Dam_Scenario table.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the inundation area lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.
SHAPE_LENGTH	R	Internal field used by ArcGIS software to store the length of the feature's geometry.

Field Name	R/A/E/O	Description
SHAPE_AREA	R	Internal field used by ArcGIS software to store the area of the feature's geometry.

Field properties for the S_ US_Inundation_Ar layer are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SHAPE		R	Geometry	Default		N/A
US_INUN_ID	UPK	R	Text	25		N/A
RM_DAMS_ID	FK	R	Text	25		S_RM_Dams_Pt
CID	FK	A	Text	6		S_FRD_Pol_Ar
POL_NAME1		A	Text	50		N/A
SCENAR_ID	FK	R	Text	25		L_Dam_Scenario
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit
SHAPE_LENGTH		R	Double	Default	Default	N/A
SHAPE_AREA		R	Double	Default	Default	N/A

Table: FRD_Model_Info – Engineering Model Information

This table describes the models that were used in the most recent update completed for a Flood Risk Project and the prior analyses. This table will have one record for each unique combination of models used to create the SFHAs that were used to develop the S_CSLF_Ar feature class. Each record in the table could apply to many polygons in the S_CSLF_Ar feature class. This table is required to be populated when the Changes Since Last FIRM dataset is produced.

This table is the intermediary between the S_CSLF_Ar feature class and the FRD_Study_Info table.

This table is linked to the S_CSLF_Ar table to provide an easy way to determine which model(s) are associated with each CSLF polygon.

The FRD_Model_Info table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
MDL_NFO_ID	R	Model Info Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
STD_NFO_ID	R	Study Info Identifier. Foreign Key to FRD_Study_Info table to uniquely identify which study the model came from.
EFF_DATE	R	Effective Date for FIRM created with this model combination.
ANLYS_DATE	R	Analysis date when models were run. If the varying models are executed on different dates (e.g., the hydrologic model was executed a month before the hydraulic model), then the ANLYS_DATE field is populated with the latter of all the model execution dates.
STUDY_TYP	R	Study Type. Describes the type of study for which modeling was performed. Uses D_Study_Typ for possible values.
HYDRO_MDL	A	Hydrologic Model used for the Analysis; null if not applicable. Uses D_Hydro_Mdl for possible values.
HYDRA_MDL	A	Hydraulic Model used for the Analysis; null if not applicable. Uses D_Hydra_Mdl for possible values.
SURGE_MDL	A	Surge Model used for the Analysis; null if not applicable. Uses D_Surge_Mdl for possible values.
WAVEHT_MDL	A	Wave Height Model used for the Analysis, null if not applicable. Uses D_Wave_Mdl for possible values.
RUNUP_MDL	A	Run-up Model used for the Analysis, null if not applicable. Uses D_Runup_Mdl for possible values.

Field Name	R/A/E/O	Description
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin that the modeling represents. If the model affects multiple sub-basins, then populate this field with 'MULTI'.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the FRD_Model_Info table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
MDL_NFO_ID	UPK	R	Text	25		S_CSLF_Ar
STD_NFO_ID	FK	R	Text	25		FRD_Study_Info
EFF_DATE		R	Date	Default		N/A
ANLYS_DATE		R	Date	Default		N/A
STUDY_TYP		R	Text	4		D_Study_Typ
HYDRO_MDL		A	Text	4		D_Hydro_Mdl
HYDRA_MDL		A	Text	4		D_Hydra_Mdl
SURGE_MDL		A	Text	4		D_Surge_Mdl
WAVEHT_MDL		A	Text	4		D_Wave_Mdl
RUNUP_MDL		A	Text	4		D_Runup_Mdl
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: FRD_Study_Info – Study Information

The FRD_Study_Info table contains details about the FIRM projects in the Flood Risk Project. There should be one record for each FIRM within the project extents whose data has been incorporated into the FRD. This table is required to be populated.

The FRD_Study_Info table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
STD_NFO_ID	R	Study Info Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table. After aggregating the Study_Info tables from multiple FIRM databases, this field will likely need to be renumbered to provide unique values for all records in the table.
DFIRM_ID	R	Regulatory Product Identifier. 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). Within each FIRM database, the DFIRM_ID value is identical.
STUDY_PRE	A	Study Prefix. This is the prefix of the Flood Risk Project name such as 'City of' or 'Town of'. This field is applicable for single-jurisdiction maps where the type of jurisdiction precedes the name of the jurisdiction in the map title. For county-wide maps or maps of the unincorporated portions of a county, this field is null. Acceptable values for this field are listed in the D_Study_Prefix domain.
STUDY_NM	R	Study Name. This attribute contains the main portion of the Flood Risk Project name, which is shown in the title block of the hardcopy FIRM. For county-wide FIRMs, or FIRMs for the unincorporated portions of counties, the name should include the county or county equivalent descriptor (e.g., Washington County or Iberia Parish).
STATE_NM	R	State Name. This attribute contains the State name for the Flood Risk Project and is shown in the title block of the hardcopy FIRM. Acceptable values are listed in the D_State_Name domain.
CNTY_NM	R	County Name. This is the county (or county equivalent) name that the Flood Risk Project falls within. The name should include the county or county equivalent descriptor (e.g., Washington County or Iberia Parish). The county name is also shown in the title block section of the hardcopy FIRM. If the study affects multiple counties, then populate this field with 'MULTI'.

Field Name	R/A/E/O	Description
JURIS_TYP	A	Political Jurisdiction Type. This attribute contains the type of jurisdiction for the political entity. This field is populated when the political entity has an associated jurisdiction type. If there is data in this attribute, it is also shown in the title block section of the hardcopy FIRM. Acceptable values for this field are listed in the D_Jurisidiction_Typ domain. If the study affects multiple jurisdictions, then populate this field with '9000 – Other'.
H_DATUM	R	Horizontal Datum. Valid entries for this attribute include NAD27 or NAD83. This is the horizontal datum used for the printed FIRM. The horizontal datum describes the reference system on which the horizontal coordinate information shown on the FIRM is based. NAD83 is the preferred horizontal datum. Acceptable values for this field are listed in the D_Horiz_Datum domain.
V_DATUM	R	Vertical Datum. This is the vertical datum of the printed FIRM. The vertical datum describes the reference surface from which elevation on the map is measured. Normally this would be NAVD88 for new studies. Acceptable values for this field are listed in the D_V_Datum table.
PROJECTION	R	Map Projection used for hardcopy FIRM publication. Acceptable values for this field are listed in the D_Projection domain.
PROJ_ZONE	A	Projection Zone for the PROJECTION defined above, if applicable. Otherwise, use a null value. Generally this would only be used for UTM zones (i.e., 01, 02, ...). State Plane Zones are already included as part of the PROJECTION field.
PROJ_UNIT	R	Projection Unit. When using map projections and coordinate systems, there is a unit associated with the projection defined in the PROJECTION field. This field is populated based on the projection selected for the final hardcopy map production. Acceptable values for this field are listed in the D_Proj_Unit table.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the FRD_Study_Info table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
STD_NFO_ID	UPK	R	Text	25		N/A
DFIRM_ID		R	Text	6		N/A
STUDY_PRE		A	Text	4		D_Study_Prefix
STUDY_NM		R	Text	128		N/A
STATE_NM		R	Text	4		D_State_Name
CNTY_NM		R	Text	128		N/A
JURIS_TYP		A	Text	4		D_Jurisdiction_Typ
H_DATUM		R	Text	6		D_Horiz_Datum
V_DATUM		R	Text	6		D_V_Datum
PROJECTION		R	Text	6		D_Projection
PROJ_ZONE		A	Text	4		N/A
PROJ_UNIT		R	Text	6		D_Proj_Unit
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: FRR_Custom – Flood Risk Report Custom Text

This table stores custom text written for the project and communities in Section 3 of the FRR, Flood Risk Analysis Results. The actual text is to be stored as an Office Open XML 2.0 compliant markup fragment containing only text and styles. There is one record for each community and one record for the project level summary for Section 3 of the FRR. This is an enhanced table that can be populated if custom text has been added into Section 3 of the FRR.

The FRR_Custom table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
FRR_CUSTID	R	FRR Custom ID. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See the CID field in FRD_Pol_Ar for a more detailed explanation. For the case of the project summary record, the FRR_CUSTID field should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
OVERVIEW_1	R	Custom text for overview paragraphs before the table in the Overview section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
OVERVIEW_2	A	Custom text for overview paragraphs after the table in the Overview section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
CSLF_1	R	Custom report text for Changes Since Last FIRM paragraphs before the table in the CSLF section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
CSLF_2	A	Custom report text for Changes Since Last FIRM paragraphs after the table in the CSLF section of each community, but before the Buildings and Population summary table. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
CLSF_3	A	Custom report text for Changes Since Last FIRM paragraphs after the Buildings and Population summary table. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
PRV_EFFDAT	R	Previous Effective Date. Custom text for previous FIRM effective date in plain text (e.g., “September 10, 2004”). Appears below the CSLF table in Section 3 of the FRR.
CUR_EFFDAT	R	Current Effective Date. Custom text for current FIRM effective date in plain text (e.g., “September 30, 2008”). Appears below the CSLF table in Section 3 of the FRR.

Field Name	R/A/E/O	Description
FDAG	R	Flood Depth and Analysis Grids text. Custom text for flood depth and analysis grids paragraphs. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_1	R	Custom text for estimated loss information (ELI) paragraphs before the table in the estimated loss information section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_2	A	Custom text for ELI paragraphs after the table in the estimated loss information section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_DAM_1	A	Custom text for ELI paragraphs for dams before the table in the estimated loss information for dams section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_DAM_2	A	Custom text for ELI paragraphs for dams after the table in the estimated loss information for dams section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_LEV_1	A	Custom text for ELI paragraphs for levees before the table in the estimated loss information for levees section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
ELI_LEV_2	A	Custom text for ELI paragraphs for levees after the table in the estimated loss information for levees section of each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
COASTAL_1	A	Custom text for coastal specific datasets before the table of increased inundation areas for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
COASTAL_2	A	Custom text for coastal specific datasets after the table of increased inundation areas for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_LOC_1	A	Custom text before the table of dam locations for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_LOC_2	A	Custom text after the table of dam locations for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_INUN_1	A	Custom text before the table of inundation areas above and below the dams for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.

