Appendix F: Hazus-MH Data Dictionary

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F1. Introduction

This data dictionary documents the structure and data elements of the Hazus-MH inventory data set that serves as source for creating study regions. The document is organized in 11 chapters. Chapter 1 introduces the inventory organization and storage as a system of folders and files; lists the major database components or databases and how they are organized by theme; and explains the naming conventions of feature classes and tables. The chapters describe each database separately:

Chapter 2 syBoundary.mdb—System boundaries Chapter 3 Bndrygbs.mdb—State boundaries Chapter 4 Ef.mdb—Essential facilities Chapter 5 TRN.mdb—Transportation systems UTIL.mdb—Lifeline utility systems Chapter 6 Chapter 7 HPLF.mdb—High potential loss facilities Chapter 8 flAg.mdb—Agriculture inventory flVEH.mdb—Vehicle inventory (flood hazard specific) Chapter 9 Chapter 10 huTemplateGBS.mdb—Vehicle inventory (hurricane hazard specific) Chapter 11 MSH.mdb—Occupancy mapping scheme

Each geodatabase section includes an overview of the database and how it is identified; a main table listing the sub-tables and feature classes, including a brief description of each; and a detailed table for each feature class and table. For each feature class and table, the following information is documented:

Identification: Name of feature class or table

Type: ESRI's feature class or table type

Purpose: Entity purpose in the aggregation process or/and analysis

Data: Feature classes and tables field definition

Feature class field definition

Name: Field name. If a field is found in the study region databases, but not in the state database, a value of N/A is included in the column.

Field Type: Contains the field format. If Access field type differs from ESRI field type, Access field type is shown in italics.

Index: Indicates if the field has index. Index properties are provided.

Required: For the aggregation process. Provides an indication of whether a value must be provided other than Null and those specified on Values column.

Values: Identifies valid values for this data element.

Field Description: Provides a human readable description of the field's data element.

F2. Statewide Hazus Data Inventory

Starting with Hazus-MH MR5, the Hazus-MH state-level default databases are stored in a compressed format that allows all the U.S. data to fit in one DVD. Both the setup and the data DVDs can be ordered from the FEMA Distribution Center.

The data for each state is compressed as one self-extracting file named with the state code (CA.EXE for California, GA.EXE for Georgia, and so on).

When uncompressed, the state-specific data consists of:

- A set of geodatabases with feature classes and tables related to all hazards.
- For states considered by the Hurricane (HU) Model, the State folder contains:
- A folder named HU consisting of one Access database—huTemplateGBS.mdb— that contains census tract information relative to terrain, wind speeds, and tree parameters.
- A binary file that contains hurricane event data for probabilistic analysis named
 XX HUR 50.BIN where XX is the abbreviation of the state name.

Because Hazus-MH relies in ArcGIS, most default inventory data are stored in ArcGIS geodatabases, which are in Access format. The exceptions are a few Access databases that comprise plain tables. Also, feature classes and tables are organized in geodatabases by theme. For instance, transportation items are contained in a transportation-specific database

| "TRN.mdb". se is discussed | | geodatabases | included | in | Hazus-MH. | Each |
|----------------------------|--|--------------|----------|----|-----------|------|
| | | | | | | |
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Table 1: Hazus-MH Inventory Geodatabases

| | | Location Relative to |
|----------------|--|------------------------|
| Database Name | Description | Hazus Data DVD1: |
| syBoundary.mdb | Contains GIS boundary information for the entire | Located in the root |
| | United States relative to states, counties, and census | directory of the DVD |
| | tracts. | |
| Bndrygbs.mdb | Contains GIS boundary information for counties, | Located in root/state |
| | census tracts, and census blocks for a given state. | (e.g., Alabama is AL1) |
| | Also contains aggregated data including demographics, | folder of the DVD |
| | building square footage, building counts, structure | |
| | exposure, and content exposure for a given state. | |
| Ef.mdb | Contains GIS location and hazard information for | Located in root/state |
| | essential facilities including schools, hospitals, medical | (e.g., Alabama is AL1) |
| | care facilities, police stations, and fire stations. | folder of the DVD |
| flAG.mdb | Contains GIS boundary information for crops grown in | Located in root/state |
| | areas of the state. Flood (FL) is the only model of the | (e.g., Alabama is AL1) |
| | Hazus system to use this database. | folder of the DVD |
| flVEH.mdb | Contains information for daytime and nighttime | Located in root/state |
| | vehicle inventory by census block for the state. Flood | (e.g., Alabama is AL1) |
| | (FL) is the only model of the Hazus software to use this folder of the | |
| | database. | |
| HPLF.mdb | Contains GIS location and hazard information for high | Located in root/state |
| | potential loss facilities (HPLF) that include dams, | (e.g., Alabama is AL1) |
| | hazardous materials, levees, military installations, and | folder of the DVD |
| | nuclear facilities. | |
| MSH.mdb | Contains information for mapping schemes for the | Located in root/state |
| | Earthquake (EQ) and Flood (FL) models. These | (e.g., Alabama is AL1) |
| | mapping schemes refer to construction aspects for | folder of the DVD |
| | buildings. | |
| TRN.mdb | Contains GIS location and hazard information for | Located in root/state |
| | transportation facilities including airports, buses, | (e.g., Alabama is AL1) |
| | ferries, highways, light rail, railways, bridges, ports, | folder of the DVD |

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¹ The Hazus-MH MR3 installation allows the user to specify the folder where the state data will be copied through the "Choose Data Path" dialog in the installation wizard. By default, the installation wizard will show the data path from where the installation program was launched (usually from a DVD drive). To access data from a location than the DVD drive, users must follow Hazus-MH Technical Manual instructions.

| | and runways. | |
|-------------------|---|-------------------------|
| UTIL.mdb | Contains GIS location and hazard information for | Located in root/state |
| | utility features and facilities including | (e.g., Alabama is AL1) |
| | communications, electric, natural gas, oil, potable | folder of the DVD |
| | water, and wastewater. | |
| huTemplateGBS.mdb | Contains census tract information for terrain, wind | Located in |
| | speeds, and tree parameters. | root/state/hu folder of |
| | | the DVD. This file is |
| | | only available for |
| | | costal states which |
| | | have been setup for |
| | | hurricanes |

While point, line, and polygon features are stored in ESRI feature classes, not all attributes related to a particular entity are stored in the same feature record. Generally, attributes related to all hazards are stored in the feature record in a feature class named with a prefix hz. For instance, police station points are stored in a feature class name hzPoliceStation, while attributes specific to hazards (such as earthquakes and floods) are stored in records in separate tables. Table 3 shows all feature classes and tables with their respective prefix.

Table 2: Feature Classes and Table Prefixes

| Prefix | Description | Example |
|--------|-----------------------------------|-----------------|
| hz | All hazards dataset | hzPoliceStation |
| eq | Earthquake Model specific dataset | eqPoliceStation |
| fl | Flood Model specific dataset | flPoliceStation |

While point, line, and polygon features are stored in ESRI feature classes, not all attributes related to a particular entity are stored in the same feature record. In general, attributes related to all hazards are stored in the feature record in a feature class named with a prefix hz. For instance, police station points are stored in a feature class name hzPoliceStation while attributes specific to hazards (such as earthquake and flood) are stored in records in separate tables. Table 3 shows all feature classes and tables with their respective prefixes.

F3. System Boundaries: syBoundary.mdb

F.3.1 Database Overview

The syBoundary is an ESRI Access personal geodatabase that contains the definition of state, county, and census tract boundaries in three feature classes. The geographical extent is nationwide, including features for the 50 states, the District of Columbia, and territories. This geodatabase is crucial during the aggregation process. It is used by Create Region Wizard to guide the user through the definition of a region.

F.3.2 Identification

syBoundary.mdb

F.3.3 Database Content

The syBoundary.mdb database includes:

| Name | Туре | Content |
|----------|--------------------|---|
| syState | ESRI Feature Class | US Census 2000 state boundaries for the 50 states, |
| | | the District of Columbia, and territories |
| syCounty | ESRI Feature Class | US Census 2000 county boundaries for the 50 states, |
| | | the District of Columbia, and territories |
| syTract | ESRI Feature Class | US Census 2000 census tract boundaries for the 50 states, |
| | | the District of Columbia, and territories |

F.3.3.1 State Boundaries: syState Feature Class

| Identification: syState | | | | | | |
|----------------------------------|---|--|------|-----------|--------|-------------|
| Type: ESRI Polygon Feature Class | | | | | | |
| Purpose: | Feature class that plays a crucial role during the aggregation process. It belongs to syBoundary.mdb. Provides the definition of state boundaries and | | | | | |
| | | | | • | | |
| | | the states available for the region aggregation process. | | | | |
| Data: | | | | | | |
| Feature Class Field | Feature Class Field Definition | | | | | |
| Name | ESRI T | ype | Inde | Required* | Values | Description |
| | (Size) | | x* | | | |
| | Access Type | | | | | |
| | (Size) | | | | | |

| StateFips | Text(2) | T | Т | FIPS state | Federal Information |
|--------------|------------|----------|----------|----------------|----------------------------------|
| | | | | code | Processing Standard (FIPS) |
| | | | | | state code |
| State | Text(2) | T, | Т | USPS State | United States Postal Service |
| | | U, A | | name | (USPS) state abbreviation |
| | | | | abbreviation | |
| StateName | Text(40) | F | | | State name |
| Region | Short(2) | F | Т | 1 = Western | For determining attenuation |
| | Integer(2) | | | United States | relationships (EQ Model). |
| | | | | 2= Central | See the Hazus-MH |
| | | | | Eastern United | Earthquake Model Technical |
| | | | | States | Manual, Chapter 4, |
| | | | | | Subsection 4.1.1.2, Input |
| | | | | | Requirements and Output |
| | | | | | Information, for details. |
| NumCounties | Short(2) | F | Т | | Number of counties in the |
| | Integer(2) | | | | syCounty feature class |
| | | | | | belonging to the state record |
| HUState | Short(2) | F | T | 0 = Non | To identify if the State can be |
| | Integer(2) | | | Hurricane | aggregated for the HU Model |
| | | | | State | study region. If the value is 1, |
| | | | | 1 = Hurricane | the state will be available in |
| | | | | State | the Create Region Wizard |
| | | | | | State List. |
| * T_T P_P-1. | | III I—NI | T T: A A | | 1: |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.3.3.2 County Boundaries: syCounty Feature Class

| | A system be aggregation county bour process. | process. It | eature class that play belongs to syBound | rs a crucial role during the ary.mdb. Provides the definition of le for the region aggregation |
|-----------------------|--|---|--|---|
| Definition RI Type | aggregation county bour process. | process. It ndaries and | belongs to syBound | ary.mdb. Provides the definition of |
| RI Type | | Required | | |
| RI Type | | Required | | |
| | Index* | Required | | |
| cess pe (Size) | | * | Values | Description |
| xt(5) | T, U, A | T | Five-digit FIPS county code | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three digits are the county code. |
| xt(3) | T, NU, | Т | Three-digit FIPS county code | Last three digits of the FIPS county code |
| xt(40) | T, NU, | Т | | County name |
| xt(2) | T, NU, | Т | USPS state abbreviation | USPS state abbreviation |
| xt(2) | T, NU, | Т | FIPS state code | FIPS state code |
| ort(2) eger(2) | F | F | | Number of tracts in the syTract feature class belonging to the state record |
| x x | ct(5) ct(3) ct(40) ct(2) crt(2) crt(2) cger(2) | tt(5) T, U, A tt(3) T, NU, A tt(40) T, NU, A tt(2) T, NU, A tt(2) T, NU, A ort(2) F eger(2) | tt(5) T, U, A T tt(3) T, NU, T A tt(40) T, NU, T A tt(2) T, NU, T A tt(2) T, NU, T A ort(2) F F | tt(5) T, U, A T Five-digit FIPS county code tt(3) T, NU, T Three-digit FIPS county code tt(40) T, NU, T County code tt(2) T, NU, T USPS state abbreviation tt(2) T, NU, T FIPS state code ort(2) F F |

F.3.3.3 Census Tract Boundaries: syTract Feature Class

| Identification: | syTract |
|-----------------|----------------------------|
| Type: | ESRI Polygon Feature Class |

| Purpose: | | A system | A system boundaries feature class that plays a crucial role during the | | | | | | | |
|-----------------|-------------|-------------|---|-------------------|----------------------------------|--|--|--|--|--|
| | | aggregati | aggregation process. It belongs to syBoundary.mdb. Provides the definition of | | | | | | | |
| | | census tra | census tract boundaries and the census tract available for the region | | | | | | | |
| | | aggregati | aggregation process. | | | | | | | |
| Data: | | | | | | | | | | |
| Feature Class 1 | Field Defin | ition | | | | | | | | |
| Name | ESRI | Index* | Required* | Values | Description | | | | | |
| | Type | | | | | | | | | |
| | (Size) | | | | | | | | | |
| | Access | | | | | | | | | |
| | Type | | | | | | | | | |
| | (Size) | | | | | | | | | |
| Tract | Text(1 | T, U, A | Т | 11 digits of the | 11 digits of the census tract | | | | | |
| | 1) | | | census tract | number from the 2000 US | | | | | |
| | | | | number | Census | | | | | |
| CountyFips | Text(5 | T, NU, A | T | Five-digit FIPS | Five-digit FIPS county code. | | | | | |
| |) | | | county code | First two digits are the state | | | | | |
| | | | | | FIPS; the remaining three digits | | | | | |
| | | | | | are the county code. | | | | | |
| Tract6 | Text(4 | T, NU, A | Т | Census tract | Census tract six-digit number | | | | | |
| | 0) | | | six-digit | from the 2000 US Census | | | | | |
| | | | | number | | | | | | |
| TractArea | Float(4 | F | F | | Census tract area (in km²) | | | | | |
| |) | | | | | | | | | |
| | Single(| | | | | | | | | |
| | 4) | | | | | | | | | |
| CenLongit | Double | F | F | Longitude | Census tract longitude | | | | | |
| | (8) | | | decimal degrees | (centroid) | | | | | |
| | Double | | | | | | | | | |
| | (8) | | | | | | | | | |
| CenLat | Double | F | F | Latitude | Census tract latitude (centroid) | | | | | |
| | (8) | | | decimal degrees | | | | | | |
| | Double | | | | | | | | | |
| | (8) | | | | | | | | | |
| * T=True; F=F | False; U=Uı | nique; NU=N | Von-Unique; A= | =Ascending; D=Des | cending; UC=Uppercase; | | | | | |
| LC=Lowercase | e | | | | | | | | | |

F4. State Boundaries: Boundary.mdb

F.4.1 Database Overview

The bndrygbs.mdb is an Access personal geodatabase that contains boundary *feature classes and tables* with demographic (population, housing, age, etc.) and building inventory profiles aggregated at the census block and census track levels. The geographical domain of the database is the state. In that case, there is one bndrygbs.mdb database for each state, each one located in the appropriate state folder. County census tracts and census block boundaries are in separate feature classes.

