

Flood Risk Product Guide



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1 – Getting Started

In this section

- Overview
- Data Sources
- Spatial Module Specifications
- GeoEnrichment Module Specifications

Overview

Flood Risk is part of the Pitney Bowes Risk Data Suite, which provides comprehensive, location-based coverage of weather, geologic event, and other natural risks impacting asset owners. Each product features a spatial file(s) for visualization and a GeoEnrichment file which delivers information on a pbKey™ for operational efficiency at the address level. Products in the Risk Data Suite include:

- Earth Risk
- Coastal Risk
- Wildfire Risk
- Property Fire Risk
- Flood Risk
- Historical Weather Risk

The multiple components of the Risk Data Suite combine to give a detailed history of the natural disasters for a region. Applying this data allows for better visualization and identification of potential asset exposure. This enables better-informed decisions, reduced exposure to risk, controlled costs, and enhanced profitability.

Flood Risk provides the following components in the spatial module (Flood Risk Pro):

- FLOOD
- COMM
- COMM_InitDates

Flood Risk provides the following components in the GeoEnrichment module:

- GE Risk - Flood

Data Sources

- CBC Innovis
- Pitney Bowes Software

Spatial Module Specifications

Update Frequency

The spatial module (Flood Risk Pro) is updated quarterly.

File Formats

The spatial module (Flood Risk Pro) is available in the following formats:

- MapInfo TAB
- Esri SHP
- MSSQL

Installation

To install Flood Risk, reference all the files in the **Data** folder.

Product Documentation

Product documentation is located in the **Docs** folder.

Projection

Latitude/Longitude WGS84

Coverage

United States (including Alaska, DC, and Hawaii).

GeoEnrichment Module Specifications

Update Frequency

The GeoEnrichment module is updated quarterly.

File Formats

The GeoEnrichment module is available in the following formats:

- Pipe-delimited text
- H2DB database

Installation

To install GeoEnrichment Flood Risk:

1. Download the compressed data file to your computer.
2. Open the compressed file and find the base data folder containing the documentation file link.
3. Extract the base folder and locate the final .TXT or database file:

Example: If you downloaded a compressed file named **Distance_To_Coast_C_TXT201712.7z**, extract this file and locate a compressed file with the name **distance_to_coast_txt.7z** with a documentation link file. Finally, extract **distance_to_coast_txt.7z** to find **distance_to_coast_final_output.txt** as the data file.

4. Once extracted, data can be loaded into a database, GIS software, or the Pitney Bowes Spectrum Technology Platform.

For more information on using Pitney Bowes tools, please visit the [MapInfo® Pro support page](#) or the [Spectrum support page](#).

Address Fabric Version Compatibility

All risk databases require the Address Fabric, April 2019 vintage except Crime Index, which is compatible with the Address Fabric, July 2018 vintage.

Coverage

United States (including Alaska, DC, and Hawaii).

2 – Flood Risk Pro (Spatial Module)

In this section

Description

Flood Risk Pro Layers

Notes on Querying Flood Information

Flood Risk Pro Table Structures

Definitions of FEMA Flood Zones

Flood Zone Map Type Definitions

ADDL_INFO Definitions

Description

Flood Risk Pro provides digital versions of FEMA maps including Flood Insurance Rate Maps (FIRM), Flood Hazard Boundary Maps (FHBM), and Letters of Map Revisions (LOMR). Letters of Map Amendment (LOMA), typically issued along with elevation certificates for individual properties in Special Flood Hazard Areas (SFHAs), are not included in the product but can usually be found through local community officials or property developers.

The compilation of flood hazard maps in Flood Risk Pro are updated between releases of the data product. Since the data product is released on a quarterly basis, the currency between the product and official revision dates may vary by up to approximately ten weeks.