Field Name	R/A/E/O	Description
DAM_INUN_2	A	Custom text after the table of inundation areas above and below the dams for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_ESMNT1	A	Custom text before the table of easements for the dams studied for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_ESMNT2	A	Custom text after the table of easements for the dams studied for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
DAM_CRFAC	A	Custom text describing the critical facilities that could be impacted by a dam release. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
LEV_LOC_1	A	Custom text before the table of levee system locations for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
LEV_LOC_2	A	Custom text after the table of levee system locations for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
LEV_INUN_1	A	Custom text before the table of levee system inundation areas for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
LEV_INUN_2	A	Custom text after the table of levee system inundation areas for each community. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
LEV_CRFAC	A	Custom text describing the critical facilities that could be impacted by a levee breach. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
AOMI_1	R	Custom text for areas of mitigation interest paragraphs before the table in the AoMIs section for each community in Section 3 of the FRR. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
AOMI_2	A	Custom text for areas of mitigation interest paragraphs after the table in the AoMIs section for each community in Section 3 of the FRR. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the FRR_Custom table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
FRR_CUSTID	UPK, FK	R	Text	25		S_FRD_Pol_Ar
OVERVIEW_1		R	Blob	Default		N/A
OVERVIEW_2		A	Blob	Default		N/A
CSLF_1		R	Blob	Default		N/A
CSLF_2		A	Blob	Default		N/A
CSLF_3		A	Blob	Default		N/A
PRV_EFFDAT		R	Text	18		N/A
CUR_EFFDAT		R	Text	18		N/A
FDAG		R	Blob	Default		N/A
ELI_1		R	Blob	Default		N/A
ELI_2		A	Blob	Default		N/A
ELI_DAM_1		A	Blob	Default		N/A
ELI_DAM_2		A	Blob	Default		N/A
ELI_LEV_1		A	Blob	Default		N/A
ELI_LEV_2		A	Blob	Default		N/A
COASTAL_1		A	Blob	Default		N/A
COASTAL_2		A	Blob	Default		N/A
DAM_LOC_1		A	Blob	Default		N/A
DAM_LOC_2		A	Blob	Default		N/A
DAM_INUN_1		A	Blob	Default		N/A
DAM_INUN_2		A	Blob	Default		N/A
DAM_ESMNT1		A	Blob	Default		N/A
DAM_ESMNT2		A	Blob	Default		N/A
DAM_CRFAC		A	Blob	Default		N/A
LEV_LOC_1		A	Blob	Default		N/A
LEV_LOC_2		A	Blob	Default		N/A
LEV_INUN_1		A	Blob	Default		N/A
LEV_INUN_2		A	Blob	Default		N/A
LEV_CRFAC		A	Blob	Default		N/A
AOMI_1		R	Blob	Default		N/A
AOMI_2		A	Blob	Default		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: FRR_Images – Flood Risk Report Images

This table stores custom images in the FRR. This includes the FRM image at the beginning of Section 3 that is displayed once, as well as custom sidebar images in each of the community results. If an image is for a community within Section 3, the CID field is populated. If it is not, it is assumed to be the FRM image. This is an enhanced table that can be populated if custom images have been added into the FRR.

The FRR_Images table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
FRR_IMG_ID	R	FRR Image Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
CID	R	Community Identification Number. This is the six-digit CID assigned by FEMA that this image pertains to and appears in that communities' section of the FRR. See S_FRD_Pol_Ar for more detail. For images in the project level custom text, use the FEMA Case Number to populate this field.
IMG_BINARY	R	Binary field containing the image. The image is stored in the fGDB as a managed raster, not a link to a location in the folder structure for the project.
IMG_HEIGHT	R	Height of the image in the document in inches.
IMG_WIDTH	R	Width of the image in the document in inches.
IMG_CPTION	R	Caption placed on the image.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the FRR_Images table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
FRR_IMG_ID	UPK	R	Text	25		N/A
CID	FK	R	Text	12		S_FRD_Pol_Ar
IMG_BINARY		R	Raster	N/A		N/A
IMG_HEIGHT		R	Float	Default	Default	N/A
IMG_WIDTH		R	Float	Default	Default	N/A
IMG_CPTION		R	Text	50		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: FRR_Project – Flood Risk Report Project Information

This table stores report material specific to the entire project (i.e., project-level, custom text for Section 7 of the FRR). Any text is to be stored as an Office Open XML 2.0 compliant markup fragment containing only text and styles. There should be one record in this table. This is an enhanced table that can be populated when an FRR is produced.

The FRR_Project table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
FRR_PRJ_ID	R	FRR Project Identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
DATA_USED	R	Custom text for Section 7, *Data Used to Develop Flood Risk Products* in the FRR. This is an Office Open XML 2.0 compliant markup fragment containing only text and styles.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the FRR_Project table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
FRR_PRJ_ID	UPK	R	Text	25		N/A
DATA_USED		R	Blob	Default		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_AOMI_Summary – Areas of Mitigation Interest Community Summary Table

This table stores summary counts by various classifications of AoMI points by community or partial community within the project area. It is required to be populated when the Areas of Mitigation Interest (AoMI) dataset is produced.

There is one record for each unique combination of community, mitigation interest type and data source. There is also a set of summary records for the project area. This table is linked with the S_FRD_Pol_Ar to allow visualization of this summary on a thematic map.

The L_AOMI_Summary table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
AOMISUMMID	R	AoMI Summary Identification Number. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See the CID field in FRD_Pol_Ar for a more detail explanation. For the case of the project summary record, the AOMISUMMID should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
POL_NAME1	R	Political Area Name 1 - This is the primary name of the community. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail.
AOMI_CLASS	R	AOMI Classification. Describes the class of the AOMI (e.g., Riverine, Coastal, Past Claims, and Mitigation). Refer to the D_AOMI_Class domain for possible values.
AOMI_TYP	R	AOMI Type. Identifies the type of the AOMI (e.g., Dams, Levee Status, etc.). This field is used as the first column in the sample FRR table above. There should be one row in the above table for each different AOMI_TYP. Refer to the D_AOMI_Typ domain for possible values.
AOMI_CAT	R	AOMI Category. Categorizes the various information sources for standardization of names. Refer to D_AOMI_SourceCat for possible values.
AOMI_SRCE	R	AOMI Source. Describes the information source of the AoMIs data (e.g., State Cooperating Technical Partner (CTP), local public works, etc.). The Mapping Partner should exercise care in standardizing the spelling of data sources within a Flood Risk Project (i.e., the AOMI_SRCE field in S_AOMI_Pt feature class, so that this summary table can be generated semi-automatically based on unique AOMI_SRCE in that feature class.

Field Name	R/A/E/O	Description
TOTAL	R	This is the total count of the number of AoMIs for each AoMI Type by AoMI Source in the S_AOMI_Pt feature class.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the community lies shall be used. For the project-level record (i.e., AOMISUMMID = CASE_NO), this field should be populated with "NP".
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_AOMI_Summary table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
AOMISUMMID	UPK, FK	R	Text	12		S_FRD_Pol_Ar
POL_NAME1		R	Text	50		N/A
AOMI_CLASS		R	Text	4		D_AOMI_Class
AOMI_TYP	UPK	R	Text	4		D_AOMI_Typ
AOMI_CAT		R	Text	4		D_AOMI_SourceCat
AOMI_SRCE	UPK	R	Text	50		N/A
TOTAL		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_Claims – Community Claims Table

This table stores historic claims and repetitive loss information for each community or partial community within the project area. It is required to be populated if there are 5 or more claims, 5 or more repetitive loss claims or 5 or more severe repetitive loss claims in a community within the project area. There should be one record in the table for each community or partial community in the project area. There should also be an additional record for the totals for the entire project area.

This table is linked with the S_FRD_Pol_Ar to allow visualization of this summary for ad-hoc thematic mapping.

The L_Claims table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
CLAIMS_ID	R	Claims Identification Number. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See the FRD_Pol_Ar CID field for a more detailed explanation. For the case of the project summary record, the CLAIMS_ID should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
POL_NAME1	R	Political Area Name 1 - This is the primary name of the community. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. For the Project summary record (i.e., CLAIMS_ID = CASE_NO), the POL_NAME1 field should be populated with the project / sub-basin name (e.g., Watershed USA).
CLAIMS	R	Number of claims for the community or project area
CLAIMS_VAL	R	Total value of all claims for the community or project area. The value shall be stored in whole dollars, not thousands (e.g., $1,000,000, not $1,000 representing $1 million).
RLP_RES	R	Residential Repetitive Loss Properties. Count of Residential NFIP-recognized Repetitive Loss Properties.
RLP_COM	R	Commercial Repetitive Loss Properties. Count of Commercial NFIP-recognized Repetitive Loss Properties.
RLV_RES	R	Value of Residential NFIP-recognized Repetitive Loss Properties. The value shall be stored in whole dollars, not thousands (e.g., $1,000,000, not $1,000 representing $1 million).

Field Name	R/A/E/O	Description
RLV_COM	R	Value of Commercial NFIP-recognized Repetitive Loss Properties. The value shall be stored in whole dollars, not thousands (e.g., $1,000,000, not $1,000 representing $1 million).
SRL_RES	R	Severe Repetitive Loss Properties. Count of Residential NFIP-recognized Severe Repetitive Loss Properties.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the project area lies shall be used. For the project-level record (i.e., CLAIMS_ID = CASE_NO), this field should be populated with "NP."
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_Claims table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
CLAIMS_ID	UPK, FK	R	Text	12		S_FRD_Pol_Ar
POL_NAME1		R	Text	50		N/A
CLAIMS		R	Long Integer	Default		N/A
CLAIMS_VAL		R	Double	Default	Default	N/A
RLP_RES		R	Long Integer	Default		N/A
RLP_COM		R	Long Integer	Default		N/A
RLV_RES		R	Double	Default	Default	N/A
RLV_COM		R	Double	Default	Default	N/A
SRL_RES		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_CSLF_Summary – CSLF Community Summary Table

This table stores summary statistics of the CSLF analysis by Community, including the changes in area, population and number of buildings in the SFHA, non-SFHA, Floodway and Coastal High Hazard Areas (CHHA) (or V Zones). It is required to be populated when the Changes Since Last FIRM dataset is produced.

The table contains up to four records for each community with a unique CID in the project area. The four records are for the SFHA, non-SFHA, floodway and coastal high hazard areas for each community. The table also contains up to four records (SFHA, non-SFHA, FLDWY and CHHA) for the project total summaries.

In creating the L_CSLF_Summary table, the Mapping Partner should aggregate the polygon attribute values (i.e., area, population and building counts) in the S_CSLF_Ar feature class by community (e.g., city, town, village or unincorporated portion of a county). If individual CSLF polygons extend outside the project boundary in S_FRD_Proj_Ar, only the portion within the project boundary should be aggregated. The aggregated values should represent the totals for that portion of the community in the project area.

The L_CSLF_Summary table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
CSLFSUMMID	R	CSLF Summary Identification Number. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See the CID field in S_FRD_Pol_Ar for more detail explanation. For the case of the project summary record, the CSLFSUMMID should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
POL_NAME1	R	Political Area Name 1. This is the primary name of the community. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. For the Project summary record (i.e., CSLFSUMMID = CASE_NO), the POL_NAME1 field should be populated with the project / watershed name (e.g., Watershed USA).
LOCATION	R	This field is the location for which the summary statistic is being totaled. Available coded values include SFHA, NONSFHA, FLDWY, and CHHA, which are controlled by the D_SFHA_FLDWY domain.