Data stored in individual tables include the following:

- Square footage by occupancy. These data are the estimated floor area by specific occupancy (e.g., COM1).
- *Full replacement value by occupancy*. These data provide estimated replacement values by specific occupancy (e.g., RES1).
- Building count by occupancy. These data provide an estimated building count by specific occupancy (e.g., IND1).
- General occupancy mapping. These data provide general mapping for the general building stock (GBS) inventory data from the specific occupancy to general building type (e.g., wood).
- Demographics. These data provide housing and population statistics for the study region.

The content of tables showing the building stock characteristics (e.g., replacement cost, building type, occupancy type, etc.) is used to estimate damages and economic losses. Demographic and housing characteristic are essential for estimating social impacts, such as shelter needs, household displacement, and casualties.

During the creation of a study region, boundary geometry from feature classes is transferred to a geodatabase named RegionBndry.mdb in the Region folder for all hazards.

Demographic, building stock related data, and attributes from the feature classes as well as tables are transferred to the SQL Server database in the Region folder.

F.4.2 Identification

Boundary.mdb

F.4.3 Database Content

The Boundary.mdb database includes:

| Name | Туре | Content |
|-----------------------------|---------------|---|
| hzCounty | ESRI Polygon | US Census 2000 county boundaries |
| | Feature Class | |
| hzTract | ESRI Polygon | US Census 2000 census tract boundaries |
| | Feature Class | |
| hzCensusBlock | ESRI Polygon | US Census 2000 census block boundaries |
| | Feature Class | |
| hzDemographicsT | ESRI Table | Demographics by census tract |
| hzDemographicsB | ESRI Table | Demographics by census block |
| hzBldgCountOccupT | ESRI Table | Building count by occupancy by census tract |
| hzBldgCountOccupB | ESRI Table | Building count by occupancy by census tract |
| hzExposureOccupT | ESRI Table | Building (without content) full replacement value |
| | | by occupancy by census tract |
| hzExposureOccupB | ESRI Table | Building (without content) full replacement value |
| | | by occupancy by census block |
| hzExposureContentOccupT | ESRI Table | Building content replacement value by occupancy |
| | | by census tract |
| hzExposureContentOccupB | ESRI Table | Building content replacement value by occupancy |
| | | by census block |
| hzSqFootageOccupT | ESRI Table | Square footage by occupancy by census tract |
| hzSqFootageOccupB | ESRI Table | Square footage by occupancy by census block |
| hzMeansCountyLocationFactor | ESRI Table | Means location factors for residential and non- |
| | | residential occupancies on a county basis |

F.4.3.1 County Boundaries: hzCounty

| Identification: | | hzCounty | | | | | | | |
|-------------------|--------------|---|-----------------|-------------------|---------------------------------|--|--|--|--|
| Type: | | ESRI Polygon Feature Class | | | | | | | |
| Purpose: | | A state extent boundaries feature. It belongs to Boundary.mdb. Provides the | | | | | | | |
| | | definition of county boundaries geometry and attributes in one state. | | | | | | | |
| | | Boundary geometries are transferred to a geodatabase named | | | | | | | |
| | | RegionBndry.mdb in the Region folder during the process of creating a new | | | | | | | |
| | | study region. Attributes are also transferred to the SQL Server database in the | | | | | | | |
| | | Region folder during this process. Data are subsequently used for Hazus-MH | | | | | | | |
| | | estimation of | f hazards, dama | iges, and losses, | as well as mapping. | | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Definitio | n | | | | | | | |
| Name | ESRI | Index* | Required* | Values | Description | | | | |
| | Type | | | | | | | | |
| | (Size) | | | | | | | | |
| | Access | | | | | | | | |
| | Туре | | | | | | | | |
| | (Size) | | | | | | | | |
| CountyFips | Text(5) | T, U, A | T | Five-digit | Five-digit FIPS county code. | | | | |
| | | | | FIPS county | First two digits are the state | | | | |
| | | | | code | FIPS code; the remaining three | | | | |
| | | | | | digits are the county code. | | | | |
| CountyFips3 | Text(3) | T, NU, | T | Three-digit | Last three digits of the FIPS | | | | |
| | | A | | FIPS county | county code. | | | | |
| | | | | code | | | | | |
| CountyName | Text(40) | T, NU, | T | | County name | | | | |
| | | A | | | | | | | |
| State | Text(2) | T, NU, | T | USPS state | USPS state abbreviation | | | | |
| | | A | | abbreviation | | | | | |
| StateFips | Text(2) | T, NU, | T | FIPS state | FIPS state code | | | | |
| | | A | | code | | | | | |
| NumAggrTracts | Long(4) | F | F | | Number of tracts in the hztract | | | | |
| | Long | | | | feature. | | | | |
| | Integer(4) | | | | | | | | |
| | 1 | | <u>I</u> | 1 | | | | | |

| C=Lowercase | | | |
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F.4.3.2 Census Tract Boundaries: hzTract

| Identification: | | hzTract | | | | | | | |
|-----------------|------------------|---|---------------|------------------------|-----------------------------------|--|--|--|--|
| Type: | | ESRI Polyg | gon Feature | Class | | | | | |
| Purpose: | | A state extent boundaries feature. It belongs to Boundary.mdb. Provides the | | | | | | | |
| | | definition of census tract boundaries geometry and attributes in one state. | | | | | | | |
| | | Boundary geometries are transferred to a geodatabase named | | | | | | | |
| | | RegionBndry.mdb in the Region folder during the process of creating a new | | | | | | | |
| | | study region. Attributes (e.g., tract number, building scheme Id) are also | | | | | | | |
| | | transferred | to the SQL | Server database in the | ne Region folder during this | | | | |
| | | process. Da | ta are subse | equently used for Ha | zus-MH estimation of hazards, | | | | |
| | | damages, ar | nd losses, as | s well as mapping. | | | | | |
| Data: | | | | | | | | | |
| Feature Class F | Field Definition | n | | | | | | | |
| Name | ESRI Type | Index* | Require | Values | Description | | | | |
| | (Size) | | d* | | | | | | |
| | Access | | | | | | | | |
| | Type (Size) | | | | | | | | |
| Tract | Text(11) | T, U, A | T | 11 digits of the | 11 digits of the census tract | | | | |
| | | | | census tract | number of the US Census 2000 | | | | |
| | | | | number | | | | | |
| CountyFips | Text(5) | T, NU, | T | Five-digit FIPS | Five-digit FIPS county code. | | | | |
| | | A | | county code | First two digits are the state | | | | |
| | | | | | FIPS; the remaining three digits | | | | |
| | | | | | are the county code. | | | | |
| BldgSchemes | Text(5) | F | T | EQ specific | EQ specific building scheme | | | | |
| Id | | | | building scheme | according to the available values | | | | |
| | | | | according to the | in table hzGenBldgSchemes in | | | | |
| | | | | available values | MSH.mdb for the state. | | | | |
| | | | | in table | See Occupancy Mapping Scheme: | | | | |
| | | | | hzGenBldgSche | MSH.mdb. | | | | |
| | | | | mes in | | | | | |
| | | | | MSH.mdb for | | | | | |
| | | | | the state | | | | | |
| Tract6 | Text(40) | F | T | | Census tract six-digit number of | | | | |
| | | | | | the US Census 2000 | | | | |

| TractArea | Float(4) | F | N | | Census tract area (in km²) |
|-----------|-----------|---|---|------------------|-----------------------------------|
| | Single(4) | | | | |
| CenLat | Double(8) | F | N | Latitude Decimal | Census tract latitude (centroid) |
| | Double(8) | | | Degrees | |
| CenLongit | Double(8) | F | N | Longitude | Census tract longitude (centroid) |
| | Double(8) | | | Decimal Degrees | |
| Length | Float(4) | F | N | | Total length (in kms) of street |
| | Single(4) | | | | segment in the census tract. |
| | | | | | Length is used during the study |
| | | | | | region creation process to |
| | | | | | estimate distribution of pipeline |
| | | | | | length for potable water, |
| | | | | | wastewater, and natural gas. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.4.3.3 Census Block Boundaries: hzCensusBlock

| Identification: | | | hzCensusBlock | | | | | | |
|---------------------|----------|---|---------------|---------------|----------------------|--|--|--|--|
| Type: | | ESRI Polygon Feature Class | | | | | | | |
| Purpose: | | A state extent boundaries feature. It belongs to Boundary.mdb. Provides the | | | | | | | |
| | | definition of census block boundaries geometry and attributes in one state. | | | | | | | |
| | | Boundary geometries are transferred to a geodatabase named | | | | | | | |
| | | RegionBndry.mdb in the Region folder during the process of creating a new | | | | | | | |
| | | study region when the flood hazard is included. Attributes (e.g., tract number, | | | | | | | |
| | | building scheme Id) are also transferred to the SQL Server database in the | | | | | | | |
| | | Region folder during this process. Data are subsequently used for Hazus-MH | | | | | | | |
| | | est | imation o | of hazards, o | damages, and losses, | , as well as mapping. | | | |
| Data: | | | | | | | | | |
| Feature Class Field | Definiti | on | | | | | | | |
| Name | ESRI | | Index | Require | Values | Description | | | |
| | Type | | * | d* | | | | | |
| | (Size) | | | | | | | | |
| | Access | \$ | | | | | | | |
| | Type | | | | | | | | |
| | (Size) | | | | | | | | |
| CensusBlock | Text(1 | 5) | T, U, | | | 15 digits of the census block | | | |
| | | | A | | | number | | | |
| Tract | Text(1 | 1) | T, | Т | | 11 digits of the census tract | | | |
| | | | NU, A | | | number | | | |
| BldgSchemesId | Text(5 |) | F | T | | EQ specific building scheme | | | |
| | | | | | | accord to the available values in | | | |
| | | | | | | table hzGenBldgSchemes in | | | |
| | | | | | | MSH.mdb for the state. | | | |
| | | | | | | See Occupancy Mapping Scheme: MSH.mdb. | | | |
| BlockType | Text(1 |) | F | T | R=Riverine | Within the Hazus Flood Model, | | | |
| | | | | | C=Coastal | all census blocks have been | | | |
| | | | | | L=Lake | assigned a code identifying the | | | |
| | | | | | | primary local flood hazard type | | | |
| | | | | | | and a foundation mapping | | | |
| | | | | | | scheme. The default value for all | | | |
| | | | | | | census blocks is "R" (riverine). | | | |

| | | | | | Census blocks immediately |
|-----------------|---------------------|---------|---|------------------|------------------------------------|
| | | | | | adjacent to the Great Lakes are |
| | | | | | coded as "L" for Great Lakes. |
| | | | | | Census blocks within the FEMA |
| | | | | | Q3's for coastal regions are |
| | | | | | coded as "C" (coastal). |
| BlockArea | Float(4) Float(4) | F | F | | Census block area (in km²) |
| CenLat | Double(8 | F | F | Latitude Decimal | Census block latitude (centroid) |
| |) | | | Degrees | |
| | Double(8 | | | | |
| |) | | | | |
| CenLongit | Double(8 | F | F | Longitude | Census block longitude (centroid) |
| C | | | | Decimal Degrees | 5 () |
| | Double(8 | | | | |
| |) | | | | |
| PctWithBasemnt | Short(2) | F | F | | Percentage of residential units |
| | Integer(2) | | | | with basements (flood hazard |
| | | | | | specific field) |
| Pct1StoryRes1 | Short(2) | F | F | | Percentage of one-story single- |
| | Integer(2) | | | | family |
| | | | | | (flood hazard specific field) |
| Pct2StoryRes1 | Short(2) | F | F | | Percentage of two-story, single- |
| | Integer(2) | | | | family |
| | | | | | (flood hazard specific field) |
| Pct3StoryRes1 | Short(2) | F | F | | Percentage of three-story, single- |
| | Integer(2) | | | | family (flood hazard specific |
| | | | | | field) |
| PctSplitLvlRes1 | Short(2) | F | F | | Percentage of split level, single- |
| | Integer(2) | | | | family (flood hazard specific |
| | | | | | field) |
| Pct1to2StryRes3 | Short(2) | F | F | | Percentage of 1-2 story, multi- |
| | Integer(2) | | | | family |
| | | | | | (flood hazard specific field) |
| Pct3to4StryRes3 | i | | + | <u> </u> | D (C2 4) 1/: |
| reisi04silyKess | Short(2) | F | F | | Percentage of 3-4-story, multi- |
| reisio4strykess | Short(2) Integer(2) | F | F | | family |

| Pct5StryplusRes3 | Short(2) | F | F | Percentage of 5-story and up |
|------------------|------------|---|---|----------------------------------|
| | Integer(2) | | | multi-family (flood hazard |
| | | | | specific field) |
| PctLowRiseOther | Short(2) | F | F | Percentage of all other |
| | Integer(2) | | | occupancies, low-rise (flood |
| | | | | hazard specific field) |
| PctMidRiseOther | Short(2) | F | F | Percentage of all other |
| | Integer(2) | | | occupancies, mid-rise (flood |
| | | | | hazard specific field) |
| PctHighRiseOther | Short(2) | F | F | Percentage of all other |
| | Integer(2) | | | occupancies, high-rise (flood |
| | | | | hazard specific field) |
| Pct1CarGarage | Short(2) | F | F | Percentage of single-family with |
| | Integer(2) | | | 1-car garage (flood hazard |
| | | | | specific field) |
| Pct2CarGarage | Short(2) | F | F | Percentage of single-family with |
| | Integer(2) | | | 2-car garage (flood hazard |
| | | | | specific field) |
| Pct3CarGarage | Short(2) | F | F | Percentage of single-family with |
| | Integer(2) | | | 3-car garage (flood hazard |
| | | | | specific field) |
| PctCarPort | Short(2) | F | F | Percentage of single-family with |
| | Integer(2) | | | carport |
| | | | | (flood hazard specific field) |
| PctNoGarage | Short(2) | F | F | Percentage of single-family with |
| | Integer(2) | | | no garage (flood hazard specific |
| | | | | field) |
| IncomeRatio | Float(4) | F | F | Ratio of block group to state |
| | Single(4) | | | income |
| | | | | (flood hazard specific field) |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.4.3.4 Demographics by Census Tract: hzDemographicT