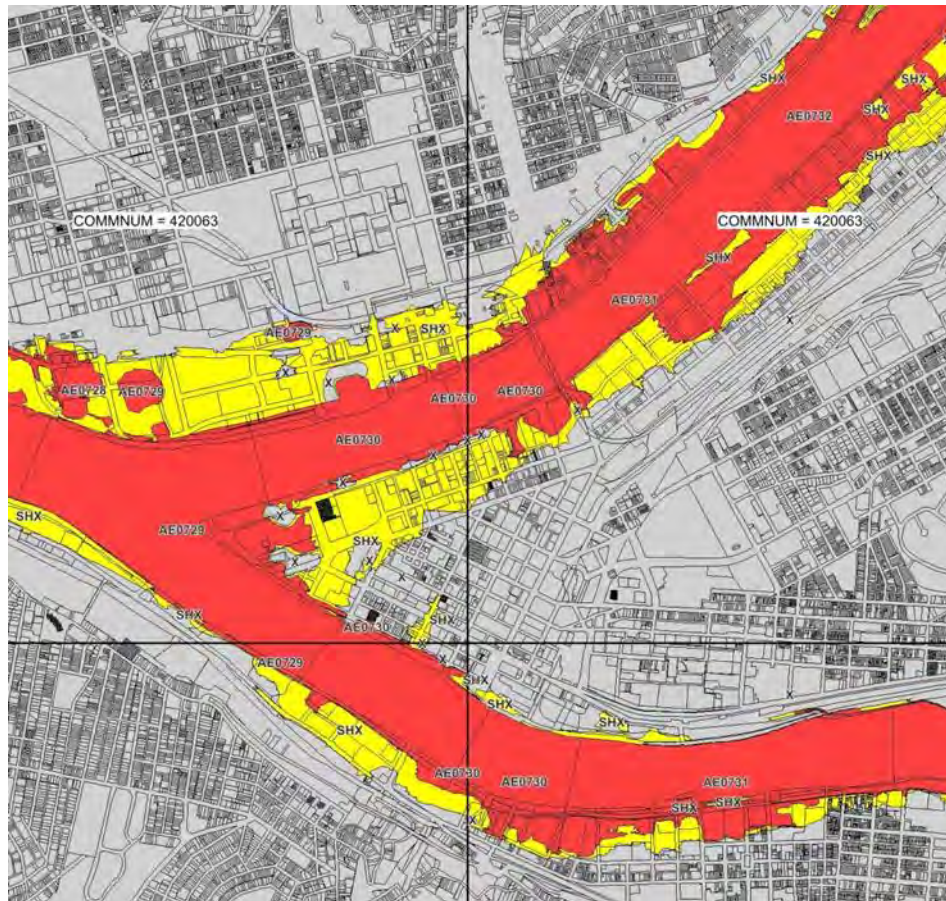


Figure 01 - Flood Risk Pro in MapInfo Professional, with parcel data shown

Flood Risk Pro Layers

Flood Risk Pro consists of three layers: the FLOOD layer, the COMM layer, and the COMM_InitDates layer.

FLOOD Layer

The FLOOD layer contains flood hazard polygons and attributes (see [Flood Risk Pro Table Structures](#)). This layer can be used to determine the locations of high-risk, moderate-to-low risk, and undetermined-risk areas. This information is especially useful to lenders, developers, and insurance companies.

COMM Layer

The COMM layer compliments the FLOOD layer. It contains information related to community participation in the National Flood Insurance Program (NFIP). The COMM layer is important for determining a community's participation status in the program because new NFIP policies cannot be written in communities that do not participate. Note that a lack of participation in NFIP does not mean that a property is not insurable through a private insurer; it means that it is not insurable through the NFIP. Conversely, if a community does participate in NFIP, holding a NFIP emergency participation status can result in significantly higher insurance rates (and lower coverage) than having regular participation status. Community participation status can be found in the **COMMSTATUS** field.

COMM_InitDates Layer

The COMM_InitDates layer contains the initial date of the Flood Hazard Boundary Map as well as the initial date of the Flood Insurance Rate Map for communities in the COMM layer. The COMM_InitDates and COMM layers can be joined using the **COMMNUM** field.

Notes on Querying Flood Information

For unincorporated counties, all flood information is contained within the attributes associated with the FLOOD polygon layer. For incorporated counties, community specific information can be determined from the COMM layer.

The **COMMNUM** and **COMMSTATUS** fields in the FLOOD layer are set to blank for flood hazard polygons within incorporated counties. For those locations, the **COMMNUM** and **COMMSTATUS** values can be determined from the corresponding polygon in the COMM layer.

Flood Risk Pro Table Structures

The tables in this section detail information available in the Flood Risk Pro layers.