Field Name	R/A/E/O	Description
AREA_SM	R	Area in square miles. This field is populated with the area in square miles for the respective location (SFHA, NONSFHA, FLDWAY, or CHHA) for that community. The area shall be measured based on the local coordinate system used during data compilation. The result shall be expressed to the nearest 0.1 square mile.
AREA_INCR	R	Area Increase. This field is populated with the increase in area in square miles for the respective location (SFHA, NONSFHA, FLDWAY, or CHHA) since the last FIRM for that community. The area shall be measured based on the local coordinate system used during data compilation. The result shall be expressed to the nearest 0.1 square mile.
AREA_DECR	R	Area Decrease. This field is populated with the decrease in area in square miles for the respective location (SFHA, NONSFHA, FLDWAY, or CHHA) since the last FIRM for that community. The area shall be measured based on the local coordinate system used during data compilation. The result shall be expressed to the nearest 0.1 square mile. The value should include the negative sign indicating a decrease in area.
AREA_NET	R	Net Area. This field is populated with the net change in area in square miles for the respective location (SFHA, NONSFHA, FLDWAY, or CHHA) since the last FIRM for that community. The area shall be measured based on the local coordinate system used during data compilation. The result shall be expressed to the nearest 0.1 square mile. If applicable, the value should include the negative sign indicating a decrease in area.
POP_INCR	E	Population Increase. This field is populated with the increase in population for the respective location (SFHA, NONSFHA, FLDWY, CHHA) since the last FIRM for that community. This is an Enhanced field and shall be required if the enhanced option is designated in the MAS. This field is null for the project-level record.
POP_DECR	E	Population Decrease. This field is populated with the decrease in population for the respective location (SFHA, NONSFHA, FLDWY, or CHHA) since the last FIRM for that community. This is an Enhanced field. The value should include the negative sign indicating a decrease in population. This field is null for the project-level record.
POP_NET	E	Population Net Change. This field is populated with the net change in population for the respective location (SFHA, NONSFHA, FLDWY, or CHHA) since the last FIRM for that community. This is an Enhanced field. If applicable, the value should include the negative sign indicating a decrease in population. This field is null for the project-level record.

Field Name	R/A/E/O	Description
BLDG_INCR	E	Building Increase. This field is populated with the increase in the number of buildings for the respective location (SFHA, NONSFHA, FLDWY, or CHHA) since the last FIRM for that community. This is an Enhanced field. This field is null for the project-level record.
BLDG_DECR	E	Building Decrease. This field is populated with the decrease in the number of buildings for the respective location (SFHA, NONSFHA, FLDWY, or CHHA) since the last FIRM for that community. This is an Enhanced field. The value should include the negative sign indicating a decrease in affected buildings. This field is null for the project-level record.
BLDG_NET	E	Building Net Change. This field is populated with the net change in the number of buildings for the respective location (SFHA, NONSFHA, FLDWY, or CHHA) since the last FIRM for that community. This is an Enhanced field. If applicable, the value should include the negative sign indicating a decrease in affected buildings. This field is null for the project-level record.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the project area lies shall be used. For the project-level record (i.e., CSLFSUMMID = CASE_NO), this field should be populated with “NP”.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_CSLF_Summary table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain / Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
CSLFSUMMID	UPK, FK	R	Text	12		S_FRD_Pol_Ar
POL_NAME1		R	Text	50		N/A
LOCATION	UPK	R	Text	7		D_SFHA_FLDWY
AREA_SM		R	Double	Default	Default	N/A
AREA_INCR		R	Double	Default	Default	N/A
AREA_DECR		R	Double	Default	Default	N/A
AREA_NET		R	Double	Default	Default	N/A
POP_INCR		E	Long Integer	Default		N/A
POP_DECR		E	Long Integer	Default		N/A
POP_NET		E	Long Integer	Default		N/A
BLDG_INCR		E	Long Integer	Default		N/A
BLDG_DECR		E	Long Integer	Default		N/A
BLDG_NET		E	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_Dam_Scenario – Dam Scenario Definition Table

This table describes each scenario that has been modeled for a dam. It is an enhanced table that is required to be populated when any of the other enhanced dam-related feature classes or rasters have been produced. The scenario is defined as the unique combination of the domains defining the flooding event, release type and the condition of the reservoir at the time of the release. The following table illustrates some of the possible combinations that can be used to define a scenario.

Table 3. Dam Scenario Naming Standards

Event (D_Event)	Release Type (D_Release_Typ)	Reservoir Condition (D_Reservoir_Cond)
0_2pct – 0.2% Annual Chance Event **01pct** – 1% Annual Chance Event **01plus** – 1% plus Event **02pct** – 2% Annual Chance Event **04pct** – 4% Annual Chance Event **10pct** – 10% Annual Chance Event **PMF** – Probable Maximum Flood **PMF14** – ¼ of Probable Maximum Flood **PMF13** – ⅓ of Probable Maximum Flood **PMF12** – ½ of Probable Maximum Flood **PMF34** – ¾ of Probable Maximum Flood **PMP** – Probable Maximum Precipitation **PMP14** – ¼ of Probable Maximum Precipitation **PMP13** – ⅓ of Probable Maximum Precipitation **PMP12** – ½ of Probable Maximum Precipitation **PMP34** – ¾ of Probable Maximum Precipitation **SUN** – Sunny Day **FOR** – Flood of Record (to be described in L_Dam_Scenario and metadata)	**P**iping **O**vertop **G**ate Failure	**F**ull **N**ormal Pool **A**uxiliary Spillway **P**rimary Spillway **W**ithout Dam

The L_Dam_Scenario table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SCENAR_ID	R	Scenario Identification. Concatenation of Event, Release Type and Reservoir Condition or a unique identifier for non-standard scenarios.
EVENT	R	This is the precipitation event for which the upstream inundation area was developed. The D_Event domain from the riverine version of the FRD can be used with a few additions (e.g., PMP – Probable Maximum Precipitation, SUN – Sunny Day [no precipitation], FOR - Flood of Record). This field may be null for certain values in RSVR_COND.
RELEA_TYP	R	This is the release type for which the downstream inundation area was developed. This should be controlled by a domain. P – Piping, O – Overtop, and G – Gate Failure. This value would be null for upstream inundation scenarios. Uses the D_Release_Typ domain.
RSVR_COND	R	This is the reservoir condition under which the dam was assumed to be operating for the scenario modeled. Typical values for the reservoir condition are: F – Full, N – Normal Pool, A – Auxiliary Spillway, P – Primary Spillway, and W – Without Dam. Uses the D_Reservoir_Cond domain.
RSVR_ELEV	R	The pool elevation of the reservoir at the dam for the condition modeled. The datum and units of the reservoir elevation shall be documented in the S_FRD_Proj_Ar. For the majority of cases, the datum should be NAVD88. Uses D_V_Datum domain.
DESCRIP	A	Free form text field for providing additional descriptive information about the scenario (e.g., describe the flood of record).
MDL_NFO_ID	R	Foreign Key to FRD_Model_Info table for the models used to estimate the results for this scenario.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the L_Dam_Scenario table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SCENAR_ID	UPK	R	Text	25		N/A
EVENT		R	Text	6		D_Event
RELEA_TYP		R	Text	2		D_Release_Typ
RSVR_COND		R	Text	2		D_Reservoir_Cond
RSVR_ELEV		R	Double	Default	Default	N/A
DESCRIP		A	Text	50		N/A
MDL_NFO_ID	FK	R	Text	25		FRD_Model_Info
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Table: L_Dams_XS_MDL_Results – Dam Model Results by Cross-Sections

This table contains the results by cross section from the model of the dam release scenarios. This dataset is related to the S_Dams_XS_Ln feature class by a relationship class. This is an enhanced table that is required to be populated when the S_Dams_XS_Ln feature class has been produced.

The L_Dams_XS_MDL_Results table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
DAMS_XS_ID	R	Risk Map Dams Cross Section Identifier. Foreign Key to S_Dams_XS_Ln.
SCENAR_ID	R	Scenario Identification. Foreign Key to L_Dam_Scenario.
WSE	R	Water Surface Elevation of the scenario modeled. The datum and units for the WSE shall be documented in the S_FRD_Proj_Ar. For the majority of cases, the datum should be NAVD88. Uses D_V_Datum domain.
TIME_PK	A	Time to the peak of the dam release (measured in minutes, x.x).
TIME_ARV	A	Time to the arrival of the dam release (measured in minutes, x.x), when the water surface elevation raises 1.0’ above pre-scenario base flow.
TIME_DUR	A	Time of the duration of the flood wave (measured in minutes, x.x). From when the water surface elevation raises 1.0’ above pre-scenario base flow till it returns to within 1.0’ of pre-scenario base flow.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the L_Dams_XS_MDL_Results table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
DAMS_XS_ID	UPK	R	Text	25		N/A
SCENAR_ID	FK	R	Text	25		L_Dam_Scenario
WSE		R	Double	Default	Default	N/A
TIME_PK		A	Double	Default	Default	N/A
TIME_ARV		A	Double	Default	Default	N/A
TIME_DUR		A	Double	Default	Default	N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Table: L_Exposure – Exposure by Community

This table stores data regarding area-weighted flood risk exposure for each community or partial community within the project area It is required to be populated when the Flood Risk Assessment dataset is produced.

There should be one record in the table for each community or partial community in the project area. If a community extends beyond the project footprint, the summary results in this table should represent only the portion within the project area. There should also be an additional record for the totals for the entire project area.

This table is linked with the S_FRD_Pol_Ar to allow visualization of this exposure data on a thematic map.

The L_Exposure table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
EXPOS_ID	R	Exposure Identification Number. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See the CID field in S_FRD_Pol_Ar for more detail. For the case of the project summary record, the EXPOS_ID should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
POL_NAME1	R	Political Area Name 1. This is the primary name of the community. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail. For the Project summary record (i.e., CLAIMS_ID = CASE_NO), the POL_NAME1 field should be populated with the project / watershed name (e.g., Watershed USA).
ARV_TOT	R	Asset Replacement Value of all Buildings. Total building and contents asset replacement value of all buildings for the community within the project area; obtained from the Hazus inventory data and/or supplemented with local general building stock data. The value is expressed in whole dollars.
ARV_RES	R	Asset Replacement Value of Residential Buildings. Total residential building and contents replacement value of all buildings for the community within the project area; obtained from the Hazus inventory data and/or supplemented with local general building stock data. The value is expressed in whole dollars.

Field Name	R/A/E/O	Description
ARV_COM	R	Asset Replacement Value of Commercial Buildings. Total commercial building and contents replacement value of all buildings for the community within the project area; obtained from the Hazus inventory data and/or supplemented with local general building stock data. The value is expressed in whole dollars.
ARV_OTH	R	Asset Replacement Value of Buildings of Other Types. Total building and contents replacement value of all other building types for the community within the project area; obtained from the Hazus inventory data and/or supplemented with local general building stock data. The value is expressed in whole dollars.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the project area lies shall be used. For the project-level record (i.e., EXPOS_ID = CASE_NO), this field should be populated with “NP”.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_Exposure table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
EXPOS_ID	UPK, FK	R	Text	12		S_FRD_Pol_Ar
POL_NAME1		R	Text	50		N/A
ARV_TOT		R	Double	Default	Default	N/A
ARV_RES		R	Double	Default	Default	N/A
ARV_COM		R	Double	Default	Default	N/A
ARV_OTH		R	Double	Default	Default	N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_Lev_Rating_Curve – Levee Rating Curve Table

This table provides information for a rating curve associated with a rating curve point location. The rating curve may include information for a range of levee scenarios. This is an enhanced table that is required to be populated when the S_Lev_Rating_Curve_Pt feature class has been produced.