| Identification: | hzDemo | hzDemographicT | | | | | | | | |
|-------------------------|-------------------------|---|-----------------|------------------|-------------------------------|--|--|--|--|--|
| Type: | ESRI Ta | ESRI Table | | | | | | | | |
| Purpose: | This tab | This table provides housing and population statistics at the census tract level | | | | | | | | |
| | for the s | for the study region. It belongs to Boundary.mdb. Data are transferred to the | | | | | | | | |
| | SQL Se | rver databa | se in the Regio | on folder during | g the process of creating a | | | | | |
| | new stud | new study region. Data are subsequently used for Hazus-MH estimation of | | | | | | | | |
| | hazards, | damages, | and losses, as | well as mapping | g. | | | | | |
| Data: | | | | | | | | | | |
| Feature Class Field Def | finition | | | | | | | | | |
| Name | ESRI Type | Index* | Required* | Values | Description | | | | | |
| | (Size) | | | | | | | | | |
| | Access Type | | | | | | | | | |
| CensusTract | (Size) Text(11) | T, U, A | T | 11 digits of | 11 digits of the census tract | | | | | |
| Census Tract | 16x(11) | 1, 0, A | 1 | the census | number | | | | | |
| | | | | | number | | | | | |
| | | | | tract | | | | | | |
| | | | | number | | | | | | |
| Population | Long(4) | F | F | | Total population | | | | | |
| Торигаціон | Long Integer(4) Long(4) | F | F | | | | | | | |
| Households | Long Integer(4) | Г | Г | | Total households | | | | | |
| | Long(4) | F | F | | | | | | | |
| GroupQuarters | Long Integer(4) | | | | Total group quarters | | | | | |
| | Long(4) | F | F | | Total number of males | | | | | |
| MaleLess16 | Long Integer(4) | | | | under 16 years of age | | | | | |
| | Long(4) | F | F | | Total number of males aged | | | | | |
| Male16to65 | Long Integer(4) | | | | 16 to 65 | | | | | |
| | Long(4) | F | F | | Total number of males over | | | | | |
| MaleOver65 | Long Integer(4) | | | | age 65 | | | | | |
| | Long(4) | F | F | | Total number of females | | | | | |
| FemaleLess16 | Long Integer(4) | | | | under 16 years of age | | | | | |
| | Long(4) | F | F | | Total number of females | | | | | |
| Female16to65 | Long Integer(4) | | | | aged 16 to 65 | | | | | |
| | Long(4) | F | F | | Total number of females | | | | | |
| FemaleOver65 | Long Integer(4) | | | | over age 65 | | | | | |
| MalePopulation | Long(4) | F | F | | Total males | | | | | |

| | Long Integer(4) | | | |
|------------------|--------------------------|---|---|-----------------------------|
| F 1D 10 | Long(4) | F | F | Total females |
| FemalePopulation | Long Integer(4) | | | |
| White | Long(4) | F | F | Total white population |
| Wille | Long Integer(4) | _ | | |
| Black | Long(4) | F | F | Total black population |
| Black | Long Integer(4) | Г | F | Total Nation American |
| | Long(4) | F | F | Total Native American |
| NativeAmerican | Long Integer(4) | | | population |
| . : | Long(4) | F | F | Total Asian population |
| Asian | Long Integer(4) | | | |
| Himmin | Long(4) | F | F | Total Hispanic population |
| Hispanic | Long Integer(4) | | - | |
| | Long(4) | F | F | Total Pacific Islander |
| PacifiIslander | Long Integer(4) | | | population |
| | Long(4) | F | F | Total other race population |
| OtherRaceOnly | Long Integer(4) | | | |
| | Long(4) | F | F | Total households with less |
| IncLess10 | Long Integer(4) | | | than \$10,000 annual income |
| | Long(4) | F | F | Total households with |
| | Long Integer(4) | | | \$10,000 to \$20,000 annual |
| Inc10to20 | | | | income |
| | Long(4) | F | F | Total households with |
| | Long Integer(4) | | | \$20,000 to \$30,000 annual |
| Inc20to30 | | | | income |
| | Long(4) | F | F | Total households with |
| | Long Integer(4) | | | \$30,000 to \$40,000 annual |
| Inc30to40 | | | | income |
| | Long(4) | F | F | Total households with |
| | Long Integer(4) | | | \$40,000 to \$50,000 annual |
| Inc40to50 | | | | income |
| потополо | Long(4) | F | F | Total households with |
| | Long(4) Long Integer(4) | Г | Г | |
| | Long Integer(4) | | | \$50,000 to \$60,000 annual |
| Inc50to60 | | | | income |
| | Long(4) | F | F | Total households with |
| | Long Integer(4) | | | \$60,000 to \$75,000 annual |
| Inc60to75 | | | | income |
| Inc75to100 | Long(4) | F | F | Total households with |

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| | Long Integer(4) | | | |
|----------------------|--------------------------|--------|--------------|------------------------------------|
| | Long(4) | F | F | Vacant multi-family |
| VacantMultStructs | Long Integer(4) | | | structures |
| | Long(4) | F | F | Vacant manufactured |
| VacantMHs | Long Integer(4) | | | housing |
| | Short(2) | F | F | Housing units built before |
| BuiltBefore40 | Integer(2) | | | 1940 |
| | Short(2) | F | F | Housing units built between |
| Built40to49 | Integer(2) | | | 1940 and 1949 |
| | Short(2) | F | F | Housing units built between |
| Built50to59 | Integer(2) | | | 1950 and 1959 |
| | Short(2) | F | F | Housing units built between |
| Built60to69 | Integer(2) | | | 1960 and 1969 |
| | Short(2) | F | F | Housing units built between |
| Built70to79 | Integer(2) | | | 1970 and 1979 |
| | Short(2) | F | F | Housing units built between |
| Built80to89 | Integer(2) | | | 1980 and 1989 |
| | Short(2) | F | F | Housing units built between |
| Built90to98 | Integer(2) | | | 1990 and 1998 |
| | Short(2) | F | F | Housing units built after |
| BuiltAfter98 | Integer(2) | | | 1998 |
| | Short(2) | F | F | Median year housing built |
| MedianYearBuilt | Integer(2) | | | |
| AvgRent | Long(4) | F | F | Average cash rent |
| Trygrein | Long Integer(4) | F | F | |
| AvgValue | Long(4) Long Integer(4) | I. | I' | Average home value |
| SchoolEnrollmentKto | | F | F | School enrollment up to |
| 12 | Long Integer(4) | | | high school |
| SchoolEnrollmentCol | Long(4) | F | F | College and university |
| lege | Long Integer(4) | | | enrollment |
| * T=True: F=False: U | J=Unique: NU= | Non-Un | iaue: A=Asce | nding; D=Descending; UC=Uppercase; |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.4.3.5 Demographics by Census Block: hzDemographicB

| Identification: | hzDen | hzDemographicB | | | | | | | |
|---------------------|-----------------|---|---------------|-------------------|---------------------------------|--|--|--|--|
| Type: | ESRI | Гable | | | | | | | |
| Purpose: | This ta | This table provides housing and population statistics at census block level for | | | | | | | |
| | the stu | the study region. It belongs to Boundary.mdb. Data are transferred to the SQL | | | | | | | |
| | Server | database | in the Reg | ion folder during | the process of creating a new | | | | |
| | | | • | _ | led. Data are subsequently used | | | | |
| | _ | _ | | | ges, and losses, as well as | | | | |
| | | | cstillation (| or mazarus, uamag | ges, and iosses, as wen as | | | | |
| | mappii | ng. | | | | | | | |
| Data: | | | | | | | | | |
| Feature Class Field | Definition | | | | | | | | |
| Name | ESRI | Index | Require | Values | Description | | | | |
| | Type | * | d* | | | | | | |
| l | (Size) | | | | | | | | |
| | Access Type | | | | | | | | |
| | (Size) | | | | | | | | |
| CensusBlock | Text(15) | T, U, | T | 15 digits of | 15 digits of census block | | | | |
| | | A | | census block | number | | | | |
| | | | | number | | | | | |
| | Long(4) | F | F | | | | | | |
| D. L.C. | Long | | | | Total population | | | | |
| Population | Integer(4) | | | | | | | | |
| | Long(4) | F | F | | Total households | | | | |
| Households | Long Integer(4) | | | | Total households | | | | |
| | Long(4) | F | F | | | | | | |
| | Long | | 1 | | Total group quarters | | | | |
| GroupQuarters | Integer(4) | | | | | | | | |
| | Long(4) | F | F | | Total number of males under | | | | |
| Molel and 16 | Long | | | | 16 years of age | | | | |
| MaleLess16 | Integer(4) | | | | To yours of age | | | | |
| | Long(4) | F | F | | Total number of males aged 16 | | | | |
| Male16to65 | Long Integer(4) | | | | to 65 | | | | |
| | Long(4) | F | F | | T 4 1 1 C 1 | | | | |
| | Long (4) | • | | | Total number of males over | | | | |
| MaleOver65 | Integer(4) | | | | age 65 | | | | |
| | Long(4) | F | F | | Total number of females under | | | | |
| F1-1 . 16 | Long | | | | 16 years of age | | | | |
| FemaleLess16 | Integer(4) | | | | | | | | |
| Female16to65 | Long(4) | F | F | | Total number of females aged | | | | |

| Long Integer(4) | | | 16 to 65 |
|-----------------|--|------------|---------------------------------|
| Long(4) | F | F | Total number of females over |
| Integer(4) | | | age 65 |
| Long(4) | F | F | Total males |
| Long Integer(4) | | | Total males |
| Long(4) | F | F | T (1 C) |
| Long Integer(4) | | | Total females |
| Long(4) | F | F | |
| Long Integer(4) | | | Total white population |
| Long(4) | F | F | |
| Long | | | Total black population |
| Integer(4) | | | |
| Long(4) | F | F | Total Native American |
| Long | | | population |
| | E | E | |
| • , , | F | F | Total Asian population |
| Ü | | | Total Fisher population |
| | F | F | |
| | | | Total Hispanic population |
| Integer(4) | | | |
| Long(4) | F | F | Total Pacific Islander |
| Long | | | population |
| Integer(4) | | | population |
| Long(4) | F | F | m . t . d |
| Long | | | Total other race population |
| | | | |
| | F | F | Total households with less than |
| | | | \$10,000 annual income |
| Long(4) | F | F | Total households with \$10,000 |
| Long | | | to \$20,000 annual income |
| Integer(4) | | | to \$20,000 amidai meome |
| Long(4) | F | F | Total households with \$20,000 |
| Long Integer(4) | | | to \$30,000 annual income |
| | F | F | T-4-111 11 34 \$20 000 |
| LUME(T) | 1 * | * | Total households with \$30,000 |
| | | | · |
| Long Integer(4) | | | to \$40,000 annual income |
| | Integer(4) Long(4) Long Integer(4) Lon | Integer(4) | Integer(4) |

| | Long Integer(4) | | | to \$50,000 annual income |
|------------------|---------------------------|---|---|---|
| Inc50to60 | Long(4) | F | F | Total households with \$50,000 to \$60,000 annual income |
| 1110501000 | Long(4) | F | F | Total households with \$60,000 |
| Inc60to75 | Long Integer(4) | | | to \$75,000 annual income |
| Inc75to100 | Long(4) Long Integer(4) | F | F | Total households with \$75,000 to \$100,000 annual income |
| IncOver100 | Long(4) Long Integer(4) | F | F | Total households with more than \$100,000 annual income |
| ResidDay | Long(4) Long Integer(4) | F | F | Total daytime population |
| ResidNight | Long(4) Long Integer(4) | F | F | Total nighttime population |
| Hotel | Long(4) Long Integer(4) | F | F | Total population in hotels |
| Visitor | Long(4) Long Integer(4) | F | F | Visitor population |
| WorkingCom | Long(4) Long Integer(4) | F | F | Population working in commercial occupations |
| WorkingInd | Long(4) Long Integer(4) | F | F | Population working in industrial occupations |
| Commuting5PM | Long(4) Long Integer(4) | F | F | Population commuting at 5:00 p.m. |
| OwnerSingleUnits | Long(4) Long Integer(4) | F | F | Owner-occupied, single-family units |
| OwnerMultUnits | Long(4) Long Integer(4) | F | F | Owner-occupied, multi-family units |
| OwnerMultStructs | Long(4) Long Integer(4) | F | F | Owner-occupied, multi-family structures |
| OnwerMHs | Long(4) | F | F | Owner-occupied, manufactured housing |

| | Integer(4) | | | |
|-----------------------|---------------------------|----|----|--|
| | Long(4) | F | F | Renter-occupied, single-family |
| D 4 C : 1 - I I : 4 - | Long | | | units |
| RenterSingleUnits | Integer(4) | | | diffe |
| | Long(4) | F | F | Renter-occupied, multi-family |
| RenterMultUnits | Long | | | units |
| Renterivitationits | Integer(4) | | E | |
| | Long(4) | F | F | Renter-occupied, multi-family |
| RenterMultStructs | Long Integer(4) | | | structures |
| | Long(4) | F | F | |
| | Long (4) | 1 | T | Renter-occupied, manufactured |
| RenterMHs | Integer(4) | | | housing |
| | Long(4) | F | F | |
| | Long | | | Vacant single-family units |
| VacantSingleUnits | Integer(4) | | | |
| | Long(4) | F | F | |
| | Long | | | Vacant multi-family units |
| VacantMultUnits | acantMultUnits Integer(4) | | | |
| | Long(4) | F | F | |
| VacantMultStructs | Long | | | Vacant multi-family structures |
| vacantiviuitStructs | Integer(4) | | | |
| | Long(4) | F | F | Vacant manufactured housing |
| VacantMHs | Long | | | vacant manufactured nousing |
| | Integer(4) Short(2) | F | F | Housing units built before |
| D 14D C 40 | ` ' | I. | I. | |
| BuiltBefore40 | Integer(2) | | | 1940 |
| | Short(2) | F | F | Housing units built between |
| Built40to49 | Integer(2) | | | 1940 and 1949 |
| | Short(2) | F | F | Housing units built between |
| Built50to59 | Integer(2) | | | 1950 and 1959 |
| | Short(2) | F | F | Housing units built between |
| D:14604-60 | Integer(2) | 1 | | , and the second |
| Built60to69 | | | | 1960 and 1969 |
| | Short(2) | F | F | Housing units built between |
| Built70to79 | Integer(2) | | | 1970 and 1979 |
| | Short(2) | F | F | Housing units built between |
| Built80to89 | Integer(2) | | | 1980 and 1989 |
| | Short(2) | F | F | Housing units built between |
| Built90to98 | Integer(2) | | | 1990 and 1998 |
| Du11(70(070 | | Г | E | 1770 and 1770 |
| BuiltAfter98 | Short(2) | F | F | Housing units built after 1998 |
| Dull(Alter 70 | Integer(2) | | | |