FLOOD Table Structure – TAB & SHP Formats

Field Name	Data Type (Length)	Description
ID	INTEGER	Unique identifier for flood polygon
MAPNAME	CHAR (11)	FEMA Map panel identifier
TYPE	CHAR (3)	See TYPE definitions
STATECODE	CHAR (2)	State FIPS code
FIPSCODE	CHAR (5)	Deprecated
FLOODZONE	CHAR (12)	FLOOD ZONE with BFE ELEV or additional information – see ADDL_INFO Definitions
PRIM_ZONE	CHAR (4)	FLOOD ZONE
ADDL_INFO	CHAR (5)	Additional information – see ADDL_INFO definitions.
BFE_ELEV	CHAR (4)	Base Flood Elevation (BFE) in feet
COMMNUM	CHAR (6)	Community number

Field Name	Data Type (Length)	Description
COMMSTATUS	CHAR (3)	Community status in the National Flood Insurance Program (NFIP): E = Emergency NIP = Not in program R = Regular SUS = Suspended
MAP_EFF_DATE	DATETIME	Map effective date
RMS_ERR	DECIMAL (11,0)	Method used to adjust paper maps to the digital street layer for digitization. This method is not used for new DFIRM-only areas.
LOMR_DATE	DATETIME	Letter of Map Revision date
CASENUMBER	CHAR (20)	Letter of Map Revision case number
SHAPE_AREA	FLOAT	Deprecated
SHAPE_LEN	FLOAT	Deprecated

FLOOD Table Structure – SQL Format

Field Name	Data Type (Length)	Description
ID	INTEGER	Unique identifier for flood polygon
MAPNAME	VARCHAR (11)	FEMA Map panel identifier
TYPE	VARCHAR (3)	See TYPE definitions
STATECODE	VARCHAR (2)	State FIPS code
FIPSCODE	VARCHAR (5)	Deprecated
FLOODZONE	VARCHAR (12)	FLOOD ZONE with BFE ELEV or additional information – see ADDL_INFO definitions.
PRIM_ZONE	VARCHAR (4)	FLOOD ZONE
ADDL_INFO	VARCHAR (5)	Additional information – see ADDL_INFO definitions.
BFE_ELEV	VARCHAR (4)	Base flood elevation (BFE) in feet
COMMNUM	VARCHAR (6)	Community number
Field Name	Data Type (Length)	Description
COMMSTATUS	VARCHAR (3)	Community status in the National Flood Insurance Program (NFIP): E = Emergency NIP = Not in program R = Regular SUS = Suspended
MAP_EFF_DATE	DATETIME	Map effective date
RMS_ERR	DECIMAL (11,0)	Method used to adjust paper maps to the digital street layer for digitization. This method is not used for new DFIRM-only areas.
LOMR_DATE	DATETIME	Letter of Map Revision Date
CASENUMBER	VARCHAR (20)	Letter of Map Revision case number
SHAPE_AREA	FLOAT	Deprecated
SHAPE_LEN	FLOAT	Deprecated
MI_Style	VARCHAR (254)	MapInfo Professional style information
OBJ		Region object

COMM Table Structure – TAB & SHP Formats

Field Name	Data Type (Length)	Description
ID	INTEGER	Unique identifier for flood polygon
MAPNAME	CHAR (11)	FEMA Map panel identifier
TYPE	CHAR (3)	See TYPE definitions
STATECODE	CHAR (2)	State FIPS code
FIPSCODE	CHAR (5)	Deprecated
COMMNUM	CHAR (6)	Community number
COMMSTATUS	CHAR (3)	Community status in National Flood Insurance Program (NFIP): E = Emergency NIP = Not in program R = Regular SUS = Suspended
RMS_ERR	DECIMAL (11,0)	Method used to adjust paper maps to digital street layer for digitization. This method is not used with new DFIRM maps.
SHAPE_AREA	FLOAT	Deprecated
SHAPE_LEN	FLOAT	Deprecated