The L_Lev_Rating_Curve table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
RAT_CUR_ID	R	Rating curve identifier. User-defined Primary Key / Unique Identifier. This field should be sequentially numbered for all records in the table.
RATCURPTID	R	Associates the Rating Curve with the Location on the Levee System. Foreign Key to the S_Lev_Rating_Curve_Pt feature class.
WSEL_VAL	R	Water Surface Elevation (WSEL) value (ft.), x coordinate.
DIS_VAL	R	Discharge value (cfs), y coordinate.
SPC_TYP	R	Special identifier type to use to on rating curve graphic. Uses D_Levee_Event domain.
DESCRIP	A	Additional Descriptive Information
SCENAR_ID	R	Levee Scenario Identifier (Link to L_Levee_Scenario)
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee rating curve point lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in the S_FRD_Proj_Ar feature class for a more detailed description.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_Source_Cit. See field definition in L_Source_Cit for more detail.

Field properties for the L_Lev_Rating_Curve table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
RAT_CUR_ID	UPK	R	Text	25		N/A
RATCURPTID	FK	R	Text	25		S_Lev_Rating_Curve_Pt
WSEL_VAL		R	Double	Default	Default	N/A
DIS_VAL		R	Double	Default	Default	N/A
SPC_TYP		R	Text	3		D_Levee_Event
DESCRIP		A	Text	50		N/A
SCENAR_ID	FK	R	Text	25		L_Levee_Scenario
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT	FK	R	Text	25		L_Source_Cit

Table: L_Levee_Scenario – Levee Scenario Table

This table describes each scenario that has been modeled for the levee. It is an enhanced table that is required to be populated when any of the other enhanced levee-related feature classes or rasters have been produced. The scenario is defined as the unique combination of the domains defining the flooding event, levee accreditation status and the source of the flooding event. The following table illustrates the possible combinations that can be used to define a scenario. These scenarios are used to define the attribute for describing varying levee impact areas and raster naming conventions for depth, velocity, water surface elevation and depth and velocity severity grids.

Table 4. Levee Scenario Naming Standards

Event (D_Levee_Event)	Levee Accreditation Status (D_Levee_Accreditation)	Flood Hazard Source Type (D_Flooding_Source)
0_2 – 0.2% Annual Chance Event **01** – 1% Annual Chance Event **01P** – 1% plus Event **02** – 2% Annual Chance Event **04** – 4% Annual Chance Event **10** – 10% Annual Chance Event **HIS** – Historical Flood event **LS** – Levee Shadow (extents of impacted area behind a levee based on levee crest elevation) **OVT** – Overtop **TOE** – Levee Toe (wet side of levee) **LC** – Levee Crest **LT** – Landward Toe	**A** - Accredited **P** – Provisionally Accredited **N** - Non-Accredited	**R** - Riverine **C** - Coastal **D** - Dam **O** – Other

The L_Levee_Scenario table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SCENAR_ID	R	Scenario Identification. Concatenation of Event, Levee Accreditation Status, and Flooding Source. For non-standard scenarios and multiple scenarios with the same identifier, a unique identifier should be used. Examples: 04AR, 01ND1, 01ND2, LSPC. Primary Key - Unique Identifier
EVENT	R	This is the event for which the levee analysis was developed. (Uses D_Levee_Event domain)

Field Name	R/A/E/O	Description
LEV_AC_TYP	R	Levee Accreditation Status (Uses D_Levee_Accreditation domain)
FLOOD_SRC	R	Flood Hazard Source Type (Uses D_Flooding_Source domain)
LEV_AN_TYP	R	Levee Analysis Type (Uses D_Levee_Analysis_Type domain)
DAM_SCE_ID	A	Dam Scenario Identifier (Link to L_Dam_Scenario). When a levee scenario is based on a dam scenario, this field will be populated to link the dam flood risk scenario datasets.
MDL_NFO_ID	R	Foreign Key to FRD_Model_Info table that describes the set of models used to determine the inundation area.
DESCRIP	A	Free form text field for providing additional descriptive information about the scenario (e.g., describe the flood of record).
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the levee lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.
SOURCE_CIT	R	Source Citation from L_SOURCE_CIT. See field definition in L_Source_Cit for more detail.

Field properties for the L_Levee_Scenario table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SCENAR_ID	UPK	R	Text	25		N/A
EVENT		R	Text	3		D_Levee_Event
LEV_AC_TYP		R	Text	1		D_Levee_Accreditation
FLOOD_SRC		R	Text	1		D_Flooding_Source
LEV_AN_TYP		R	Text	3		D_Levee_Analysis_Type
DAM_SCE_ID		A	Text	25		L_Dam_Scenario
MDL_NFO_ID		R	Text	25		FRD_Model_Info
DESCRIP		A	Text	50		N/A
HUC8_CODE		R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A
SOURCE_CIT		R	Text	25		L_Source_Cit

Table: L_Local_GBS – Local General Building Stock

This table stores data collected from local sources to replace General Building Stock data from Hazus. It is an enhanced table that is required to be populated when a census block-based Flood Risk Assessment is performed using updated General Building Stock data. This table has one record for each Census Block with updated General Building Stock data. This data should be compiled for the entire Census Block, not restricted to the area inside the project boundary, nor just inside the floodplain.

The Asset Replacement Value fields in this table are in whole dollars (i.e., $1,000,000 to represent $1 million as opposed to $1,000 representing $1 million in thousands of dollars).

The L_Local_GBS table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
CEN_BLK_ID	R	Census Block Identifier. See the CEN_BLK_ID field in the S_CenBlk_Ar feature class for more detail.
POPULATION	R	Population for the Census Block.
ARV_BG_TOT	R	Asset Replacement Value of all building types.
ARV_CN_TOT	R	Asset Replacement Value of the contents for all building types.
ARV_BG_RES	R	Asset Replacement Value of residential buildings.
ARV_CN_RES	R	Asset Replacement Value of the contents for residential buildings.
ARV_BG_COM	R	Asset Replacement Value of commercial buildings.
ARV_CN_COM	R	Asset Replacement Value of the contents for commercial buildings.
ARV_BG_OTH	R	Asset Replacement Value of buildings of other types.
ARV_CN_OTH	R	Asset Replacement Value of the contents for buildings of other types.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the Census Block lies. If a Census Block is in multiple HUC-8 sub-basins, the sub-basin in which the largest portion of the Census Block lies shall be used.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_Local_GBS table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
CEN_BLK_ID	UPK, FK	R	Text	17		S_CenBlk_Ar
POPULATION		R	Long Integer	Default		N/A
ARV_BG_TOT		R	Long Integer	Default		N/A
ARV_CN_TOT		R	Long Integer	Default		N/A
ARV_BG_RES		R	Long Integer	Default		N/A
ARV_CN_RES		R	Long Integer	Default		N/A
ARV_BG_COM		R	Long Integer	Default		N/A
ARV_CN_COM		R	Long Integer	Default		N/A
ARV_BG_OTH		R	Long Integer	Default		N/A
ARV_CN_OTH		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_RA_Results - Risk Assessment Results

This table stores the results of the risk analysis and is required to be populated when the Flood Risk Assessment dataset is produced.

This table contains one record per Census Block for each return period analyzed, per hazard type. The analysis results are obtained by running each return period's composite risk assessment depth grid through the Hazus (or similar) software. The return periods populated for each Census Block will be dependent on the availability and coverage of their associated composite depth grids, which are created using the data sources listed below, in order or priority.

1. Census Blocks where new (refined) analyses were performed must store results for the return periods identified in Risk MAP Standard ID (SID) #417
2. Outside of these locations, Census Blocks where Automated Engineering depth grids are available must store results for each return period identified in SID 417 that has available Automated Engineering depth grids
3. If Automated Engineering data is not available and other Hazus-derived depth grids are used in the creation of the composite risk assessment depth grids, Census Blocks where these Hazus-derived or supplementary depth grids were generated must store results for each return period identified in SID 417 that has available data

Additional guidance regarding the creation and use of these composite risk assessment depth grids and the population of L_RA_Results can be found in the Flood Risk Assessment Guidance document.

L_RA_Results is used in combination with the S_CenBlk_Ar and S_FRD_Pol_Ar feature classes to derive the L_RA_Summary table, which presents the risk assessment results by community. This table is linked with the S_CenBlk _Ar to allow visualization of this data by Census Block on a thematic map.

The L_RA_Results table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
CEN_BLK_ID	R	Census Block Identifier. See the CEN_BLK_ID field in the S_CenBlk_Ar feature class for more detail.

Field Name	R/A/E/O	Description
HAZARD_TYP	R	Hazard Type. Indicates the Hazard Type for which the remaining fields apply. The valid values for this field are in the domain D_Hazard_Typ and include Riverine, Coastal, Levee, Dam, and Total. In addition to a set of records for each of the individual hazard types for which analysis was performed, a set of records should be included for the sum of the constituent hazard types.
RETURN_PER	R	Return Period. Indicates the return period for which the remaining fields apply. The valid values for this field are in the domain D_Event. In addition to one record for each percent annual chance event (10%, 2%, 1%, 0.5%, 0.2%) used in the assessment, a record should be included for the average annualized event if the results for multiple percent annual chance events are available for the Census Block.
SCENAR_ID	A	Levee or Dam Scenario Identification. The RETURN_PER and SCENAR_ID fields are mutually exclusive. If one is populated the other should be null.
RA_SOURCE	R	Risk Assessment Source. Indicates the primary depth grid source (new or refined, Automated Engineering, Hazus-derived, or Other) from which the results for this record were calculated. (Uses the D_RA_Source domain)
TOT_LOSSES	R	Total Losses. For each Census Block, the estimate of the total value of all losses for the combination of hazard type and return period.
BL_TOT	R	Total Building Losses. For each Census Block, the estimate of total value of building for the combination of hazard type and return period.
CL_TOT	R	Total Content Losses. For each Census Block, the estimate of total value of content loss for the combination of hazard type and return period.
BL_RES	R	Residential Building Loss. For each Census Block, the estimate of total value of residential building for the combination of hazard type and return period.
CL_RES	R	Residential Content Loss. For each Census Block, the estimate of total value of content loss for residential buildings for the combination of hazard type and return period.
BL_COM	R	Commercial Building Loss. For each Census Block, the estimate of total value of commercial building for the combination of hazard type and return period.
CL_COM	R	Commercial Content Loss. For each Census Block, the estimate of total value of content loss for commercial buildings for the combination of hazard type and return period.