| MedianYearBuilt | Short(2) Integer(2) | F | F | Median year housing built |
|-----------------------------|--------------------------|---|---|-------------------------------------|
| AvgRent | Long(4) Long Integer(4) | F | F | Average cash rent |
| AvgValue | Long(4) Long Integer(4) | F | F | Average home value |
| SchoolEnrollmentKto1 | Long(4) Long Integer(4) | F | F | School enrollment up to high school |
| SchoolEnrollmentColle ge | Long(4) Long Integer(4) | F | F | College and university enrollment |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.4.3.6 Building Count by Census Tract: hzBldgCountOccupT

| Identification | on: | hzBldgCountOccupT | | | | | | | | |
|----------------|----------------------|---|---|---------------------|-------------------------------|--|--|--|--|--|
| Type: | | ESRI Table | | | | | | | | |
| Purpose: | | This table provides building count by occupancy at the census tract level for | | | | | | | | |
| | | the stu | the study region. It belongs to Boundary.mdb. Data are transferred to the SQL | | | | | | | |
| | | Server database in the Region folder during the process of creating a new | | | | | | | | |
| | | study region. Data are subsequently used for Hazus-MH estimation of | | | | | | | | |
| | | hazard | s, damages, | , and losses, as we | ll as mapping. | | | | | |
| Data: | | | | | | | | | | |
| Feature Cla | ss Field Definiti | ion | | | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | | | |
| | (Size) | * | d* | | | | | | | |
| | Access Type (Size) | | | | | | | | | |
| CensusTra | Text(11) | T, U, | T | | 11 digits of the census tract | | | | | |
| ct | | A | | | number | | | | | |
| RES1I | Short(2) | F | F | | Single family dwellings | | | | | |
| KESII | Integer(2) | | | | | | | | | |
| RES2I | Short(2) | F | F | | Manufactured housing | | | | | |
| RE521 | Integer(2) | | | | | | | | | |
| RES3AI | Short(2) | F | F | | Duplex - 1 to 2 units | | | | | |
| | Integer(2) | | | | | | | | | |
| RES3BI | Short(2) | F | F | | Duplex - 3 to 4 units | | | | | |
| | Integer(2) | F | F | | Deviles 540 Ossits | | | | | |
| RES3CI | Short(2) Integer(2) | r | F | | Duplex - 5 to 9 units | | | | | |
| | Short(2) | F | F | | Duplex - 10 to 19 units | | | | | |
| RES3DI | Integer(2) | | | | Dapter 10 to 19 dints | | | | | |
| DEC2EI | Short(2) | F | F | | Duplex - 20 to 49 units | | | | | |
| RES3EI | Integer(2) | | | | | | | | | |
| RES3FI | Short(2) | F | F | | Duplex - more than 50 units | | | | | |
| 11110011 | Integer(2) | | | | | | | | | |
| RES4I | Short(2) | F | F | | Temporary lodging | | | | | |
| | Integer(2) | | | | | | | | | |
| RES5I | Short(2) | F | F | | Institutional dormitories | | | | | |
| | Integer(2) | Г | Г | | N . 1 | | | | | |
| RES6I | Short(2) Integer(2) | F | F | | Nursing homes | | | | | |
| COM1I | Short(2) Integer(2) | F | F | | Retail trade | | | | | |

| COM2I | Short(2) | F | F | Wholesale trade |
|--------|----------------------|---|---|-------------------------------------|
| | Integer(2) | | | |
| COM3I | Short(2) Integer(2) | F | F | Personal and repairs services |
| COM4I | Short(2) | F | F | Professional and technical |
| | Integer(2) | | | services |
| COM5I | Short(2) | F | F | Banks |
| | Integer(2) | | | |
| COM6I | Short(2) Integer(2) | F | F | Hospitals |
| | Short(2) | F | F | Medical office and clinic |
| COM7I | Integer(2) | Г | F | Medical office and chinic |
| COM8I | Short(2) | F | F | Entertainment and recreation |
| | Integer(2) | | | |
| COM9I | Short(2) | F | F | Theaters |
| | Integer(2) | | | |
| COM10I | Short(2) | F | F | Parking garages |
| | Integer(2) | | | |
| IND1I | Short(2) | F | F | Heavy industrial |
| | Integer(2) | | | |
| IND2I | Short(2) | F | F | Light industrial |
| | Integer(2) | | | |
| IND3I | Short(2) | F | F | Food/drugs/chemicals |
| | Integer(2) | | | |
| IND4I | Short(2) | F | F | Metal/minerals processing |
| | Integer(2) | | | |
| IND5I | Short(2) | F | F | High technology |
| | Integer(2) | | | |
| IND6I | Short(2) | F | F | Construction facilities and offices |
| | Integer(2) | | | |
| AGR1I | Short(2) | F | F | Agriculture facilities and offices |
| | Integer(2) | | | |
| REL1I | Short(2) | F | F | Churches and non-profit |
| | Integer(2) | | | organizations |
| GOV1I | Short(2) | F | F | Government - general services |
| | Integer(2) | | | |
| GOV2I | Short(2) | F | F | Government - emergency |
| | Integer(2) | | | response |
| EDU1I | Short(2) | F | F | Grade schools and administrative |
| | Integer(2) | | | offices |
| EDU2I | Short(2) | F | F | Colleges and universities |
| | Integer(2) | | | |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.4.3.7 Building Count by Census Block: hzBldgCountOccupB

| Identification | on: | hzBldgCountOccupB | | | | | | |
|----------------|-----------------------------|-------------------|--|---------------------------|-------------------------------------|--|--|--|
| Type: | | ESRI | Γable | | | | | |
| Purpose: | | This ta | ble provide | s building count by occup | pancy at census block level for the | | | |
| | | study r | egion. It be | longs to Boundary.mdb. | Data are transferred to the SQL | | | |
| | | Server | database in | the Region folder during | g the process of creating a new | | | |
| | | study r | study region when the flood hazard is included. Data are subsequently used | | | | | |
| | | _ | _ | | ges, and losses, as well as | | | |
| | | mappin | | , | , | | | |
| Data: | | TI | | | | | | |
| | ss Field Definiti | on | | | | | | |
| Name | ESRI Type | Index | Daguira | Values | Description | | | |
| Name | • • | * | Require | values | Description | | | |
| | (Size) | Ψ. | d* | | | | | |
| CensusBlo | Access Type (Size) Text(15) | T, U, | Т | 15 digits of the census | 15 digits of the census block | | | |
| ck | TOXI(15) | A | | block number | number | | | |
| CK | C1(2) | F | F | block number | | | | |
| RES1I | Short(2) Integer(2) | r | F | | Single-family dwellings | | | |
| | Short(2) | F | F | | Manufactured housing | | | |
| RES2I | Integer(2) | - | | | Translated founding | | | |
| RES3AI | Short(2) | F | F | | Duplex - 1 to 2 units | | | |
| KESSAI | Integer(2) | | | | | | | |
| RES3BI | Short(2) | F | F | | Duplex - 3 to 4 units | | | |
| | Integer(2) | | | | | | | |
| RES3CI | Short(2) | F | F | | Duplex - 5 to 9 units | | | |
| | Integer(2) | | | | | | | |
| RES3DI | Short(2) | F | F | | Duplex - 10 to 19 units | | | |
| | Integer(2) | F | F | | Dunlan 20 to 40 mits | | | |
| RES3EI | Short(2) Integer(2) | Г | Г | | Duplex - 20 to 49 units | | | |
| | Short(2) | F | F | | Duplex - more than 50 units | | | |
| RES3FI | Integer(2) | | | | | | | |
| DECAI | Short(2) | F | F | | Temporary lodging | | | |
| RES4I | Integer(2) | | | | _ | | | |
| RES5I | Short(2) | F | F | | Institutional dormitories | | | |
| | Integer(2) | <u> </u> | | | | | | |
| RES6I | Short(2) | F | F | | Nursing homes | | | |
| | Integer(2) | | | | | | | |
| COM1I | Short(2) | F | F | | Retail trade | | | |

| | Integer(2) | | | |
|---------|------------|---|-----|---------------------------------------|
| COM2I | Short(2) | F | F | Wholesale trade |
| COMIZI | Integer(2) | | | |
| COM3I | Short(2) | F | F | Personal and repair services |
| COMSI | Integer(2) | | | |
| COMM | Short(2) | F | F | Professional and technical |
| COM4I | Integer(2) | | | services |
| COM5I | Short(2) | F | F | Banks |
| COMSI | Integer(2) | | | |
| COM6I | Short(2) | F | F | Hospitals |
| COMO | Integer(2) | | | |
| COM7I | Short(2) | F | F | Medical office and clinic |
| COMIT | Integer(2) | | | |
| COM8I | Short(2) | F | F | Entertainment and recreation |
| COMO | Integer(2) | | | |
| COM9I | Short(2) | F | F | Theaters |
| COMM | Integer(2) | | | |
| COM10I | Short(2) | F | F | Parking garages |
| COMITOI | Integer(2) | | | |
| IND1I | Short(2) | F | F | Heavy industrial |
| 111211 | Integer(2) | | | |
| IND2I | Short(2) | F | F | Light industrial |
| | Integer(2) | | | |
| IND3I | Short(2) | F | F | Food/drugs/chemicals |
| | Integer(2) | | | |
| IND4I | Short(2) | F | F | Metal/minerals processing |
| · | Integer(2) | | | |
| IND5I | Short(2) | F | F | High technology |
| | Integer(2) | | | |
| IND6I | Short(2) | F | F | Construction facilities and offices |
| | Integer(2) | | | |
| AGR1I | Short(2) | F | F | Agriculture facilities and offices |
| | Integer(2) | | | |
| REL1I | Short(2) | F | F | Churches and non-profit |
| TCDE11 | Integer(2) | | | organizations |
| GOV1I | Short(2) | F | F | Government - general services |
| 50 , 11 | Integer(2) | | | |
| COVAL | Short(2) | F | F | Government - emergency |
| GOV2I | Integer(2) | | | response |
| 00 121 | 1eger (2) | | l l | · · · · · · · · · · · · · · · · · · · |
| EDU1I | Short(2) | F | F | Grade schools and administrative |

| EDU2I | Short(2) | F | F | | Colleges and universities | | |
|--|------------|---|---|--|---------------------------|--|--|
| LD C21 | Integer(2) | | | | | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowercase | | | | | | | |

F.4.3.8 Building Replacement Value by Census Tract: hzExposureOccupT

| Identification | on: | hzExpo | hzExposureOccupT | | | | | | |
|----------------|--------------------------|---------|------------------|------------------------------|--|--|--|--|--|
| Type: | | ESRI 7 | ESRI Table | | | | | | |
| Purpose: | | This ta | ble provide | s building (without conte | nt) full replacement value by | | | | |
| | | occupa | ncy at the | census tract level for the s | study region. It belongs to | | | | |
| | | Bound | ary.mdb. D | ata are transferred to the | SQL Server database in the Region | | | | |
| | | | - | process of creating a new | | | | | |
| | | | | - | on of hazards, damages, and losses, | | | | |
| | | | as mappin | | or nazaras, damages, and resses, | | | | |
| Data | | as wen | as mappin | <u>ڄ</u> . | | | | | |
| Data: | E. 11D C | | | | | | | | |
| | ss Field Definit | • | 1 | 1 | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | | |
| | (Size) | * | d* | | | | | | |
| | Access Type | | | | | | | | |
| CensusTra | (Size) Text(11) | T, U, | F | 11 digits of the census | 11 digits of the census tract | | | | |
| ct | Text(11) | A A | | tract number | number | | | | |
| Ci | I (4) | | Г | tract number | | | | | |
| RES1I | Long(4) | F | F | | Single-family dwellings | | | | |
| | Long Integer(4) Long(4) | F | F | | Manufactured housing | | | | |
| RES2I | Long Integer(4) | I. | | | Wandractured flousing | | | | |
| D = 00 1 1 | Long(4) | F | F | | Duplex - 1 to 2 units | | | | |
| RES3AI | Long Integer(4) | | | | 1 | | | | |
| RES3BI | Long(4) | F | F | | Duplex - 3 to 4 units | | | | |
| KESSBI | Long Integer(4) | | | | | | | | |
| RES3CI | Long(4) | F | F | | Duplex - 5 to 9 units | | | | |
| RESSET | Long Integer(4) | | | | | | | | |
| RES3DI | Long(4) | F | F | | Duplex - 10 to 19 units | | | | |
| | Long Integer(4) | | | | | | | | |
| RES3EI | Long(4) | F | F | | Duplex - 20 to 49 units | | | | |
| | Long Integer(4) | | | | D 1 (1 50) | | | | |
| RES3FI | Long(4) | F | F | | Duplex - more than 50 units | | | | |
| _ | Long Integer(4) | F | F | | Temporary lodging | | | | |
| RES4I | Long(4) Long Integer(4) | Г | Г | | 1 comporary roughly | | | | |
| | Long Integer(4) Long(4) | F | F | | Institutional dormitories | | | | |
| RES5I | Long Integer(4) | | 1 | | The state of the s | | | | |
| DECCI | Long(4) | F | F | | Nursing homes | | | | |
| RES6I | Long Integer(4) | | | | | | | | |
| | 1 5 5 7 | I | 1 | I | 1 | | | | |

| Long Integer(4) Long(4) Long Integer(4) Long Integer(4) Long(4) Long Integer(4) Long Integer(4) Long Integer(4) | F F | F F | Wholesale trade Personal and repair services |
|---|---|--|--|
| Long(4) Long Integer(4) Long(4) Long Integer(4) | | | Personal and repair services |
| Long(4) Long Integer(4) | F | F | |
| Long Integer(4) | F | F | |
| Long(4) | 1 | | Professional and technical services |
| | F | F | Banks |
| Long(4) Long Integer(4) | F | F | Hospitals |
| Long(4) Long Integer(4) | F | F | Medical office and clinic |
| Long(4) Long Integer(4) | F | F | Entertainment and recreation |
| Long(4) | F | F | Theaters |
| Long(4) | F | F | Parking garages |
| Long(4) | F | F | Heavy industrial |
| Long(4) | F | F | Light industrial |
| Long(4) | F | F | Food/drugs/chemicals |
| Long(4) | F | F | Metal/minerals processing |
| Long(4) | F | F | High technology |
| Long(4) | F | F | Construction facilities and offices |
| Long(4) | F | F | Agriculture facilities and offices |
| Long(4) Long Integer(4) | F | F | Churches and non-profit organizations |
| Long(4) | F | F | Government - general services |
| Long Integer(4) Long(4) Long Integer(4) | F | F | Government - emergency response |
| Long(4) | F | F | Grade schools and administrative offices |
| | Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (5) Long (1) Long Integer(4) | Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long Integer(4) Long Integer(4) Long Integer(4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long (4) Long Integer(4) Long Integer(4) | Long Integer(4) F F Long (4) F F Long Integer(4) F <t< td=""></t<> |

| EDU2I | Long(4) | F | F | | Colleges and universities | | |
|--|-----------------|---|---|--|---------------------------|--|--|
| 25021 | Long Integer(4) | | | | | | |
| * T=True, F=False, U=Unique, NU=Non-Unique, A=Ascending, D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowercase | | | | | | | |

F.4.3.9 Building Replacement Value by Census Block: hzExposureOccupB

| Identification | on: | hzExposureOccupB | | | | | |
|----------------|-------------------------|------------------|--------------|----------------------------|-----------------------------------|--|--|
| Type: | | ESRI T | Table | | | | |
| Purpose: | | This ta | ble provide | s building (without conte | nt) full replacement value by | | |
| | | occupa | ncy at the o | census block level for the | study region. It belongs to | | |
| | | Bounda | ary.mdb. D | ata are transferred to the | SQL Server database in the Region | | |
| | | folder | during the p | process of creating a new | study region when the flood | | |
| | | | | _ | ised for Hazus-MH estimation of | | |
| | | hazards | s, damages, | and losses, as well as ma | apping. | | |
| Data: | | | | <u> </u> | 11 0 | | |
| | ss Field Definiti | ion | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | |
| rvaine | (Size) | * | d* | varues | Description | | |
| | Access Type (Size) | | a. | | | | |
| CensusBlo | Text(15) | T, U, | T | 15 digits of the census | 15 digits of the census block | | |
| ck | | A | | block number | number | | |
| | Long(4) | F | F | | Single-family dwellings | | |
| RES1I | Long Integer(4) | | | | Single raining awenings | | |
| RES2I | Long(4) | F | F | | Manufactured housing | | |
| KE521 | Long Integer(4) | | | | | | |
| RES3AI | Long(4) | F | F | | Duplex - 1 to 2 units | | |
| | Long Integer(4) | | | | | | |
| RES3BI | Long(4) | F | F | | Duplex - 3 to 4 units | | |
| | Long Integer(4) | Г | Г | | D 1 5 0 4 | | |
| RES3CI | Long(4) | F | F | | Duplex - 5 to 9 units | | |
| | Long Integer(4) Long(4) | F | F | | Duplex - 10 to 19 units | | |
| RES3DI | Long Integer(4) | | | | Bupter 10 to 17 times | | |
| DECOEL | Long(4) | F | F | | Duplex - 20 to 49 units | | |
| RES3EI | Long Integer(4) | | | | | | |
| RES3FI | Long(4) | F | F | | Duplex - more than 50 units | | |
| TEESSTT | Long Integer(4) | | | | | | |
| RES4I | Long(4) | F | F | | Temporary lodging | | |
| | Long Integer(4) | Г | Б | | T W C 11 C | | |
| RES5I | Long(4) | F | F | | Institutional dormitories | | |
| | Long Integer(4) Long(4) | F | F | | Nursing homes | | |
| RES6I | Long Integer(4) | 1 | 1 | | Truising nomes | | |
| COM1I | Long(4) | F | F | | Retail trade | | |
| | 5, , | | | | | | |

| | Long Integer(4) | | | |
|----------|-----------------|---|---|-------------------------------------|
| COM2I | Long(4) | F | F | Wholesale trade |
| COMIZI | Long Integer(4) | | | |
| COM3I | Long(4) | F | F | Personal and repair services |
| COMISI | Long Integer(4) | | | |
| COMAL | Long(4) | F | F | Professional and technical |
| COM4I | Long Integer(4) | | | services |
| COM5I | Long(4) | F | F | Banks |
| COMSI | Long Integer(4) | | | |
| COM6I | Long(4) | F | F | Hospitals |
| COMO | Long Integer(4) | | | |
| COM7I | Long(4) | F | F | Medical office and clinic |
| COMIT | Long Integer(4) | | | |
| COM8I | Long(4) | F | F | Entertainment and recreation |
| COMO | Long Integer(4) | | | |
| COM9I | Long(4) | F | F | Theaters |
| 0011171 | Long Integer(4) | | | |
| COM10I | Long(4) | F | F | Parking garages |
| 00111101 | Long Integer(4) | | | |
| IND1I | Long(4) | F | F | Heavy industrial |
| | Long Integer(4) | | | |
| IND2I | Long(4) | F | F | Light industrial |
| | Long Integer(4) | | | |
| IND3I | Long(4) | F | F | Food/drugs/chemicals |
| | Long Integer(4) | | | |
| IND4I | Long(4) | F | F | Metal/minerals processing |
| · | Long Integer(4) | | | |
| IND5I | Long(4) | F | F | High technology |
| | Long Integer(4) | | | |
| IND6I | Long(4) | F | F | Construction facilities and offices |
| | Long Integer(4) | | | |
| AGR1I | Long(4) | F | F | Agriculture facilities and offices |
| | Long Integer(4) | | | |
| REL1I | Long(4) | F | F | Churches and non-profit |
| TELLIT | Long Integer(4) | | | organizations |
| GOV1I | Long(4) | F | F | Government - general services |
| 30 111 | Long Integer(4) | | | |
| COMM | Long(4) | F | F | Government - emergency |
| GOV2I | Long Integer(4) | | | response |
| EDIII. | Long(4) | F | F | Grade schools and administrative |
| EDU1I | Long Integer(4) | | | offices |
| | | | | |

| EDU2I | Long(4) | F | F | | Colleges and universities | | |
|--|-----------------|---|---|--|---------------------------|--|--|
| EB CZI | Long Integer(4) | | | | | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowerc | LC=Lowercase | | | | | | |

F.4.3.10 Content Replacement Value by Census Tract: hzExposureContentOccupT

| Identifica | tion: | hzExposureContentOccupT | | | | | | |
|------------|--------------------------|-------------------------|--|-----------------------------|-------------------------------------|--|--|--|
| Type: | | ESRI | ESRI Table | | | | | |
| Purpose: | | This ta | This table provides building content replacement value by occupancy at the | | | | | |
| | | census | tract level | for the study region. It be | elongs to Boundary.mdb. Data are | | | |
| | | transfe | rred to the | SQL Server database in the | he Region folder during the process | | | |
| | | of crea | ting a new | study region. Data are sul | bsequently used for Hazus-MH | | | |
| | | estimat | tion of haza | ards, damages, and losses, | , as well as mapping. | | | |
| Data: | | | | | | | | |
| Feature C | Class Field Defin | ition | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| CensusT | Text(11) | T, U, | T | 11 digits of the census | 11 digits of the census tract | | | |
| ract | | A | | tract number | number | | | |
| RES1I | Long(4) | F | F | | Single-family dwellings | | | |
| KLSII | Long Integer(4) | | | | | | | |
| RES2I | Long(4) | F | F | | Manufactured housing | | | |
| - | Long Integer(4) | | | | | | | |
| RES3AI | Long(4) Long Integer(4) | F | F | | Duplex - 1 to 2 units | | | |
| RES3BI | Long(4) Long Integer(4) | F | F | | Duplex - 3 to 4 units | | | |
| RES3CI | Long(4) Long Integer(4) | F | F | | Duplex - 5 to 9 units | | | |
| RES3DI | Long(4) Long Integer(4) | F | F | | Duplex - 10 to 19 units | | | |
| RES3EI | Long(4) Long Integer(4) | F | F | | Duplex - 20 to 49 units | | | |
| RES3FI | Long(4) Long Integer(4) | F | F | | Duplex - more than 50 units | | | |
| RES4I | Long(4) Long Integer(4) | F | F | | Temporary lodging | | | |
| RES5I | Long(4) Long Integer(4) | F | F | | Institutional dormitories | | | |
| RES6I | Long(4) | F | F | | Nursing homes | | | |

| | Long Integer(4) | | | |
|---------|--------------------------|---|---|-------------------------------------|
| COM1I | Long(4) | F | F | Retail trade |
| COMIT | Long Integer(4) | | | |
| COM (2) | Long(4) | F | F | Wholesale trade |
| COM2I | Long Integer(4) | | | |
| GO1 (2) | Long(4) | F | F | Personal and repair services |
| COM3I | Long Integer(4) | | | • |
| | Long(4) | F | F | Professional and technical |
| COM4I | Long Integer(4) | | | services |
| | | | | |
| COM5I | Long(4) | F | F | Banks |
| | Long Integer(4) | | | |
| COM6I | Long(4) | F | F | Hospitals |
| | Long Integer(4) | | | |
| COM7I | Long(4) | F | F | Medical office and clinic |
| | Long Integer(4) | | | |
| COM8I | Long(4) | F | F | Entertainment and recreation |
| | Long Integer(4) | | | |
| COM9I | Long(4) | F | F | Theaters |
| | Long Integer(4) | | | |
| COM10 | Long(4) | F | F | Parking garages |
| I | Long Integer(4) | | | |
| IND1I | Long(4) | F | F | Heavy industrial |
| IND1I | Long Integer(4) | | | |
| INIDAL | Long(4) | F | F | Light industrial |
| IND2I | Long Integer(4) | | | |
| INID2I | Long(4) | F | F | Food/drugs/chemicals |
| IND3I | Long Integer(4) | | | |
| DID 4I | Long(4) | F | F | Metal/minerals processing |
| IND4I | Long Integer(4) | | | |
| DID 51 | Long(4) | F | F | High technology |
| IND5I | Long Integer(4) | | | |
| DID (I | Long(4) | F | F | Construction facilities and offices |
| IND6I | Long Integer(4) | | | |
| | Long(4) | F | F | Agriculture facilities and offices |
| AGR1I | Long Integer(4) | | | |
| | Long(4) | F | F | Churches and non-profit |
| REL1I | Long Integer(4) | | | organizations |
| | | | | |
| GOV1I | Long(4) | F | F | Government - general services |
| JUVII | Long Integer(4) | | | |
| | | | F | I Carramana and ann an an ar |
| GOV2I | Long(4) | F | Γ | Government - emergency |
| GOV2I | Long(4) Long Integer(4) | F | r | response |

| | Long Integer(4) | | | | offices | | |
|--|-----------------|---|---|--|---------------------------|--|--|
| EDU2I | Long(4) | F | F | | Colleges and universities | | |
| | Long Integer(4) | | | | | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowercase | | | | | | | |

F.4.3.11 Content Replacement Value by Census Block: hzExposureContentOccupB

| Identification | on: | hzExposureContentOccupB | | | | | | |
|----------------|--------------------------|-------------------------|-------------|----------------------------|-------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | This tal | ble provide | s building content replace | ement value by occupancy at the | | | |
| | | census | block level | for the study region. It b | elongs to Boundary.mdb. Data are | | | |
| | | transfer | rred to the | SQL Server database in the | ne Region folder during the process | | | |
| | | of creat | ting a new | study region when the flo | ood hazard is included. Data are | | | |
| | | subsequ | uently used | for Hazus-MH estimatio | n of hazards, damages, and losses, | | | |
| | | as well | as mapping | g. | | | | |
| Data: | | | | | | | | |
| Feature Cla | ss Field Definiti | on | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| 1 (41110 | (Size) | * | d* | , wiwes | | | | |
| | Access Type (Size) | | u | | | | | |
| CensusBlo | Text(15) | T, U, | T | 15 digits of the census | 15 digits of the census block | | | |
| ck | | A | | block number | number | | | |
| DECIL | Long(4) | F | F | | Single-family dwellings | | | |
| RES1I | Long Integer(4) | | | | | | | |
| RES2I | Long(4) | F | F | | Manufactured housing | | | |
| RE521 | Long Integer(4) | | | | | | | |
| RES3AI | Long(4) | F | F | | Duplex - 1 to 2 units | | | |
| | Long Integer(4) | _ | _ | | | | | |
| RES3BI | Long(4) | F | F | | Duplex - 3 to 4 units | | | |
| | Long Integer(4) Long(4) | F | F | | Duplex - 5 to 9 units | | | |
| RES3CI | Long Integer(4) | I' | T | | Duplex - 5 to 9 units | | | |
| DECADI | Long(4) | F | F | | Duplex - 10 to 19 units | | | |
| RES3DI | Long Integer(4) | | | | | | | |
| RES3EI | Long(4) | F | F | | Duplex - 20 to 49 units | | | |
| KESSEI | Long Integer(4) | | | | | | | |
| RES3FI | Long(4) | F | F | | Duplex - more than 50 units | | | |
| | Long Integer(4) | | | | | | | |
| RES4I | Long(4) | F | F | | Temporary lodging | | | |
| | Long Integer(4) | F | F | | Institutional domestaries | | | |
| RES5I | Long(4) Long Integer(4) | r | r | | Institutional dormitories | | | |
| | Long Integer(4) Long(4) | F | F | | Nursing homes | | | |
| RES6I | Long Integer(4) | 1 | 1 | | Traising nomes | | | |
| | | | | L | | | | |

| COM1I | Long(4) Long Integer(4) | F | F | Retail trade |
|---------|--------------------------|---|---|-------------------------------------|
| COM2I | Long(4) | F | F | Wholesale trade |
| | Long Integer(4) | | | |
| COM3I | Long(4) | F | F | Personal and repair services |
| | Long Integer(4) | | | |
| COM4I | Long(4) | F | F | Professional and technical |
| | Long Integer(4) | | | services |
| COM5I | Long(4) | F | F | Banks |
| 0011131 | Long Integer(4) | | | |
| COM6I | Long(4) | F | F | Hospitals |
| 0011101 | Long Integer(4) | | | |
| COM7I | Long(4) | F | F | Medical office and clinic |
| COMIT | Long Integer(4) | | | |
| COM8I | Long(4) | F | F | Entertainment and recreation |
| COMO | Long Integer(4) | | | |
| COM9I | Long(4) | F | F | Theaters |
| COMI | Long Integer(4) | | | |
| COM10I | Long(4) | F | F | Parking garages |
| COMITOI | Long Integer(4) | | | |
| IND1I | Long(4) | F | F | Heavy industrial |
| INDII | Long Integer(4) | | | |
| IND2I | Long(4) | F | F | Light industrial |
| IND21 | Long Integer(4) | | | |
| IND3I | Long(4) | F | F | Food/drugs/chemicals |
| INDSI | Long Integer(4) | | | |
| DID4I | Long(4) | F | F | Metal/minerals processing |
| IND4I | Long Integer(4) | | | |
| INDEL | Long(4) | F | F | High technology |
| IND5I | Long Integer(4) | | | |
| IND(I | Long(4) | F | F | Construction facilities and offices |
| IND6I | Long Integer(4) | | | |
| A CD 11 | Long(4) | F | F | Agriculture facilities and offices |
| AGR1I | Long Integer(4) | | | |
| | Long(4) | F | F | Churches and non-profit |
| REL1I | Long Integer(4) | | | organizations |
| | Long(4) | F | F | Government - general services |
| GOV1I | Long Integer(4) | 1 | 1 | Government - general services |
| | Long Integer(4) Long(4) | F | F | Government - emergency |
| GOV2I | | 1 | | |
| | Long Integer(4) | | | response |
| EDU1I | Long(4) | F | F | Grade schools and administrative |

| | Long Integer(4) | | | offices | | |
|--|--------------------------|---|---|---------------------------|--|--|
| EDU2I | Long(4) Long Integer(4) | F | F | Colleges and universities | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | |
| LC=Lowe | rcase | | | | | |