COMM Table Structure – SQL

Field Name	Data Type (Length)	Description
ID	INTEGER	Unique identifier for flood polygon
MAPNAME	VARCHAR (11)	FEMA Map panel identifier
TYPE	VARCHAR (3)	See TYPE definitions
STATECODE	VARCHAR (2)	State FIPS code
FIPSCODE	VARCHAR (5)	Deprecated
COMMNUM	VARCHAR (6)	Community number
COMMSTATUS	VARCHAR (3)	Community status in National Flood Insurance Program (NFIP): E = Emergency NIP = Not in program R = Regular SUS = Suspended
RMS_ERR	DECIMAL (11,0)	Method used to adjust paper maps to digital street layer for digitization. This method is not used with new DFIRM maps.
SHAPE_AREA	FLOAT	Deprecated
SHAPE_LEN	FLOAT	Deprecated
MI_Style	VARCHAR (254)	MapInfo Professional Style information
OBJ		Region object

COMM_InitDates Table Structure – TAB, SHP, and SQL Formats

Field Name	Data Type (Length)	Description
ID	INTEGER	Unique identifier for flood polygon
COMMNUM	CHAR (6)	Community number
COMMNAME	CHAR (254)	Community name
COUNTY	CHAR (250)	US county name
INIT_FHBM	DATETIME	Initial date of Flood Hazard Boundary Map
INIT_FIRM	DATETIME	Initial date of Flood Insurance Rate Map

Definitions of FEMA Flood Zones

Flood zones are geographic areas that FEMA has defined according to varying levels of flood risk and type of flooding. These zones are depicted on published Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBM).

Special Flood Hazard Areas – High Risk

Special Flood Hazard Areas (SFHAs) represent areas subject to inundation by 1-percent-annual-chance floods. Structures located within SFHAs have a 26 percent chance of flooding during the life of a standard 30-year mortgage. Federal floodplain management regulations and mandatory flood insurance purchase requirements apply in these zones.

Zone	Description
A	Areas subject to inundation by a 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown.
AE, A1-A130	Areas subject to inundation by a 1-percent-annual-chance flood event, as determined by detailed methods. BFEs are shown within these zones. (Zone AE is used on new and revised maps in place of Zones A1-A130.)
AH	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually areas of ponding), where depths average 1-3 feet. BFEs derived from detailed hydraulic analyses are shown in these zones.
AO	Areas subject to inundation by 1-percent-annual-chance shallow flooding (usually sheet flow on sloping terrain), where depths average 1-3 feet. Average flood depths derived from detailed hydraulic analyses are shown within these zones.
AR	Area containing a decertified, previously accredited flood control system that is in the process of being restored to provide base flood protection.
A99	Areas subject to inundation by 1-percent-annual-chance flood events, which will ultimately be protected by an under-construction federal flood protection system. These are areas of special flood hazard where enough progress has been made on the construction of a protection system (dike, dam, levees, etc.) to consider it complete for insurance rating purposes. Zone A99 may be used only when the flood protection system has reached specified statutory progress toward completion. No BFEs or flood depths are shown.
*Source: Chatham County-Savannah Metropolitan Planning Commission	

Coastal High Hazard Areas – High Risk

Coastal High Hazard Areas (CHHAs) are areas subject to inundation by 1-percent-annual-chance flood, extending from offshore to the inland limit of a primary frontal dune along an open coast, or any other areas subject to high-velocity wave action from storms or seismic sources. Structures located within a CHHA have a 26 percent chance of flooding during the life of a standard 30-year mortgage. Federal floodplain management regulations and mandatory purchase requirements apply in these zones.

Zone	Description
V	Coastal area subject to inundation by a 1-percent-annual-chance flood event and subject to additional hazards associated with storm-induced waves. Because detailed coastal analyses have not been performed, no BFEs or flood depths are shown.
VE, V1-V130	Coastal areas subject to inundation by a 1-percent-annual-chance flood event and subject to additional hazards associated with storm induced high velocity wave action. BFEs derived from detailed coastal hydraulic analyses are shown. (Zone VE is used on new and revised maps in place of Zones V1-V130.)
*Source: Chatham County-Savannah Metropolitan Planning Commission	

Moderate and Minimal Risk Areas

Areas of moderate or minimal hazard are studied based on the principal source of flood in the area. However, buildings within these zones could also be flooded by severe, concentrated rainfall coupled with inadequate drainage systems. Local storm water drainage systems are not normally accounted for in a community's flood insurance study. The failure of a local drainage system can create areas of high flood risk within these zones. Flood insurance is available in participating communities, but is not required by regulation in these zones. Nearly 25% of all flood claims are from structures in these zones.