Field Name	R/A/E/O	Description
BL_OTH	R	Building Loss for Other Building Types. For each Census Block, the estimate of total value of building losses for other types of buildings for the combination of hazard type and return period. Other buildings type categories are industrial, agricultural, education, religious, and government.
CL_OTH	R	Content Loss for Other Building Types. For each Census Block, the estimate of total value of content losses for other types of buildings for the combination of hazard type and return period. Other buildings type categories are industrial, agricultural, education, religious, and government.
BUS_DISRPT	R	Business Disruption. For each Census Block, the estimate of business disruption costs for the combination of hazard type and return period.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the Census Block lies. If a Census Block crosses a HUC-8 boundary, the field shall be populated with the HUC-8 value in which the majority of the Census Block lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_RA_Results table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
CEN_BLK_ID	UPK, FK	R	Text	17		S_CenBlk_Ar
HAZARD_TYP	UPK	R	Text	4		D_Hazard_Typ
RETURN_PER	UPK	R	Text	6		D_Event
SCENAR_ID	UPK, FK	A	Text	25		L_Levee_Scenario or L_Dam_Scenario
RA_SOURCE		R	Text	3		D_RA_Source
TOT_LOSSES		R	Double	Default	Default	N/A
BL_TOT		R	Double	Default	Default	N/A
CL_TOT		R	Double	Default	Default	N/A
BL_RES		R	Double	Default	Default	N/A
CL_RES		R	Double	Default	Default	N/A
BL_COM		R	Double	Default	Default	N/A
CL_COM		R	Double	Default	Default	N/A

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
BL_OTH		R	Double	Default	Default	N/A
CL_OTH		R	Double	Default	Default	N/A
BUS_DISRPT		R	Double	Default	Default	N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_RA_Summary – Risk Analysis Summary by Community

This table summarizes, by community, the area-weighted results of the risk assessment performed by Census Block. It is required to be populated when the Flood Risk Assessment dataset is produced. The Mapping Partner shall use appropriate techniques (e.g., area-weighted summations) to aggregate the L_RA_Results data, which stores the risk assessment loss estimates by Census Block, to the L_RA_Summary table, which stores the loss estimates by community.

This table contains one record per community for each return period analyzed, including the average annual loss, per hazard type. If a community extends beyond the project footprint, the summary results in this table should represent only the portion within the project area. The table also has one record summarizing each return period's risk assessment results within the project area, for each hazard type.

Only those return periods whose risk assessment results have consistent coverage within the project area or community are populated within this table. For example, if several streams within a watershed received new analyses, where the 10%, 4%, 2%, 1%, and 0.2% annual chance losses had been calculated, but the remainder of the flooding sources in the watershed only had the 1% and 0.2% annual chance losses available (such as available from Automated Engineering data), then L_RA_Summary would only be populated for the 1% and 0.2% annual chance events within its project area records. This rule similarly applies for community records in this table.

This table can be joined with the S_FRD_Pol_Ar to allow visualization of the summary results on a thematic map.

The L_RA_Summary table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
RA_SUMM_ID	R	Summary Identification Number. For the case of the community records in this table, this is the six-digit CID assigned by FEMA. See S_FRD_Pol_Ar for more detail. For the case of the project summary record, the RA_SUMM_ID should be populated with the FEMA Case Number in the same format as the CASE_NO field below.
POL_NAME1	R	Political Area Name 1. This is the primary name of the community. This field is included in this table instead of retrieval by joining to S_FRD_Pol_Ar table to make querying for the FRR easier. See the definition in S_FRD_Pol_Ar for more detail.

Field Name	R/A/E/O	Description
HAZARD_TYP	R	Hazard Type. Indicates the Hazard Type for which the remaining fields apply. The valid values for this field are in the domain D_Hazard_Typ and include Riverine, Coastal, Levee and Total. In addition to a set of records for each of the individual hazard types for which analysis was performed, a set of records should be included for the sum of the constituent hazard types.
RETURN_PER	A	Return Period. Indicates the return period for which the remaining fields apply. The valid values for this field are in the domain D_Event. In addition to one record for each percent chance event (10%, 2%, 1%, 0.5%, 0.2%) used in the assessment, a record should be included for the average annualized event. The RETURN_PER and SCENAR_ID fields are mutually exclusive. If one is populated the other should be null.
SCENAR_ID	A	Dam or Levee Scenario Identification. The RETURN_PER and SCENAR_ID fields are mutually exclusive. If one is populated the other should be null.
TOT_LOSSES	R	Total Losses. The estimate of total value of all losses for the combination of hazard type and return period.
BC_TOT	R	Total Building and Content Loss. The estimate of total loss of all building types and contents for the combination of hazard type and return period.
BC_RES	R	Residential Building and Content Loss. The estimate of total loss of residential buildings and contents for the combination of hazard type and return period.
BC_COM	R	Commercial Building and Content Loss. The estimate of total loss of commercial buildings and contents for the combination of hazard type and return period.
BC_OTH	R	Building and Content Loss for Buildings of Other Types. The estimate of total loss of buildings and contents for other types of buildings for the combination of hazard type and return period. Other buildings type categories are industrial, agricultural, education, religious, and government.
BUS_DISRPT	R	Business Disruption. The estimate of business disruption costs for the combination of hazard type and return period.
LR_TOT	R	The Total Loss Ratio for each combination of hazard type and return period.
LR_BC	R	The Loss Ratio for all buildings and contents for each combination of hazard type and return period.
LR_BC_RES	R	The Loss Ratio for residential buildings and contents for each combination of hazard type and return period.
LR_BC_COM	R	The Loss Ratio for commercial buildings and contents for each combination of hazard type and return period.

Field Name	R/A/E/O	Description
LR_BC_OTH	R	The Loss Ratio for other building types and contents for each combination of hazard type and return period.
AAL_PERCAP	A	The Average Annualized Loss Per Capita. There should be one record in the table for each community and project area by hazard type. The RETURN_PER for these records should be AvgAnn. For all other return periods, this field should be populated with a null value. This loss should be reported to the nearest whole dollar.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the community lies. If a community is in multiple HUC-8 sub-basins, the sub-basin in which the portion of the community being studied lies shall be used. If the portion of the community being studied is in multiple sub-basins, the sub-basin in which the greatest portion of the project area lies shall be used. For the project-level record (i.e., RA_SUMM_ID = CASE_NO), this field should be populated with "NP."
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Notes:

1. Total Building and Content Losses = Residential Building and Content Loss + Commercial Building and Content Loss + Other Building and Content Loss

2. Loss ratio = Dollar Losses / Estimated Value. Loss ratios are computed using actual loss and value numbers from the risk assessment analysis, not rounded numbers. Populate the table to the nearest percent.

3. Dollar losses under $100,000 should be rounded to the nearest $10,000. Dollar losses over $100,000 should be rounded to the nearest $100,000.

Field properties for the L_RA_Summary table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
RA_SUMM_ID	UPK, FK	R	Text	12		S_FRD_Pol_Ar
POL_NAME1		R	Text	50		N/A
HAZARD_TYP	UPK	R	Text	4		D_Hazard_Typ
RETURN_PER	UPK	A	Text	6		D_Event
SCENAR_ID	UPK, FK	A	Text	25		L_Levee_Scenario or L_Dam_Scenario
TOT_LOSSES		R	Double	Default	Default	N/A
BC_TOT		R	Double	Default	Default	N/A
BC_RES		R	Double	Default	Default	N/A
BC_COM		R	Double	Default	Default	N/A
BC_OTH		R	Double	Default	Default	N/A
BUS_DISRPT		R	Double	Default	Default	N/A
LR_TOT		R	Double	Default	Default	N/A
LR_BC		R	Double	Default	Default	N/A
LR_BC_RES		R	Double	Default	Default	N/A
LR_BC_COM		R	Double	Default	Default	N/A
LR_BC_OTH		R	Double	Default	Default	N/A
AAL_PERCAP		A	Double	Default	Default	N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_RA_UDF_Results – Risk Analysis Results for User-Defined Facilities

This table stores the results of the risk analyses for each User Defined Facility. It is required to be populated when flood risk assessments for a Flood Risk Project are performed at the site-specific level. This table contains one record for each facility for each hazard type for each return period analyzed, including the average annual loss estimate. This table is linked with the S_UDF_Pt to allow visualization of these risk assessment results on a thematic map.

The L_RA_UDF_Results table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
UDF_ID	R	Unique Identifier for this facility. See S_UDF_Pt for more detailed explanation.
HAZARD_TYP	R	Hazard Type. Indicates the Hazard Type for which the remaining fields apply. The valid values for this field are in the domain D_Hazard_Typ and include Riverine, Coastal, Levee and Total. In addition to a set of records for each of the individual hazard types for which analysis was performed, a set of records should be included for the sum of the constituent hazard types.
RETURN_PER	A	Return Period. Indicates the return period for which the remaining fields apply. The valid values for this field are in the domain D_Event. In addition to one record for each percent chance event (10%, 2%, 1%, 0.5%, 0.2%) used in the assessment, a record should be included for the average annualized event. The RETURN_PER and SCENAR_ID fields are mutually exclusive. If one is populated the other should be null.
SCENAR_ID	A	Scenario Identification. Used for either dam scenario (L_Dam_Scenario) or levee scenario (L_Levee_Scenario). The RETURN_PER and SCENAR_ID fields are mutually exclusive. If one is populated the other should be null.
BLDG_LOSS	R	Building Loss. Asset Value Loss to the nearest dollar for the Building for the combination of Hazard Type and Return Period.
BLDGPCTDAM	R	Percent damage to building for the combination of Hazard Type and Return Period. The result should be expressed to the nearest tenth of a percent (0.1%).
CNT_LOSS	R	Contents Loss. Asset Value Loss to the nearest dollar for the contents of the building for the combination of Hazard Type and Return Period.

Field Name	R/A/E/O	Description
CNT_PCTDAM	R	Percent Damage for the contents of the building for the combination of Hazard Type and Return Period. The result should be expressed to the nearest tenth of a percent (0.1%).
INV_LOSS	R	Inventory Loss. Asset Value Loss to the nearest dollar for the inventory for the combination of Hazard Type and Return Period.
HUC8_CODE	R	WBD 8-digit Hydrologic Unit Code for the sub-basin in which the facility lies.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_RA_UDF_Results table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
UDF_ID	UPK, FK	R	Text	25		S_UDF_Pt
HAZARD_TYP	UPK	R	Text	4		D_Hazard_Typ
RETURN_PER	UPK	A	Text	6		D_Event
SCENAR_ID	FK	A	Text	25		L_Levee Scenario or L_Dam Scenario
BLDG_LOSS		R	Long Integer	Default		N/A
BLDGPCTDAM		R	Double	Default	Default	N/A
CNT_LOSS		R	Long Integer	Default		N/A
CNT_PCTDAM		R	Double	Default	Default	N/A
INV_LOSS		R	Long Integer	Default		N/A
HUC8_CODE	FK	R	Text	8		S_HUC_Ar
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

Table: L_Source_Cit – Source Citations

This table should contain a record for each data source used (both vector and raster) and the FRD metadata file should also contain a corresponding Source Citation entry in the Lineage section under Data Quality. This table is required to be populated. Source Citation Type Abbreviations, followed by sequential numbers, should be used in creating the references. These citations provide a link to the metadata where the data sources are more fully described. These abbreviations are presented in the following table.

Table 5. Source Citation Type Abbreviations

Source Citation Type Abbreviations	Use
BASE	For all base map sources (includes roads, railroads, airports, hydrography). This abbreviation would typically be used for S_Carto_Ar, S_Carto_Ln and the hillshade raster.
FIRM	For features extracted from an existing FIRM database.
LOMC	For information derived from a Letter of Map Change (LOMC).
HAZUS	For features extracted from or developed during a Hazus assessment. Would typically be used for S_CenBlk_Ar.
FIS	For information taken from a previously published Flood Insurance Study (FIS) Report, including Floodway Data Tables and Flood Profiles.
STUDY	For information developed or acquired for the current Flood Risk Project. This abbreviation would typically be used for S_AOMI_Pt, S_CSLF_Ar, S_FRD_Proj_Ar and S_FRD_Pol_Ar.