F.4.3.12 Square Footage Value by Census Tract: hzSqFootageOccupT

| Identification | on: | hzSqFootageOccupT | | | | | | |
|----------------|------------------|-------------------|--------------|---------------------------|------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | This tabl | e provides : | square footage value by | occupancy at census tract level | | | |
| | | for the st | udy region. | It belongs to Boundary | y.mdb. Data are transferred to the | | | |
| | | SQL Ser | ver databas | e in the Region folder of | during the process of creating a | | | |
| | | new stud | y region. D | ata are subsequently us | sed for Hazus-MH estimation of | | | |
| | | hazards, | damages, a | nd losses, as well as ma | apping. | | | |
| Data: | | | | | | | | |
| Feature Cla | ss Field Definit | ion | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type | | | | | | | |
| CensusTra | (Size) Text(11) | T, U, | T | 11 digits of the | 11 digits of the census tract | | | |
| ct | | A | | census tract number | number | | | |
| RES1F | Float | F | F | | Single-family dwellings | | | |
| RES2F | Float | F | F | | Manufactured housing | | | |
| RES3AF | Float | F | F | | Duplex - 1 to 2 units | | | |
| RES3BF | Float | F | F | | Duplex - 3 to 4 units | | | |
| RES3CF | Float | F | F | | Duplex - 5 to 9 units | | | |
| RES3DF | Float | F | F | | Duplex - 10 to 19 units | | | |
| RES3EF | Float | F | F | | Duplex - 20 to 49 units | | | |
| RES3FF | Float | F | F | | Duplex - more than 50 units | | | |
| RES4F | Float | F | F | | Temporary lodging | | | |
| RES5F | Float | F | F | | Institutional dormitories | | | |
| RES6F | Float | F | F | | Nursing homes | | | |
| COM1F | Float | F | F | | Retail trade | | | |
| COM2F | Float | F | F | | Wholesale trade | | | |
| COM3F | Float | F | F | | Personal and repair services | | | |
| COM4F | Float | F | F | | Professional and technical | | | |
| COMPT | | | | | services | | | |
| COM5F | Float | F | F | | Banks | | | |
| COM6F | Float | F | F | | Hospitals | | | |
| COM7F | Float | F | F | | Medical office and clinic | | | |

| COM8F | Float | F | F | Entertainment and recreation |
|-----------|--------------|-------------|-------------------|--------------------------------------|
| COM9F | Float | F | F | Theaters |
| COM10F | Float | F | F | Parking garages |
| IND1F | Float | F | F | Heavy industrial |
| IND2F | Float | F | F | Light industrial |
| IND3F | Float | F | F | Food/drugs/chemicals |
| IND4F | Float | F | F | Metal/minerals processing |
| IND5F | Float | F | F | High technology |
| IND6F | Float | F | F | Construction facilities and offices |
| AGR1F | Float | F | F | Agriculture facilities and offices |
| DEL 1E | Float | F | F | Churches and non-profit |
| REL1F | | | | organizations |
| GOV1F | Float | F | F | Government - general services |
| GOV2F | Float | F | F | Government - emergency |
| GOVZF | | | | response |
| EDU1F | Float | F | F | Grade schools and administrative |
| EDUIF | | | | offices |
| EDU2F | Float | F | F | Colleges and universities |
| * T=True; | F=False; U=U | Jnique; NU= | =Non-Unique; A=As | cending; D=Descending; UC=Uppercase; |
| LC=Lower | case | | | |

F.4.3.13 Square Footage Value by Census Block: hzSqFootageOccupB

| Identification | on: | hzSqFootageOccupB | | | | | | |
|----------------|--------------------|--|---|-------------------------|-------------------------------------|--|--|--|
| Type: | | ESRI Tal | ole | | | | | |
| Purpose: | | This table | This table provides square footage value by occupancy at census block level | | | | | |
| | | for the st | udy region. | It belongs to Boundar | ry.mdb. Data are transferred to the | | | |
| | | SQL Ser | ver databas | e in the Region folder | during the process of creating a | | | |
| | | new stud | y region wł | nen the flood hazard is | included. Data are subsequently | | | |
| | | used for Hazus-MH estimation of hazards, damages, and losses, as well as | | | | | | |
| | | mapping. | | | | | | |
| Data: | | | | | | | | |
| Feature Cla | ss Field Definit | ion | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| CensusBlo | Text(15) | T, U, | Т | 15 digits of the | 15 digits of the census block | | | |

| ck | | A | | census block | number |
|--------|-------|---|---|--------------|-------------------------------------|
| | | | | number | |
| RES1F | Float | F | F | | Single-family dwellings |
| RES2F | Float | F | F | | Manufactured housing |
| RES3AF | Float | F | F | | Duplex - 1 to 2 units |
| RES3BF | Float | F | F | | Duplex - 3 to 4 units |
| RES3CF | Float | F | F | | Duplex - 5 to 9 units |
| RES3DF | Float | F | F | | Duplex - 10 to 19 units |
| RES3EF | Float | F | F | | Duplex - 20 to 49 units |
| RES3FF | Float | F | F | | Duplex - more than 50 units |
| RES4F | Float | F | F | | Temporary lodging |
| RES5F | Float | F | F | | Institutional dormitories |
| RES6F | Float | F | F | | Nursing homes |
| COM1F | Float | F | F | | Retail trade |
| COM2F | Float | F | F | | Wholesale trade |
| COM3F | Float | F | F | | Personal and repair services |
| COM4F | Float | F | F | | Professional and technical |
| COMH | | | | | services |
| COM5F | Float | F | F | | Banks |
| COM6F | Float | F | F | | Hospitals |
| COM7F | Float | F | F | | Medical office and clinic |
| COM8F | Float | F | F | | Entertainment and recreation |
| COM9F | Float | F | F | | Theaters |
| COM10F | Float | F | F | | Parking garages |
| IND1F | Float | F | F | | Heavy industrial |
| IND2F | Float | F | F | | Light industrial |
| IND3F | Float | F | F | | Food/drugs/chemicals |
| IND4F | Float | F | F | | Metal/minerals processing |
| IND5F | Float | F | F | | High technology |
| IND6F | Float | F | F | | Construction facilities and offices |
| AGR1F | Float | F | F | | Agriculture facilities and offices |
| REL1F | Float | F | F | | Churches and non-profit |
| ILLII | | | | | organizations |
| GOV1F | Float | F | F | | Government - general services |
| GOV2F | Float | F | F | | Government - emergency |

| | | | | | response | | |
|--|----------------|---|---|--|----------------------------------|--|--|
| EDU1F | Float | F | F | | Grade schools and administrative | | |
| | | | | | offices | | |
| EDU2F | Float | F | F | | Colleges and universities | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| I C=Lower | I C=I owercase | | | | | | |

F.4.3.14 County Location Factor: hzMeansCountyLocationFactor

| Identification: | | hzMeansCountyLocationFactor | | | | | | |
|-----------------|-----------------------|-----------------------------|-----------------|------------------------|---------------------------------------|--|--|--|
| Type: | | ESRI table | | | | | | |
| Purpose: | | The Hazu | ıs Means-ba | ased location factor a | t the county level used to "localize" | | | |
| | | national o | costs to refl | ect local conditions. | | | | |
| Data: | | | | | | | | |
| Feature Class F | ield Definiti | on | | | | | | |
| Name | ESRI | Index | Require | Values | Description | | | |
| | Type | * | d* | | | | | |
| | (Size) | | | | | | | |
| | Access Type (Size) | | | | | | | |
| CountyFips | Text(5) | F | T | Five-digit FIPS | Five-digit FIPS county code. | | | |
| | | | | county code | First two digits are the FIPS state | | | |
| | | | | | code; the remaining three digits | | | |
| | | | | | are the county code. | | | |
| | Double | F | F | | Means location factors for | | | |
| | | | | | residential occupancies on a | | | |
| MeansAdjRes | | | | | county basis | | | |
| | Double | F | F | | Means location factors for non- | | | |
| MeansAdjNon | | | | | residential occupancies on a | | | |
| Res | | | | | county basis | | | |
| * T=True; F=Fa | alse; U=Unio | que; NU=N | Ion-Unique | ; A=Ascending; D=D | Descending; UC=Uppercase; | | | |
| LC=Lowercase | | | | | | | | |
| * T=True; F=Fa | lalse; U=Unio | que; NU=N | Jon-Unique | ; A=Ascending; D=E | • | | | |

F.5 Essential Facilities: EF.mdb

F.5.1 Database Overview

The EF.mdb is an Access personal geodatabase that contains (1) feature classes for essential facilities with fields that are relevant for all hazards and (2) tables with information specific to the EQ and FL Models. Essential facilities are those that provide services to the community and should be functional after an earthquake, flood, or hurricane event. Essential facilities include:

- Fire stations
- Police stations
- Emergency centers
- Care facilities (hospitals and medical clinics)
- Schools (K-12 and colleges)

The geographical domain of the database is the state. In that case, there is one EF.mdb database for each state, each located in the appropriate State folder.

During the creation of a study region, for all hazards, essential facilities geometries from feature classes are transferred to a geodatabase named EF.mdb in the Region folder. Feature classes are named with the prefix hz, meaning they are relevant across all Hazus-MH Models. Police stations, for instance, are stored in hzPoliceStation feature class with fields containing information common to all hazards, such as name and address. This information is transferred to a table with the same name (for police station, hzPoliceStation) in the SQL Server database in the Region folder.

Hazard specific tables are named with the prefix eq (earthquake) and fl (flood), such as eqPoliceStation and flPoliceStation. The information is transferred to tables with the same name in the SQL Server database in the Region folder. There is a one-to-one relationship between hz tables and the corresponding eq and fl tables through a unique identifier.

F.5.2 Identification

EF.mdb

F.5.3 Database Content

The EF.mdb database includes:

| Name | Туре | Content | | |
|-----------------|--------------------|--|--|--|
| hzCareFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of | | |
| | Class | hospitals and medical clinics | | |
| hzEmergencyCtr | ESRI Point Feature | Geometry (point features) and all-hazards information of | | |
| | Class | emergency operation centers (EOC) | | |
| hzFireStation | ESRI Point Feature | Geometry (point features) and all-hazards information of | | |
| | Class | fire stations | | |
| hzPoliceStation | ESRI Point Feature | Geometry (point features) and all-hazards information of | | |
| | Class | police stations | | |
| hzSchool | ESRI Point Feature | Geometry (point features) and all-hazards information of | | |
| | Class | schools and colleges | | |
| eqCareFlty | ESRI Table | Earthquake specific information for hospitals and | | |
| | | medical clinics | | |
| eqEmergencyCtr | ESRI Table | Earthquake specific information for EOCs | | |
| eqFireStation | ESRI Table | Earthquake specific information for fire stations | | |
| eqPoliceStation | ESRI Table | Earthquake specific information for police stations | | |
| eqSchool | ESRI Table | Earthquake specific information for schools and colleges | | |
| flCareFlty | ESRI Table | Flood specific information for hospitals and medical | | |
| | | clinics | | |
| flEmergencyCtr | ESRI Table | Flood specific information for EOCs | | |
| flFireStation | ESRI Table | Flood specific information for fire stations | | |
| flPoliceStation | ESRI Table | Flood specific information for police stations | | |
| flSchool | ESRI Table | Flood specific information for schools and colleges | | |

F.5.3.1 Care Facilities Feature Class: hzCareFlty

| Identification: hzCareFlty | | | | | | | | |
|----------------------------|--------------------|--------------------------|--------------|------------------------|--------------------------------------|--|--|--|
| Type: | | ESRI Point Feature Class | | | | | | |
| Purpose: | | Belongs to 1 | EF.mdb. Pr | ovides the geometry | of hospitals and medical clinics. | | | |
| | | During the | creation of | a study region, for al | l hazards, geometries are | | | |
| | | transferred t | to a geodata | abase named EF.mdb | in the Region folder. Field | | | |
| | | information | is transferr | ed to a table with the | e same name (hzCareFlty) in the | | | |
| | | SQL Server | database ir | the Region folder. | Data are subsequently used for | | | |
| | | Hazus-MH | estimation | of hazards, damages, | , and loss of functionality, as well | | | |
| | | as mapping. | | | | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definitio | n | | | | | | |
| Name | ESRI Type | Index* | Require | Values | Description | | | |
| | (Size) | | d* | | | | | |
| C Fl. II | Access Type (Size) | | T. LIC | | 11 | | | |
| CareFltyId | Text(8) | T, U, A | T, UC | | Unique identifier for each record. | | | |
| | | | | | It relates this hzCareFlty feature | | | |
| | | | | | class with the associated | | | |
| | | | | | eqCareFlty and flCareFlty tables. | | | |
| | | | | | The standard format adopted by | | | |
| | | | | | Hazus is SSxxxxxx, where SS is | | | |
| | | | | | the State name abbreviation | | | |
| | | | | | (upper case) and xxxxxx is a | | | |
| | | | | | sequential number from 000001 | | | |
| T.001 | T (5) | | m 110 | | to 999999. | | | |
| EfClass | Text(5) | T, NU, | T, UC | EFHL=Large | This field is used to indicate the | | | |
| | | A | | hospital | facility classification. It is used | | | |
| | | | | EFHM=Medium | by Hazus-MH to identify the | | | |
| | | | | hospital | appropriate damage curve for | | | |
| | | | | EFHS=Small | assessing the loss estimations | | | |
| | | | | hospital | produced by the EQ model. | | | |
| | | | | EFMC=Medical | | | | |
| | | | | clinic | | | | |
| | | | | MDFLT=Default | | | | |
| | | | | value | | | | |
| Tract | Text(11) | T, NU, | T | 11 digits of the | Census tract number of the | | | |