Zone	Description
B, X (shaded)	Moderate-risk areas within the 0.2-annual-percent-chance floodplain; areas of 1-percent-annual-chance flooding where average depths are less than 1 foot; areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile and; areas protected from 1-percent-annual-chance flooding by a levee. No BFEs or base flood depths are shown in these areas. (Zone X – shaded – is used on new and revised maps in place of Zone B.)
C, X (unshaded)	Minimal-risk areas outside 1-percent- and 2-percent-annual-chance floodplains. No BFEs or base flood depths are shown. (Zone X – unshaded – is used on new and revised maps in place of Zone C.)
*Source: Chatham County-Savannah Metropolitan Planning Commission	

Undetermined Risk Areas

Zone	Description
D	Unstudied areas where flood hazards are undetermined but flooding is possible. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.
*Source: Chatham County-Savannah Metropolitan Planning Commission	

Additional Risk Areas

In addition to the areas described in the previous section, the following zone designations also exist:

Zone	Description
SHX (Shaded X)	Areas where there is a 0.2 percent chance of a flood in any given year (also known as a 500-year flood zone). FIRMs designated these as X zones, but have shading.
None	Areas for which there is no available FEMA flood zone.

Flood Zone Map Type Definitions

Type	Remarks
Q3P	Printed panel in Q3 data
Q3I	Panel not printed in Q3 data
DLC	Printed/not printed panel in DLG data
DLP	Printed panel in DLG data
DLI	Panel not printed in DLG data
PFP	Printed panel with enhanced details (such as floodways, per old specifications)
PFI	Panel not printed (per old specifications for enhanced layers)
PF1	Definition pending
PFC	Printed/not printed panel (as per old specifications)
P2P	Printed panel (without floodways, per current specifications)
P2I	Panel not printed (per current specifications)
P2C	Printed/not printed panel (per current specifications)
NMP	Never mapped area
NMA	If a valid zone is not available, flood zone is listed as NMA for never mapped areas.
Q3C	Printed/not printed panel in Q3 data

ADDL_INFO Definitions

Type	Remarks
UB	Flood polygon with COBRA zones where identification date is not clear on FIRM.
UB1	Flood polygon with COBRA zones date 10-01-1983.
UB10	Flood polygon with COBRA zones dated 12-06-1999.
UB11	Flood polygon with COBRA zones dated 10-18-2004.
UB12	Flood polygon with COBRA zones dated 11-29-1999.
UB13	Flood polygon with COBRA zones dated 10-01-1983.
UB2	Flood polygon with COBRA zones dated 10-01-1983.
UB21	Flood polygon with COBRA zones dated 10-01-1983.
UB3	Flood polygon with COBRA zones dated 10-01-1983.
UB31	Flood polygon with COBRA zones dated 11-16-1991.
F-UB3	Floodways with COBRA zones
UB4	Flood polygon with COBRA zones dated 10-23-1992.

Type	Remarks
UB41	Flood polygon with COBRA zones dated 10-23-1992.
UB5	Flood polygon with COBRA zones dated 11-15-1993.
UB51	Flood polygon with COBRA zones dated 11-16-1996.
UB6	Flood polygon with COBRA zones dated 02-24-1997.
UB61	Flood polygon with COBRA zones dated 02-24-1997.
UB8	Flood polygon with COBRA zones dated 02-23-1995.
UB9	Flood polygon with COBRA zones dated 10-19-2000.
UB91	Flood polygon with COBRA zones dated 10-27-2000.
(NULL)	Flood polygon not covered by COBRA zone and LOMR updates.
FE	Flood polygon falling within flood easement boundary as printed on FIRMs.
LOMR	Flood polygon with LOMR updates.
F	Flood polygon for which Base Flood Elevation (BFE) is available.
L	Flood polygon covered by levee, as printed on FIRMs.