This table has an entry for each different data source used in the Flood Risk Project and is linked with all the feature classes to document the sources for the data.

The L_Source_Cit table contains the following elements:

Field Name	R/A/E/O	Description
OBJECTID	R	Object Identifier. Internal Primary Key used by ArcGIS software to provide unique access to each record.
SOURCE_CIT	R	Source Citation identifier used in the FIRM Database and in the FIRM metadata file. Source citations start with the type of source followed by sequential numbers, for example “BASE1”, “BASE2”, etc.
DFIRM_ID	R	Regulatory Product Identifier. 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). Within each FIRM database, the DFIRM_ID value is identical.

Field Name	R/A/E/O	Description
CITATION	R	Citation Used in FIS Report text and Bibliography and References Table. A short and unique citation name (Author and Year) used within the FIS Report to reference this publication, such as “U.S. Census 2010.”
PUBLISHER	R	Publisher Name Used in FIS Report Bibliography and References Table. This is the name of the publishing entity.
TITLE	R	Title of referenced publication or data Used in FIS Report Bibliography and References Table. Should include the volume number if applicable.
AUTHOR	A	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.
PUB_PLACE	A	Publication Place Used in FIS Report Bibliography and References Table. This is the place of publication (e.g., “Washington DC”).
PUB_DATE	R	Publication Date Used in FIS Report Bibliography and References Table. This is the date of publication or date of issuance.
WEBLINK	A	Reference Web Address Used in FIS Report Bibliography and References Table. This is the web address for the reference, if applicable.
SRC_SCALE	A	Scale of the source data, if applicable. For example 1:24000. Used in FIS Report Bibliography and References Table.
MEDIA	R	Media through which the source data were received.
CASE_NO	R	FEMA Case Number. See the CASE_NO field in S_FRD_Proj_Ar for more detail.
VERSION_ID	R	Version Identifier. Identifies the product version and relates the feature to standards according to which it was created.

Field properties for the L_Source_Cit table are as follows:

Field	Key Type	R/A/E/O	Type	Length/ Precision	Scale (SHP Only)	Domain or Related Table
OBJECTID	PK	R	ObjectID	Default		N/A
SOURCE_CIT	UPK, FK	R	Text	25		S_Huc_Ar, S_Carto_Ar, S_Carto_Ln, S_Carto_Pt, S_FRM_Callout_Ln, S_FRD_Pol_Ar, S_FRD_Proj_Ar, S_CSLF_Ar, S_CenBlk_Ar, S_AOMI_Pt, S_UDF_Pt
DFIRM_ID	FK	R	Text	6		FRD_Study_Info
CITATION		R	Text	25		N/A
PUBLISHER		R	Text	254		N/A
TITLE		R	Text	254		N/A
AUTHOR		A	Text	254		N/A
PUB_PLACE		A	Text	100		N/A
PUB_DATE		R	Date	Default		N/A
WEBLINK		A	Text	128		N/A
SRC_SCALE		A	Text	12		N/A
MEDIA		R	Text	50		N/A
CASE_NO	FK	R	Text	12		S_FRD_Proj_Ar
VERSION_ID		R	Text	11		N/A

4.0 Raster Datasets

All depth and analysis rasters within the FRD shall be floating point with data rounded to the nearest tenth of a unit (i.e., 0.1 feet, 0.1 feet/second, or 0.1%) and shall have the same spatial reference, origin, resolution and rotation as one another.

Table 6 lists the names of the rasters that can be produced as part of a Flood Risk Project. Most raster datasets listed in this table include the "xxxxxx" nomenclature in their name. This is a placeholder that should be updated accordingly, depending on the scenario or flood event that the raster is depicting. For dam-related rasters, the L_Dam_Scenario table outlines the naming specifications that should be used to replace the "xxxxxx" in the naming convention, depending on the flood scenario depicted. Similarly, the L_Levee_Scenario table outlines the naming convention that should be used to replace the "xxxxxx" for levee-related rasters. The third column of this table provides examples of how the "xxxxxx" placeholder is replaced, depending on the specific flood event or scenario for which the raster is being created.

Any raster used to depict a percent annual chance flood event whose occurrence is less frequent than the 1% annual chance (e.g. 0.2% annual chance or 500-yr; 0.5% annual chance, or 200-yr; etc.) should replace the decimal point (".") with an underscore ("_") in its name (e.g. Depth_0_2pct, WSE_0_5pct, etc.)

Table 6. Flood Risk Database Rasters

FRD Raster Name	Raster Description	Units	"xxxxxx" Naming Requirement Examples (explanation)
Arrv_xxxxxxxx	Arrival time for the xxxxxxxx scenario dam release. This is an enhanced raster.	Minutes	• Arrv_SUNPN (Sunny day piping failure with reservoir at normal pool)
CstDpthxxxpct	Coastal flood depth for the xxx percent annual chance flood event. This raster is required to be produced for coastal Flood Risk Projects.	Feet	• CstDpth01pct (1% annual chance) • CstDpth0_2pct (0.2% annual chance)
Depth_xxxxxx	Flood Depth for the xxxxxx riverine flood event. This raster is required to be produced for riverine Flood Risk Projects.	Feet	• Depth_10pct (10% annual chance) • Depth_04pct (4% annual chance) • Depth_02pct (2% annual chance) • Depth_01pct (1% annual chance) • Depth_0_2pct (0.2% annual chance) • Depth_01plus (1% "plus") • Depth_01minus (1% "minus")

FRD Raster Name	Raster Description	Units	"xxxxxx" Naming Requirement Examples (explanation)
Dpth_xxxxxxxx	Flood Depth for the xxxxxxxx dam release or levee scenario. This is an enhanced raster.	Feet	• Dpth_01pctPA (Dam release based on a piping failure from the 1% annual chance flood, and the water surface in the reservoir at the auxiliary spillway) • Dpth_01AC (1% annual chance depth from a coastal flooding source for an accredited levee)
DVS_xxxxxxxx	Flood Depth and Velocity Severity (DVS) for the xxxxxxxx flood event or scenario. This is an enhanced raster.	$Feet^2$ / second	• DVS_01pct (1% annual chance) • DVS_FOR (Flood of Record for a dam) • DVS_HISNR (Historical flood event from a riverine flooding source for a non-accredited levee)
FID_xxxxxxxx	Flood Inundation Duration – Time of the duration of the flood inundation of the xxxxxxxx scenario dam release. This is an enhanced raster.	Minutes	• FID_PMFOF (Dam release based on overtopping from the Probable Maximum Flood, with a full reservoir)
Hillshade	Hillshade for use on the FRM. This raster is required to be produced when the FRM is created.	Integer (hillshade value)	N/A
Pct30yrChance	Percent chance of flooding over a 30-year period. This raster is required to be produced for riverine Flood Risk Projects.	Percent	N/A
PctAnnChance	Percent annual chance of flooding. This raster is required to be produced for riverine Flood Risk Projects.	Percent	N/A
Peak_xxxxxxxx	Time for the peak of the xxxxxxxx scenario dam release to occur. This is an enhanced raster.	Minutes	• Peak_0_2pctPP (Dam release based on piping failure from the 0.2% annual chance event, with the reservoir at the primary spillway)
RAdpth_xxxxxx	Composite flood depth grid used to perform the risk assessment for the xxxxxx event or scenario. This is an enhanced raster	Feet	• RAdpth_01pct (1% annual chance) • RAdpth_0_2pct (0.2% annual chance)

FRD Raster Name	Raster Description	Units	"xxxxxx" Naming Requirement Examples (explanation)
Vel_xxxxxxxx	Velocity for the xxxxxxxx flood event or scenario. This is an enhanced raster.	Feet / second	• Vel_01pct (1% annual chance) • Vel_0_2OF (Dam release based on overtopping from the 0.2% annual chance event, with a full reservoir) • Vel_01PD (1% annual chance velocity from a dam release for a provisionally accredited levee)
WSE_xxxxxx	Water Surface Elevation (WSE) for the xxxxxx flood event or scenario. This raster is required to be produced for riverine Flood Risk Projects.	Feet	• WSE_10pct (10% annual chance) • WSE_04pct (4% annual chance) • WSE_02pct (2% annual chance) • WSE_01pct (1% annual chance) • WSE_0_2pct (0.2% annual chance) • WSE_01plus (1% "plus") • WSE_PMPOF (Dam release based on overtopping from the Probable Maximum Precipitation, with a full reservoir) • WSE_01NR (1% annual chance WSE from a riverine flooding source for a non-accredited levee)
WSE_Change	1% annual chance WSE change since last FIRM. This is an enhanced raster.	Feet	N/A

5.0 Spatial Reference Systems

Delivered FRD vector datasets shall have the following spatial reference standards:

Coordinate System: Geographic (GCS)
- Spheroid
  - Name: GRS_1980
  - Semi major Axis: 6378137
  - Semi minor Axis: 6356752.3141403561
- Angular Unit
  - Name: Degree
  - Radians per unit: 0.017453292519943299
- Prime Meridian
  - Name: Greenwich
  - Longitude 00° 00' 00"

Horizontal Datum: NAD 83 (1986). This is the original NAD 83 realization.
Horizontal Units: Decimal Degrees (dd)

Vertical Datum: NAVD88
Vertical Units: US Survey Feet
Cluster Tolerance: 0.000000784415 dd
Spatial Resolution: 0.0000000784415 dd

Delivered FRD raster datasets shall have the following spatial reference standards:

Projection: Universal Transverse Mercator (UTM)
Zone: Single zone which best covers the project area
Horizontal Datum: NAD 83 (1986). This is the original NAD 83 realization.
Horizontal Units: Meters
Cell Size: no larger than 10m

Vertical Datum: NAVD88
Vertical Units: US Survey Feet

All elevation data, including water surface elevation rasters, shall reference the North American Vertical Datum of 1988 (NAVD88) with units of US Survey Feet. The use of other datums or vertical units (e.g., the use of meters in areas such as Puerto Rico where Base Flood Elevations (BFEs) are expressed in meters) will require approval of the FEMA Project Officer.

Non-geodatabase formats shall maintain these spatial reference standards where allowable by file type and format.

6.0 Topology Rules

Spatial FRD feature classes in the fGDB exist within one feature dataset. The feature dataset, FRD_Spatial_Layers, is required for the creation of topology. Non-spatial tables and rasters will exist outside of the FRD_Spatial_Layers feature dataset, as standalone business tables and rasters at the 'root' level inside the fGDB. The complete list of topology rules are listed in Table 7 .