| | | A | | census tract | 2000 US Census |
|-------------|---------------------------|---|---|-----------------------------------|--|
| | | | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
| State | Text(2) | F | F | | USPS state abbreviation |
| Contact | Text(40) | F | F | | Name of contact person for the facility |
| PhoneNumber | Text(14) | F | F | | Phone number to contact the facility |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built |
| NumStories | Short(1) Byte(1) | F | F | | Number of stories |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| BackupPower | Short(1) Yes/No(1) | F | F | 0=No 1=Yes | Availability of backup power |
| NumBeds | Long(4) Long Integer(4) | F | F | | Maximum number of available patient beds |
| AhaId | Text(7) | F | F | | American Hospital Association (AHA) hospital identification number, if AHA data used |
| Latitude | Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.5.3.2 Earthquake Specific Care Facilities Table: eqCareFlty

| Identification | on: eqCareFlty | | | | | | | |
|----------------|--------------------------------------|---|--|--|--|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | hospitals content is SQL Serv Hazus-M functiona | and medica stransferred yer database H EQ Mode lity. There | I clinics. During the cr I to another table with the in the Region folder. It the lestimation of hazards | Model specific information for eation of a study region, the table the same name (eqCareFlty) in the Data are subsequently used for s, damages, and loss of eqCareFlty for each record in e identifier. | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definitio | n | | | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | | |
| CareFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this eqCareFlty feature class with the associated hzCareFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, Table B.2 | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for descriptions of available model building types. | | | |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- Code | Building codes in effect in the area. See the Earthquake Technical Manual, Chapters 3 | | | |

| FoundationT | Text(1) | F | F | LC = Low-Code PC = Pre-Code HS = Special High- Code MS = Special Moderate-Code LS = Special Low- Code | and 5, for design levels. Foundation type (e.g., slab, |
|-------------|--------------------|---|---|---|--|
| ype | | | | | pile). This field is found in the table for future extensibility of the earthquake model but does not need to be populated at this time. |
| SoilType | Text(1) | F | T | A = Soil type A B = Soil type B C = Soil type C D = Soil type D E = Soil type E | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines conditions where the structure is located. This is based on shear wave velocity. See Earthquake User Manual, Appendix B, Table B.1, for details. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility locattion. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| WaterDepth | Float(4) Single(4) | F | F | Null ≥ 0 | Water table depth in feet. Values must be greater than 0. |

| | | | | | Range: $0 - 300$ meters. | | |
|---------------|--|--|--|--|--------------------------|--|--|
| * T=True; F=I | * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | |
| LC=Lowercas | e | | | | | | |

F.5.3.3 Flood Specific Care Facilities Table: flCareFlty

| Identification: | | flCareFlty | | | | | | |
|--------------------|--------------------------------------|--|---------------|--|--|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Flood Model specific information of hospitals and medical clinics. During the creation of a study region, the table content is transferred to another table with the same name (flCareFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flCareFlty for each record in hzCareFlty with same CareFltyId unique identifier. | | | | | | |
| Data: | D: 11D (* :/: | | | | | | | |
| | Field Definition | | T | T 4 | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | | |
| CareFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flCareFlty feature class with the associated hzCareFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| BldgType | Text(15) | F | F | Null, Masonry, Concrete, Wood, Steel, ManufHousing | General building type | | | |
| DesignLevel | Text(1) | F | F | Null 0 = Pre-FIRM 1 = Post-FIRM | Design level (Pre/Post FIRM) | | | |
| FoundationT ype | Text(1) | F | F | Null 1 = Basement 2 = Crawl 3 = Fill | Foundation type (e.g., slab, pile) | | | |

| | | | | 4 = Pier | |
|--------------|------------|---|---|---------------|--------------------------------|
| | | | | 5 = Pile | |
| | | | | 6 = Slab | |
| | | | | 7 = SolidWall | |
| FirstFloorHt | Float(4) | F | F | | First floor height |
| | Single(4) | | | | |
| BldgDamage | Text(10) | F | F | | Default building damage |
| FnId | | | | | function id |
| ContDamage | Text(10) | F | F | | Default content damage |
| FnId | | | | | function id |
| FloodProtect | Short(2) | F | F | | Flood protection return period |
| ion | Integer(2) | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.5.3.4 Emergency Operation Center Feature Class: hzEmergencyCtr

| Identification | on: | hzEmergencyCtr | | | | | | |
|----------------|--------------------------------------|--|------------|--|--|--|--|--|
| Type: | | ESRI Point Feature Class | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides the geometry of EOCs. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named EF.mdb in the Region folder. Field information is transferred to a table with the same name (hzEmergencyCtr) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | | |
| Data: | | | | | , | | | |
| Feature Cla | ss Field Definition | n | | | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | | |
| EocId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this hzEmergencyCtr feature class with the associated eqEmergencyCtr and flEmergencyCtr tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| EfClass | Text(5) | T, NU, A | T, UC | EDFLT = Default EFEO = Emergency Operation Centers See Appendix B, Table B-3 | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ model. | | | |
| Tract | Text(11) | T, NU, A | Т | 11 digits of the census tract number | 11 digits of the census tract number | | | |
| Name | Text(40) | F | F | | Facility name | | | |

| Address | Text(40) | F | F | | Physical address |
|--------------|----------------------|-----------|----------|------------------------|----------------------------------|
| City | Text(40) | F | F | | City |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Contact | Text(40) | F | F | | Name of contact person for the |
| | | | | | facility |
| PhoneNumb | Text(14) | F | F | | Phone number to contact the |
| er | | | | | facility |
| YearBuilt | Short(2) | F | F | Null or | Year the structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| D 1 D | Currency(8) | | | 0.21 | 4 11 11 01 1 |
| BackupPowe | Short(1) | F | F | 0 = No | Availability of backup power |
| r | Yes/No(1) | | | 1 = Yes | |
| ShelterCapac | Short(2) | F | F | | Shelter capacity. This is for |
| ity | Integer(2) | | | | informational purposes only and |
| | | | | | is not used in any Hazus-MH |
| | | | | | calculations. This is the total |
| | | | | | number of persons who can be |
| | | | | | sheltered in this facility |
| Area | Float(4) | F | F | | AHA hospital id number, if AHA |
| | Single(4) | | | | data are used |
| Kitchen | Short(1) | F | F | $0 = N_0$ | Indicates whether a kitchen is |
| | Yes/No(1) | | | 1 = Yes | available in the facility |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |
| * T=True: F= | L False: II=IInig | ne. NI l= | Non-Unio | nue: A=Ascending: D=De | escending: UC=Unnercase: |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.5.3.5 Earthquake Specific Emergency Center Table: eqEmergencyCtr

| Identification | : | eqEmergencyCtr | | | | |
|----------------|--------------------------------------|--|-------------|--|--|--|
| Type: | | ESRI Table | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Earthquake Model specific information of EOCs. During the creation of a study region, the table content is transferred to another table with the same name (eqEmergencyCtr) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqEmergencyCtr for each record in hzEmergencyCtr with same EocId unique identifier. | | | | |
| Data: | | | ara amque n | | | |
| | Field Definition | n | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | |
| EocId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this eqEmergencyCtr feature class with the associated hzEmergencyCtr in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, Table B-2 | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for complete description of available model building types. | |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- Code LC = Low-Code | Building codes in effect in the area. See Earthquake Technical Manual, Chapters 3 and 5, for detailed information about | |

| | | | | PC = Pre-Code | design levels. |
|--------------|---------------|----------|-----------|-----------------------|-------------------------------------|
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| FoundationT | Text(1) | F | Т | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is found in the table |
| | | | | | for future extensibility of the |
| | | | | | Earthquake Model, but does not |
| | | | | | need to be populated at this time. |
| SoilType | Text(1) | F | T | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1 | Reduction Program (NEHRP) |
| | | | | | soil classification that defines |
| | | | | | structure location conditions. |
| | | | | | This is based on shear wave |
| | | | | | velocity. See Appendix B, Table |
| | | | | | B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | locattion. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F= | False; U=Unio | que; NU= | Non-Uniqu | ue; A=Ascending; D=De | scending; UC=Uppercase; |
| LC=Lowercas | se | | | | |

F.5.3.6 Flood Specific Emergency Center Facilities Table: flEmergencyCtr

| Identification | | flEmergencyCtr | | | | | | |
|---|------------------|---|------------|--|--|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Flood Model specific information of EOCs. During the creation of a study region, the table content is transferred to another table with the same name (flEmergencyCtr) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flEmergencyCtr for each record in hzEmergencyCtr with same EocId unique identifier. | | | | | | |
| Data: | | With Same | e Eocia um | que identifier. | | | | |
| | Field Definition | n | | | | | | |
| Name ESRI Type (Size) Access Type (Si. | | Index * | Require d* | Values | Description | | | |
| EocId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flEmergencyCtr feature class with the associated hzEmergencyCtr in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| BldgType | Text(15) | F | F | Null, Masonry, Concrete, Wood, Steel, ManufHousing | General building type | | | |
| DesignLevel | Text(1) | F | F | Null $0 = \text{Pre-FIRM}$ $1 = \text{Post-FIRM}$ | Design level (Pre/Post FIRM) | | | |
| FoundationT ype | Text(1) | F | F | Null 1 = Basement 2 = Crawl 3 = Fill | Foundation type (e.g., slab, pile) | | | |

| | | | | 4 = Pier | |
|--------------|--------------------|---|---|---------------|--------------------------------|
| | | | | 5 = Pile | |
| | | | | 6 = Slab | |
| | | | | 7 = SolidWall | |
| FirstFloorHt | Float(4) Single(4) | F | F | | First-floor height |
| BldgDamage | Text(10) | F | F | | Default building damage |
| FnId | | | | | function id |
| ContDamage | Text(10) | F | F | | Default content damage |
| FnId | | | | | function id |
| FloodProtect | Short(2) | F | F | | Flood protection return period |
| ion | Integer(2) | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.5.3.7 Fire Stations Feature Class: hzFireStation

| Identification: | | hzFireStation | | | | | | | |
|-----------------|--------------------|--|--------------|-------------------------|--------------------------------------|--|--|--|--|
| Type: | | ESRI Point Feature Class | | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides the geometry of fire stations. During the | | | | | | | |
| | | creation of a study region, for all hazards, geometries are transferred to a | | | | | | | |
| | | geodataba | ase named l | EF.mdb in the Region | folder. Field information is | | | | |
| | | transferred to a table with the same name (hzFireStation) in the SQL Server | | | | | | | |
| | | database | in the Regio | on folder. Data are sub | sequently used for Hazus-MH | | | | |
| | | estimation | n of hazard | s, damages, and loss o | f functionality, as well as mapping. | | | | |
| Data: | | | | | | | | | |
| Feature Class | Field Definitio | n | | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | | |
| | (Size) | * | d* | | | | | | |
| | Access Type (Size) | | | | | | | | |
| FireStationId | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | | |
| | | A | | | It relates this hzFireStation | | | | |
| | | | | | feature class with the associated | | | | |
| | | | | | eqFireStation and flFireStation | | | | |
| | | | | | tables. The standard format | | | | |
| | | | | | adopted by Hazus is SSxxxxxx, | | | | |
| | | | | | where SS is the State name | | | | |
| | | | | | abbreviation (upper case) and | | | | |
| | | | | | xxxxxx is a sequential number | | | | |
| | | | | | from 000001 to 999999. | | | | |
| EfClass | Text(5) | T, | T, UC | EDFLT = Default | This field is used to indicate the | | | | |
| | | NU, | | EFFS = Fire | facility classification. It is used | | | | |
| | | Α | | Station | by Hazus-MH to identify the | | | | |
| | | | | | appropriate damage curve for | | | | |
| | | | | | assessing loss estimations | | | | |
| | | | | | produced by the EQ model. | | | | |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US census tract number | | | | |
| | | NU, | | Census tract | | | | | |
| | | A | | number | | | | | |
| Name | Text(40) | F | F | | Facility name | | | | |
| Address | Text(40) | F | F | | Physical address | | | | |
| City | Text(40) | F | F | | City | | | | |

| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
|--------------|------------------------|---|---|-------------------|--|
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Contact | Text(40) | F | F | | Contact name of person for the |
| | | | | | facility |
| PhoneNumb | Text(14) | F | F | | Phone number to contact the |
| er | | | | | facility |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| BackupPowe | Short(1) | F | F | 0=No | Availability of backup power |
| r | Yes/No(1) | | | 1=Yes | |
| ShelterCapac | Short(2) | F | F | | Shelter capacity. This is for |
| ity | Integer(2) | | | | informational purposes only and |
| | | | | | is not used in any Hazus-MH |
| | | | | | calculations. This is the total |
| | | | | | number of persons who can be |
| | | | | | sheltered in this facility. |
| Area | Float(4) | F | F | | AHA hospital id number, if AHA |
| | Single(4) | | | | data are used. |
| Kitchen | Short(1) | F | F | $0 = N_0$ | Indicates whether a kitchen is |
| | Yes/No(1) | | | 1 = Yes | available in the facility. |
| NumTrucks | Short(2) | F | F | | Number of fire trucks in a fire |
| | Integer(2) | | | | station |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| | | | | 1 | 1 |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.5.3.8 Earthquake Specific Fire Stations Table: eqFireStation

| Identification: | | eqFireStation | | | | | | |
|-----------------|--------------------|---|---------------|--------------------------|------------------------------------|--|--|--|
| Type: | | ESRI Tal | ole | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Earthquake Model specific information of fire | | | | | | |
| | | stations. l | During the | creation of a study regi | on, the content of the table is | | | |
| | | transferre | ed to anothe | r table with the same n | ame (eqFireStation) in the SQL | | | |
| | | Server da | tabase in th | e Region folder. Data | are subsequently used for Hazus- | | | |
| | | MH EQ N | Model estin | nation of hazards, dama | ages, and loss of functionality. | | | |
| | | There mu | ist be one re | ecord in eqFireStation | for each record in hzFireStation | | | |
| | | with same | e FireStatio | nId unique identifier. | | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definitio | n | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| FireStationId | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| | | Α | | | It relates this eqFireStation | | | |
| | | | | | feature class with the associated | | | |
| | | | | | hzFireStation in a one-to-one | | | |
| | | | | | relationship. The standard format | | | |
| | | | | | adopted by Hazus is SSxxxxxx, | | | |
| | | | | | where SS is the State name | | | |
| | | | | | abbreviation (upper case) and | | | |
| | | | | | xxxxxx is a sequential number | | | |
| | | | | | from 000001 to 999999. | | | |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be | | | |
| | | | | Table B.2 | modeled in Hazus earthquake | | | |
| | | | | | scenarios. See Appendix B, | | | |
| | | | | | Table B.2, for complete | | | |
| | | | | | description of available model | | | |
| | | | | | building types. | | | |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the | | | |
| | | | | MC = Moderate- | area. See Earthquake Technical | | | |
| | | | | Code | Manual, Chapters 3 and, for | | | |
| | | | | LC = Low-Code | detailed information about | | | |
| | | | | PC = Pre-Code | design levels. | | | |