3 – Flood Risk (GeoEnrichment Module)

In this section

- Overview
- GeoEnrichment Flood Risk Table Structure

Overview

GeoEnrichment Risk Data provides all information found in its spatial counterpart along with relevant proximity measurements for additional insight at the address level. All data is pre-processed so that it is immediately accessible with a pbKey™ from a geocoded address or US Address Fabric record.

GeoEnrichment Flood Risk Table Structure

Field Name	Data Type (Length)	Description
PBKEY	CHAR (17)	Unique and persistent address identifier
Id	INTEGER	Unique identifier for flood polygon
MapName	CHAR (11)	FEMA Map panel identifier.
Type	CHAR (3)	Flood zone map type. For definitions, please refer to the Flood Zone Map Type Definitions table.
StateCode	CHAR (2)	State FIPS code.
FipsCode	CHAR (5)	Deprecated
FloodZone	CHAR (12)	Flood zone with base flood elevation (Bfe_Elev) or additional information. Please refer to the ADDL_INFO Definitions table, above.
Prim_Zone	CHAR (4)	Flood zone
Addl_Info	CHAR (5)	Additional information. Refer to the ADDL_INFO Definitions table, above.
Bfe_Elev	CHAR (4)	Base flood elevation (BFE), in feet.
Commnum	CHAR (6)	Community number
CommStatus	CHAR (3)	Community Status in the National Flood Insurance Program (NFIP): E – emergency NIP – not in program R – regular SUS - suspended
Map_Eff_Date	DATETIME	Map effective date.
Lomr_Date	DATETIME	Letter of Map Revision date.
CaseNumber	CHAR (20)	Letter of Map Revision case number.
INIT_FHBM	DateTime	Initial date of Flood Hazard Boundary Map
INIT_FIRM	DateTime	Initial date of Flood Insurance Rate Map
Elevation	FLOAT	Point elevation of the pbKey™ location
Dist100yr	FLOAT	Distance to 100-year flood zone expressed in feet. Distance is not calculated for locations more than 5280 feet (1 mile) away from a 100 year flood zone and will show a value of -999999
Dist_Shx	FLOAT	Distance to SHX or B flood zone expressed in feet. Distance is not calculated for locations more than 5280 feet (1 mile) away from a SHX (B) flood zone and will show a value of -999999

Field Name	Data Type (Length)	Description
Elv_Prof	CHAR (512)	List of elevation values at 250 foot intervals from the pbKey™ location to the closest water body. The first measurement listed is the elevation of the pbKey™ location, and the last measurement listed is the elevation of the water body. All measurements in between reflect the 250 foot intervals. The elevation profile is only calculated for locations within 5280 feet (1 mile) of a water body, and locations more than 1 mile away from a water body will show -999999
Elv_Prof_Dst	DOUBLE	Distance in feet to the nearest water body used for the elevation profile calculation.
Waterbody	CHAR (100)	Name of the closest body of water.

Product Feedback and Support

Have an idea to improve this product? We invite you to submit your innovative ideas at <https://ideas.pitneybowes.com>. You can easily submit new ideas or comment on existing ones in a way that is visible and transparent to all participants. You also have the unique opportunity to contribute to an idea's overall popularity by promoting that idea. The Pitney Bowes Software and Data Product Management team will review popular ideas and evaluate their potential for inclusion in our short- and long-term development plans. Participants who submit or comment on an idea may be contacted by our team. Your contact information will not be used for any other purpose.

We value your contribution toward making Pitney Bowes Software and Data offerings even better and look forward to seeing your ideas.

To learn how Pitney Bowes Location Intelligence products can support your business, please visit <https://dataguide.pitneybowes.com/>. You can also find more information about our Data portfolio at <https://www.pitneybowes.com/us/data.html>.

Product Support

If you have any questions or concerns, contact our Support team directly by calling **800 762 5158** or emailing software.support@pb.com.

Knowledge Communities

Talk to our data experts or start your own discussion. Visit <https://community.pitneybowes.com/communities/community-home?CommunityKey=1a4c4d54-aa19-4009-b5ed-bdc52501723b> to get started.

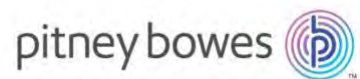
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This document was published in July, 2019 and is intended to reflect the products (table structures, coverage, etc.) as of that date. The actual data content (as opposed to product content) is updated on a regular basis and does not require documentation updates.



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