Table 7. Topology Rules

Topology Class	Spatial Layer	Topology Rule	Parameter
CSLF_Topology	S_CSLF_Ar	Must Be Larger Than Cluster Tolerance*	
CSLF_Topology	S_CSLF_Ar	Must Not Overlap	
CSLF_Topology	S_CSLF_Ar	Must Not Have Gaps	
CenBlk_Topology	S_CenBlk_Ar	Must Be Larger Than Cluster Tolerance*	
Pol_Proj_Topology	S_FRD_Pol_Ar	Must Be Larger Than Cluster Tolerance*	
Pol_Proj_Topology	S_FRD_Pol_Ar	Must Not Overlap	
Pol_Proj_Topology	S_FRD_Pol_Ar	Must Not Have Gaps	
Pol_Proj_Topology	S_FRD_Pol_Ar	Must be covered by feature class of	S_FRD_Proj_Ar
Pol_Proj_Topology	S_FRD_Proj_Ar	Must Be Larger Than Cluster Tolerance*	
Pol_Proj_Topology	S_FRD_Proj_Ar	Must Not Overlap	
Pol_Proj_Topology	S_FRD_Proj_Ar	Must Not Have Gaps	

*Inherent for all polygon and polyline feature classes in each topology.

7.0 Relationship Classes

To enable easier and consistent use of the FRD, pre-defined relationships have been established between certain tables using what is known as a “relationship class.” The use of table relationship classes will allow Mapping Partners to create or update information stored in one table and simply “relate” that information to another table based on a common field.

In Figure 1 below, the attributes of the Flood Risk Assessment table (L_RA_Results) are related to the Census Block polygons (S_CenBlk_Ar) using a relationship class (CenBlk_RA_Results) and a common field (CEN_BLK_ID).

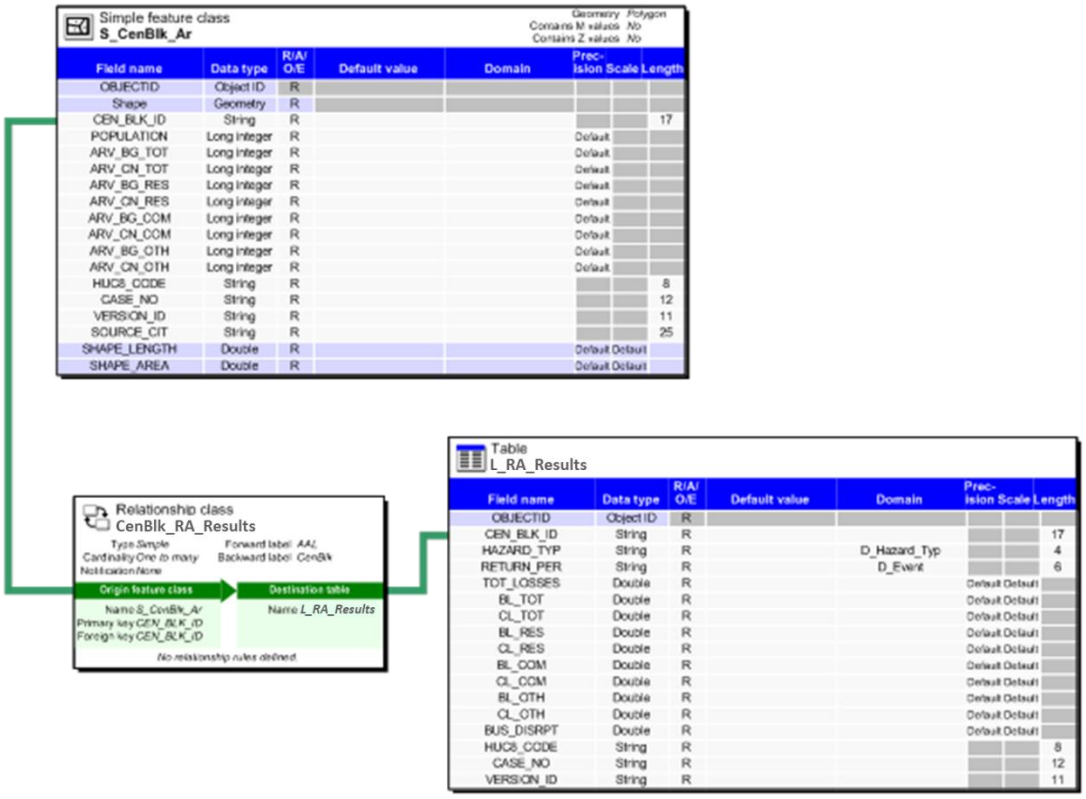


Figure 1. Example Relationship Class

Table 8 lists all of the relationship classes in the FRD ordered by Origin Table.

Table 8. FRD Relationship Classes

Relationship Class Name	Origin Table	Origin Field	Destination Table	Destination Field	Cardinality
Model_Study	FRD_Model_Info	STD_NFO_ID	FRD_Study_Info	STD_NFO_ID	1:1
AOMI_SourceCit	S_AOMI_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CartoAr_SourceCit	S_Carto_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CartoLn_SourceCit	S_Carto_Ln	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CartoPt_SourceCit	S_Carto_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CenBlk_LocalGBS	S_CenBlk_Ar	CEN_BLK_ID	L_Local_GBS	CEN_BLK_ID	1:1
CenBlk_RA_Results	S_CenBlk_Ar	CEN_BLK_ID	L_RA_Results	CEN_BLK_ID	1:M
CenBlk_SourceCit	S_CenBlk_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CF_AOMI	S_Cr_Fac_Pt	AOMI_ID	S_AOMI_Pt	AOMI_ID	1:1
CF_SourceCit	S_Cr_Fac_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
CSLF_New_Model	S_CSLF_Ar	NEW_MODEL	FRD_Model_Info	MDL_NFO_ID	1:1
CSLF_Pre_Model	S_CSLF_Ar	PRE_MODEL	FRD_Model_Info	MDL_NFO_ID	1:1
CSLF_Pre_SourceCit	S_CSLF_Ar	PRE_SRCCIT	L_Source_Cit	SOURCE_CIT	1:1
CSLF_New_SourceCit	S_CSLF_Ar	NEW_SRCCIT	L_Source_Cit	SOURCE_CIT	1:1
CSLF_SourceCit	S_CSLF_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
N/A[1]	S_CSLF_Ar	CNMS_ID	S_Studies_Ln (CNMS)	CNMS_ID	1:1
Inc_Flood_SourceCit	S_ Inc_Flood_Scen_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Simpl_Cst_Zone_SourceCit	S_Simpl_Cst_Zone_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
XS_SourceCit	S_Dams_XS_Ln	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Dams_XS_MDL	S_Dams_XS_Ln	DAMS_XS_ID	L_Dams_XS_MDL_Results	DAMS_XS_ID	1:M
DS_INUN_Dam_Scenario	S_DS_Inundation_Ar	SCENAR_ID	L_Dam_Scenario	SCENAR_ID	1:1
DS_INUN_SourceCit	S_DS_Inundation_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
ESMT_SourceCit	S_Easement_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
PFD_SourceCit	S_PFD_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
PolAr_AOMI_Sum	S_FRD_Pol_Ar	CID	L_AOMI_Summary	AOMISUMMID	1:M
PolAr_Claims	S_FRD_Pol_Ar	CID	L_Claims	CLAIMS_ID	1:1
PolAr_CSLF_Sum	S_FRD_Pol_Ar	CID	L_CSLF_Summary	CSLFSUMMID	1:M
PolAr_Exposure	S_FRD_Pol_Ar	CID	L_Exposure	EXPOS_ID	1:1
PolAr_RA_Sum	S_FRD_Pol_Ar	CID	L_RA_Summary	RA_SUMM_ID	1:M
PolAr_SourceCit	S_FRD_Pol_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Proj_SourceCit	S_FRD_Proj_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Callout_SourceCit	S_FRM_Callout_Ln	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
HUC_SourceCit	S_HUC_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Levee_CF	S_Levee_Ln	LEVEE_ID	S_Cr_Fac_Pt	LEVEE_ID	1:M

Relationship Class Name	Origin Table	Origin Field	Destination Table	Destination Field	Cardinality
Levee_INUN	S_Levee_Ln	LEVEE_ID	S_Lev_Inundation_Ar	LEVEE_ID	1:M
Levee_AOMI	S_Levee_Ln	AOMI_ID	S_AOMI_Pt	AOMI_ID	1:1
Levee_Elements	S_Levee_Ln	LEVEE_ID	S_Lev_Elements_Pt	LEVEE_ID	1:M
Levee_Breach	S_Levee_Ln	LEVEE_ID	S_Lev_Breach_Pt	LEVEE_ID	1:M
Levee_Rating_Curve	S_Levee_Ln	LEVEE_ID	S_Lev_Rating_Curve_Pt	LEVEE_ID	1:M
Levee_Freeboard	S_Levee_Ln	LEVEE_ID	S_Lev_Freeboard_Ln	LEVEE_ID	1:M
Levee_SourceCit	S_Levee_Ln	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
N/A[1]	S_Levee_Ln	FEMA_LEV_ID	Levee_Centerline (MLI)	LEVEE_ID	1:1
Elements_SourceCit	S_Lev_Elements_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Breach_Levee_Scenario	S_Lev_Breach_Pt	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:1
Breach_SourceCit	S_Lev_Breach_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Freeboard_Levee_Scenario	S_Lev_Freeboard_Ln	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:1
Freeboard_SourceCit	S_Lev_Freeboard_Ln	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Levee_INUN_Scenario	S_Lev_Inundation_Ar	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:1
INUN_SourceCit	S_Lev_Inundation_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Levee_Pt_Rating_Curve	S_Lev_Rating_Curve_Pt	RATCURPTID	L_Lev_Rating_Curve	RATCURPTID	1:M
RAT_Curve_SourceCit	S_Lev_Rating_Curve_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Dams_AOMI	S_RM_Dams_Pt	AOMI_ID	S_AOMI_Pt	AOMI_ID	1:1
Dams_CF	S_RM_Dams_Pt	RM_DAMS_ID	S_Cr_Fac_Pt	RM_DAMS_ID	1:M
Dams_ESMT	S_RM_Dams_Pt	RM_DAMS_ID	S_Easement_Ar	RM_DAMS_ID	1:M
Dams_XS	S_RM_Dams_Pt	RM_DAMS_ID	S_Dams_XS_Ln	RM_DAMS_ID	M:M
Dams_DS_INUN	S_RM_Dams_Pt	RM_DAMS_ID	S_DS_Inundation_Ar	RM_DAMS_ID	1:M
Dams_US_INUN	S_RM_Dams_Pt	RM_DAMS_ID	S_US_Inundation_Ar	RM_DAMS_ID	1:M
Dams_SourceCit	S_RM_Dams_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
N/A[1]	S_RM_Dams_Pt	NID_ID	NID	NIDID	1:1
UDF_RA_UDF	S_UDF_Pt	UDF_ID	L_RA_UDF_Results	UDF_ID	1:M
UDF_SourceCit	S_UDF_Pt	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
US_INUN_Dam_Scenario	S_US_Inundation_Ar	SCENAR_ID	L_Dam_Scenario	SCENAR_ID	1:1
US_INUN_SourceCit	S_US_Inundation_Ar	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Dam_Scenario_MDL	L_Dam_Scenario	MDL_NFO_ID	FRD_Model_Info	MDL_NFO_ID	1:1
Dam_Scenario_SourceCit	L_Dam_Scenario	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Levee_Scenario_Dam_Scenario	L_Levee_Scenario	DAM_SCE_ID	L_Dam_Scenario	SCENAR_ID	1:1
Results_Dam_Scenario	L_Dams_XS_MDL _Results	SCENAR_ID	L_Dam_Scenario	SCENAR_ID	1:1
Results_SourceCit	L_Dams_XS_MDL_Results	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
LEV_Rating_Curve_Levee_Scenario	L_Lev_Rating_Curve	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:M
LEV_Rating_Curve_SourceCit	L_Lev_Rating_Curve	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
Levee_Scenario_MDL	L_Levee_Scenario	MDL_NFO_ID	FRD_Model_Info	MDL_NFO_ID	1:1

Relationship Class Name	Origin Table	Origin Field	Destination Table	Destination Field	Cardinality
Levee_Scenario_SourceCit	L_Levee_Scenario	SOURCE_CIT	L_Source_Cit	SOURCE_CIT	1:1
RA_DAM_Scenario	L_RA_Results	SCENAR_ID	L_Dam_Scenario	SCENAR_ID	1:1
RA_LEV_Scenario	L_RA_Results	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:1
UDF_Dam_Scenario	L_RA_UDF_Results	SCENAR_ID	L_Dam_Scenario	SCENAR_ID	1:1
UDF_LEV_Scenario	L_RA_UDF_Results	SCENAR_ID	L_Levee_Scenario	SCENAR_ID	1:1

[1] This is not a relationship class because the destination table exists in another database. The information is shown here to illustrate that the FRD is inter-related with other national databases.

1:1 indicates a one-to-one relationship.

1:M indicates a one-to-many relationship.

M:M indicates a many-to-many relationship.

8.0 Domains

The FRD uses geodatabase domains to provide standardized lists of acceptable values for some fields. Many of the domains in the FRD are shared with the FIRM and CNMS database designs. See the Domain Tables Technical Reference for details on the individual domains and the process for updating the domains.

Table 9. FRD Domains

Domain Name	Table	fGDB SHP Code Field	SHP Description Field Name	SHP Field Width
D_AOMI_Class	S_AOMI_PT	AOMI_CLASS	D_AOMICLSS	30
D_AOMI_Class	L_AOMI_Summary	AOMI_CLASS	D_AOMICLSS	30
D_AOMI_SourceCat	S_AOMI_Pt	AOMI_CAT	D_AOMICAT	30
D_AOMI_SourceCat	L_AOMI_Summary	AOMI_CAT	D_AOMICAT	30
D_AOMI_Typ	L_AOMI_Summary	AOMI_TYP	D_AOMITYP	60
D_AOMI_Typ	S_AOMI_Pt	AOMI_TYP	D_AOMITYP	60
D_Breach_Pt_Typ	S_Lev_Breach_Pt	PT_TYP	D_PT_TYP	63
D_Carto_Hydro_Code	S_Carto_Ar	F_CODE	D_F_CODE	25
D_Carto_Hydro_Code	S_Carto_Ln	F_CODE	D_F_CODE	25
D_Carto_Hydro_Code	S_Carto_Pt	F_CODE	D_F_CODE	25
D_Carto_Trans_Code	S_Carto_Ln	F_CODE	D_F_CODE	25
D_Carto_Trans_Code	S_Carto_Pt	F_CODE	D_F_CODE	25
D_Carto_Typ	S_Carto_Ar	F_TYPE	D_F_TYPE	30
D_Carto_Typ	S_Carto_Ln	F_TYPE	D_F_TYPE	30
D_Carto_Typ	S_Carto_Pt	F_TYPE	D_F_TYPE	30
D_Change	S_CSLF_Ar	PEAKDSCHG	D_PEAKDSCH	12
D_Change	S_CSLF_Ar	FLD_CTRLCHG	D_FLDCTRC	12
D_Change	S_CSLF_Ar	HYDSTRCHG	D_HYDSTRC	12
D_Change	S_CSLF_Ar	SEDCHG	D_SEDCHG	12
D_Change	S_CSLF_Ar	EROSIONCHG	D_EROSCHG	12
D_Change	S_CSLF_Ar	RUNOFFCHG	D_RNOFFCHG	12
D_Change	S_CSLF_Ar	DUNECHG	D_DUNECHG	12
D_Change	S_CSLF_Ar	SFHACHG	D_SFHACHG	12
D_Change	S_CSLF_Ar	FLDWYCHG	D_FLDWYCHG	12
D_Change	S_CSLF_Ar	NONSFHACHG	D_NONSFHA	12
D_Change	S_CSLF_Ar	CHHACHG	D_CHHACHG	12
D_Const_Typ	S_Levee_Ln	CONST_TYPE	D_CNST_TYP	30

Domain Name	Table	fGDB SHP Code Field	SHP Description Field Name	SHP Field Width
D_Const_Typ	S_RM_Dams_Pt	CONST_TYP	D_CNST_TYP	30
D_CRS_Rating	S_FRD_Pol_Ar	CRS_RATING	D_CRS_Rating	29
D_PFD_Size	S_PFD_Ar	DUNE_SIZE	D_PFD_SIZE	20
D_Esmt_Typ	S_Easement_Ar	ESMT_TYP	D_ESMT_TYP	20
D_Event	L_Dam_Scenario	EVENT	D_EVENT	40
D_Event	S_Inc_Flood_Scen_Ar	RETURN_PER	D_RETRNPER	40
D_Event	L_RA_Results	RETURN_PER	D_RETRNPER	40
D_Event	L_RA_Summary	RETURN_PER	D_RETRNPER	40
D_Event	L_RA_UDF_Results	RETURN_PER	D_RETRNPER	40
D_Facility_Typ	S_UDF_Pt	FACLTY_TYP	D_FAC_TYP	20
D_Flooding_Source	L_Levee_Scenario	FLOOD_SRC	D_FLD_SRC	20
D_HAZ_Class	S_RM_Dams_Pt	HAZ_CLASS	D_HAZ_CLAS	20
D_Hazard_Typ	L_RA_Results	HAZARD_TYP	D_HAZ_TYP	20
D_Hazard_Typ	L_RA_Summary	HAZARD_TYP	D_HAZ_TYP	20
D_Hazard_Typ	L_RA_UDF_Results	HAZARD_TYP	D_HAZ_TYP	20
D_Horiz_Datum	S_FRD_Proj_Ar	H_DATUM	D_H_DAT	30
D_Horiz_Datum	FRD_Study_Info	H_DATUM	D_H_DAT	30
D_Hydra_Mdl	FRD_Model_Info	HYDRA_MDL	D_HYDRAMDL	83
D_Hydro_Mdl	FRD_Model_Info	HYDRO_MDL	D_HYDROMDL	40
D_Jurisdiction_Typ	FRD_Study_Info	JURIS_TYP	D_JURISTYP	22
D_Length_Units	S_Dams_XS_Ln	LEN_UNIT	D_LEN_UNIT	16
D_Length_Units	S_FRD_Proj_Ar	V_UNITS	D_V_UNITS	16
D_Levee_Accredidation	L_Levee_Scenario	LEV_AC_TYP	D_LEVACTYP	30
D_Levee_Analysis_Type	L_Levee_Scenario	LEV_AN_TYP	D_LEVANTYP	30
D_Levee_Event	L_Lev_Rating_Curve	SPC_TYP	D_SPC_TYP	30
D_Levee_Event	L_Levee_Scenario	EVENT	D_EVENT	30
D_Levee_Pt_Typ	S_Lev_Elements_Pt	LEV_PT_TYP	D_LEVPTTYP	25
D_Occupancy_Typ	S_UDF_Pt	OCCUP_TYP	D_OCCUPTYP	40
D_Pol_Typ	S_FRD_Pol_Ar	POL_TYP	D_POL_TYP	20
D_Proj_Unit	S_FRD_Proj_Ar	PROJ_UNIT	D_PRJUNIT	18
D_Proj_Unit	FRD_Study_Info	PROJ_UNIT	D_PRJUNIT	18
D_Projection	S_FRD_Proj_Ar	PROJECTION	D_PRJCTN	75
D_Projection	FRD_Study_Info	PROJECTION	D_PRJCTN	75
D_RA_Source	L_RA_Results	RA_SOURCE	D_RASOURCE	25

Domain Name	Table	fGDB SHP Code Field	SHP Description Field Name	SHP Field Width
D_Release_Typ	L_Dam_Scenario	RELEA_TYP	D_REL_TYP	20
D_Reservoir_Cond	L_Dam_Scenario	RSVR_COND	D_RSVR_CND	20
D_Runup_Mdl	FRD_Model_Info	RUNUP_MDL	D_RUNUPMDL	24
D_SFHA_FLDWY	L_CSLF_Summary	LOCATION	D_LOCATION	30
D_State_FIPS	S_FRD_Pol_Ar	ST_FIPS	D_ST_FIPS	35
D_State_FIPS	S_RM_Dams_Pt	ST_FIPS	D_ST_FIPS	35
D_State_Name	FRD_Study_Info	STATE_NM	D_STATE_NM	24
D_Study_Prefix	FRD_Study_Info	STUDY_PRE	D_STUDYPRE	19
D_Study_Typ	FRD_Model_Info	STUDY_TYP	D_STUDYTYP	28
D_Surge_Mdl	FRD_Model_Info	SURGE_MDL	D_SURGEMDL	37
D_Topo_Typ	S_CSLF_Ar	PRE_TOPO	D_PRE_TOPO	20
D_Topo_Typ	S_CSLF_Ar	NEW_TOPO	D_NEW_TOPO	20
D_TrueFalse	S_CSLF_Ar	MDLMETHODS	D_MDLMETH	10
D_TrueFalse	S_CSLF_Ar	CHANNELCHG	D_CHNNLCHG	10
D_TrueFalse	S_CSLF_Ar	TOPOCHG	D_TOPOCHG	10
D_TrueFalse	S_CSLF_Ar	LEVEECHG	D_LEV_CHG	10
D_TrueFalse	S_FRD_Pol_Ar	NFIPSTATUS	D_NFIPSTAT	10
D_TrueFalse	S_FRD_Pol_Ar	HMP_STATUS	D_HMP_STAT	10
D_TrueFalse	S_Levee_Ln	EAP	D_EAP	10
D_TrueFalse	S_PFD_Ar	PFD_TF	D_PFD_TF	10
D_TrueFalse	S_RM_Dams_Pt	EAP	D_EAP	10
D_TrueFalse	S_RM_Dams_Pt	DEFICIENCS	D_DEFCNCS	10
D_V_Datum	S_FRD_Proj_Ar	V_DATUM	D_V_DATUM	43
D_V_Datum	FRD_Study_Info	V_DATUM	D_V_DATUM	43
D_Wave_Haz	S_Simpl_Cst_Zone_Ar	WAVE_HAZ	D_WAVE_HAZ	20
D_Wave_Mdl	FRD_Model_Info	WAVEHT_MDL	D_WAVHTMDL	23
D_Zone	S_CSLF_Ar	PRE_ZONE	D_PRE_ZONE	17
D_Zone	S_CSLF_Ar	NEW_ZONE	D_NEW_ZONE	17
D_Zone_Subtype	S_CSLF_Ar	PRE_ZONEST	D_PREZONST	72
D_Zone_Subtype	S_CSLF_Ar	NEW_ZONEST	D_NEWZONST	72