| | | | | HS = Special High- | | | | | | | |
|--------------|---------------|----------|--|------------------------|-------------------------------------|--|--|--|--|--|--|
| | | | | Code | | | | | | | |
| | | | | MS = Special | | | | | | | |
| | | | | Moderate-Code | | | | | | | |
| | | | | LS = Special Low- | | | | | | | |
| | | | | Code | | | | | | | |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). | | | | | | |
| ype | | | | | This field is in the table for | | | | | | |
| | | | | | future extensibility of the | | | | | | |
| | | | | | Earthquake Model but does not | | | | | | |
| | | | | | need to be populated at this time. | | | | | | |
| SoilType | Text(1) | F | T | See Appendix B, | National Earthquake Hazard | | | | | | |
| | | | | Table B.1 | Reduction Program (NEHRP) | | | | | | |
| | | | | | soil classification that defines | | | | | | |
| | | | | | structure location conditions. | | | | | | |
| | | | | | This is based on shear wave | | | | | | |
| | | | | | velocity. See Appendix B, Table | | | | | | |
| | | | | | B.1, for details. | | | | | | |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction | | | | | | |
| | Byte(1) | | | | susceptibility of the facility | | | | | | |
| | | | | | locattion. See Earthquake | | | | | | |
| | | | | | Technical Manual (Section 4.2, | | | | | | |
| | | | | | Ground Failure) for liquefaction | | | | | | |
| | | | | | discussion. | | | | | | |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility | | | | | | |
| | Byte(1) | | | | of the facility location. See | | | | | | |
| | | | | | Earthquake Technical Manual | | | | | | |
| | | | | | (Section 4.2, Ground Failure) for | | | | | | |
| | | | | | liquefaction discussion. | | | | | | |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values | | | | | | |
| | Single(4) | | | | must be greater than 0. Range: 0 | | | | | | |
| | | | | | – 300 meters. | | | | | | |
| * T=True; F= | False; U=Unio | que; NU= | Non-Uniq | jue; A=Ascending; D=De | scending; UC=Uppercase; | | | | | | |
| 1.0-1 | | | * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | | |

F.5.3.9 Flood Specific Fire Station Facilities Table: flFireStation

| Identification: | | flFireStation | | | | | |
|--------------------|--------------------------------------|--|------------|--|---|--|--|
| Type: | | ESRI Tal | ole | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Flood Model specific information of fire stations. During creation of a study region, the table content is transferred to another table with the same name (flFireStation) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flFireStation for each record in hzFireStation with same FireStationId unique identifier. | | | | | |
| Data: | | | | | | | |
| Feature Class | Field Definitio | n | | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | |
| FireStationId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flFireStation feature class with the associated hzFireStation in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| BldgType | Text(15) | F | F | Null, Masonry, Concrete, Wood, Steel, ManufHousing | General building type | | |
| DesignLevel | Text(1) | F | F | Null 0 = Pre-FIRM 1 = Post-FIRM | Design level (Pre/Post FIRM) | | |
| FoundationT ype | Text(1) | F | F | Null 1 = Basement 2 = Crawl 3 = Fill | Foundation type (e.g., slab, pile) | | |

| | | | | 4 = Pier | |
|--------------|------------|---|---|---------------|--------------------------------|
| | | | | 5 = Pile | |
| | | | | 6 = Slab | |
| | | | | 7 = SolidWall | |
| FirstFloorHt | Float(4) | F | F | | First-floor height |
| | Single(4) | | | | |
| BldgDamage | Text(10) | F | F | | Default building damage |
| FnId | | | | | function id |
| ContDamage | Text(10) | F | F | | Default content damage |
| FnId | | | | | function id |
| FloodProtect | Short(2) | F | F | | Flood protection return period |
| ion | Integer(2) | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.5.3.10 Police Station Feature Class: hzPoliceStation

| Identification: | | hzPoliceStation | | | | | | |
|-----------------|---|--------------------------|---------------|---------------------------|--------------------------------------|--|--|--|
| Type: | | ESRI Point Feature Class | | | | | | |
| Purpose: | Belongs to EF.mdb. Provides the geometry of police stations. During the | | | | | | | |
| | | creation o | of a study re | egion, for all hazards, g | geometries are transferred to a | | | |
| | | geodataba | ase named I | EF.mdb in the Region | folder. Field information is | | | |
| | | transferre | d to a table | with the same name (h | nzPoliceStation) in the SQL Server | | | |
| | | database i | in the Regio | on folder. Data are sub | sequently used for Hazus-MH | | | |
| | | estimatio | n of hazard | s, damages, and loss of | f functionality, as well as mapping. | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definition | n | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| PoliceStation | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| Id | | A | | | It relates this hzPoliceStation | | | |
| | | | | | feature class with the associated | | | |
| | | | | | eqPoliceStation and | | | |
| | | | | | flPoliceStation tables. The | | | |
| | | | | | standard format adopted by | | | |
| | | | | | Hazus is SSxxxxxx, where SS is | | | |
| | | | | | the State name abbreviation | | | |
| | | | | | (upper case) and xxxxxx is a | | | |
| | | | | | sequential number from 000001 | | | |
| | | | | | to 999999. | | | |
| EfClass | Text(5) | T, | T, UC | EDFLT = Default | This field is used to indicate the | | | |
| | | NU, | | EFFS = Police | facility classification. It is used | | | |
| | | A | | Station | by Hazus-MH to identify the | | | |
| | | | | See Appendix B, | appropriate damage curve for | | | |
| | | | | Table B.4 | assessing loss estimations | | | |
| | | | | | produced by the EQ Model. | | | |
| Tract | Text(11) | T, | T | 11 digits of the | 2000 US Census tract number | | | |
| | | NU, | | Census tract | | | | |
| | | A | | number | | | | |
| Name | Text(40) | F | F | | Facility name | | | |
| Address | Text(40) | F | F | | Physical address | | | |
| [| I | 1 | 1 | 1 | | | | |

| City | Text(40) | F | F | | City |
|--------------|-------------|---|---|-------------------|----------------------------------|
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Contact | Text(40) | F | F | | Name of contact person for the |
| | | | | | facility |
| PhoneNumb | Text(14) | F | F | | Phone number to contact the |
| er | | | | | facility |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| D 1 D | Currency(8) | Г | Г | 0. 1 | A 11117 C1 1 |
| BackupPowe | Short(1) | F | F | 0 = No | Availability of backup power |
| r | Yes/No(1) | | | 1 = Yes | |
| ShelterCapac | Short(2) | F | F | | Shelter capacity. This is for |
| ity | Integer(2) | | | | informational purposes only and |
| | | | | | is not used in any Hazus-MH |
| | | | | | calculations. This is the total |
| | | | | | number of persons who can be |
| | | | | | sheltered in this facility. |
| Area | Float(4) | F | F | | AHA hospital id number, if AHA |
| | Single(4) | | | | data are used. |
| Kitchen | Short(1) | F | F | 0 = No | Indicates whether a kitchen is |
| | Yes/No(1) | | | 1 = Yes | available in the facility. |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |
| * TD TD TD T | | | | | 1 |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.5.3.11 Earthquake Specific Police Stations Table: eqPoliceStation

| Identification: | entification: eqPoliceStation | | | | |
|---------------------|--------------------------------------|--|---|---|--|
| Type: | | ESRI Tal | | | |
| Purpose: | | police sta transferre Server da MH EQ I There mu | ed to anothe tabase in the Model estimast be one re | ng the creation of a stu or table with the same r are Region folder. Data | |
| | Field Definitio | n | | | |
| Name Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description |
| PoliceStation Id | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this eqPoliceStation feature class with the associated hzPoliceStation in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, Table B.2 | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for complete description of available model building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- Code LC = Low-Code PC = Pre-Code | Building codes in effect in the area. See Earthquake Technical Manual, Chapters 3 and 5, for detailed information about design levels |

| | | | | HS = Special High- | |
|-------------|-----------|---|-------|--------------------|--------------------------------------|
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1 | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | structure location conditions. |
| | | | | | This is based on shear wave |
| | | | | | velocity. See Appendix B, Table |
| | | | | | B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | locattion. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicator of the landslide |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section, 4.2 |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| WaterDepth | Float(4) | F | F | Null≥0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | 1 | | | | - 300 meters. |

F.5.3.12 Flood Specific Police Station Facilities Table: flPoliceStation

| Identification: | | flPoliceStation | | | | | | |
|--|-----------------|--|--|--|--|--|--|--|
| Type: | | ESRI Tal | ole | | | | | |
| Purpose: | | stations. It to anothe database Flood Momust be considered to the state of the stat | During the or table with in the Region odel estimation one record in | creation of a study reg the same name (flPolon on folder. Data are sub tion of hazards, damag | I specific information of police ion, the table content is transferred iceStation) in the SQL Server esequently used for Hazus-MH ges, and loss of functionality. There ach record in hzPoliceStation with | | | |
| | Field Definitio | n | | | | | | |
| Feature Class Field Definit Name ESRI Type (Size) Access Type (Size) | | Index * | Require d* | Values | Description | | | |
| PoliceStation Id | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flPoliceStation feature class with the associated hzPoliceStation in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| BldgType | Text(15) | F | F | Null, Masonry, Concrete, Wood, Steel, ManufHousing | General building type | | | |
| DesignLevel | Text(1) | F | F | Null 0 = Pre-FIRM 1 = Post-FIRM | Design level (Pre/Post FIRM) | | | |
| FoundationT ype | Text(1) | F | F | Null 1 = Basement 2 = Crawl 3 = Fill | Foundation type (e.g., slab, pile) | | | |

| | | | | 4 = Pier | |
|--------------|--------------------|---|---|---------------|--------------------------------|
| | | | | 5 = Pile | |
| | | | | 6 = Slab | |
| | | | | 7 = SolidWall | |
| FirstFloorHt | Float(4) Single(4) | F | F | | First-floor height |
| BldgDamage | Text(10) | F | F | | Default building damage |
| FnId | | | | | function id |
| ContDamage | Text(10) | F | F | | Default content damage |
| FnId | | | | | function id |
| FloodProtect | Short(2) | F | F | | Flood protection return period |
| ion | Integer(2) | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.5.3.13 Schools Feature Class: hzSchool

| Identification: hzSchool | | | | | |
|--------------------------|--------------------------------------|--|--|---|---|
| Type: | | ESRI Poi | nt Feature (| Class | |
| Purpose: Data: | | Belongs t universiti are transf informati SQL Serv Hazus-M as mappin | es. During erred to a go on is transforer databased H estimation | Provides the geometry the creation of a study eodatabase named EF erred to a table with the e in the Region folder. | y of schools, colleges, and region, for all hazards, geometries .mdb in the Region folder. Field he same name (hzSchool) in the Data are subsequently used for s, and loss of functionality, as well |
| | | | Daguira | Values | Description |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description |
| SchoolId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this hzSchool feature class with the associated eqSchool and flSchool tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the State name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| EfClass | Text(5) | T, NU, A | T, UC | EDFLT = Default EFS1 = Grade School EFS2 = College/ University | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model. |
| Tract | Text(11) | T, NU, A | T | 11 digits of the census tract number | Census tract number |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |

| City | Text(40) | F | F | | City | | |
|--|------------------------|---|---|-----------------------------------|---|--|--|
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 | | |
| Statea | Text(2) | F | F | | USPS state abbreviation | | |
| Contact | Text(40) | F | F | | Name of contact person for the facility | | |
| PhoneNumb er | Text(14) | F | F | | Phone number to contact the facility | | |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built | | |
| NumStories | Short(1) Byte(1) | F | F | | Number of stories | | |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) | | |
| NumStudent s | Short(2) Integer(2) | F | F | | Number of students in facility | | |
| BackupPowe r | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Availability of backup power | | |
| ShelterCapac ity | Short(2) Integer(2) | F | F | | Shelter capacity. This is for informational purposes only and is not used in any Hazus-MH calculations. This is the total number of persons who can be sheltered in this facility | | |
| Area | Float(4) Single(4) | F | F | | AHA hospital id number, if AHA data are used | | |
| District | Text(30) | F | F | | Name of school district | | |
| Kitchen | Short(1) Yes/No(1) | F | F | 0=No 1=Yes | Indicates whether a kitchen is available in the facility | | |
| Latitude | Double(8) | F | F | Latitude decimal degrees | Latitude | | |
| Longitude | Double(8) Double(8) | F | F | Longitude decimal degrees | Longitude | | |
| Comment | Text(40) | F | F | | Comments | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |

F.5.3.14 Earthquake Specific School Table: eqSchool

| Identification: | | eqSchool | | | | | | |
|-----------------|--------------------|---|---------------|-------------------------|------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Earthquake Model specific information of | | | | | | |
| | | schools, colleges, and universities. During the creation of a study region, the | | | | | | |
| | | table cont | tent is trans | ferred to another table | with the same name (eqSchool) in | | | |
| | | the SQL Server database in the Region folder. Data are subsequently used for | | | | | | |
| | | Hazus-MH EQ Model estimation of hazards, damages, and loss of | | | | | | |
| | | functiona | lity. There | must be one record in | eqSchool for each record in | | | |
| | | hzSchool | with same | SchoolId unique ident | ifier. | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definitio | n | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| SchoolId | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| | | A | | | It relates this eqSchool feature | | | |
| | | | | | class with the associated | | | |
| | | | | | hzSchool in a one-to-one | | | |
| | | | | | relationship. The standard format | | | |
| | | | | | adopted by Hazus is SSxxxxxx, | | | |
| | | | | | where SS is the State name | | | |
| | | | | | abbreviation (upper case) and | | | |
| | | | | | xxxxxx is a sequential number | | | |
| | | | | | from 000001 to 999999. | | | |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be | | | |
| | | | | Table B.2. | modeled in HAZUS earthquake | | | |
| | | | | | scenarios. See Appendix B, | | | |
| | | | | | Table B.2, for complete | | | |
| | | | | | description of available model | | | |
| | | | | | building types. | | | |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the | | | |
| | | | | MC = Moderate- | area. See Earthquake Technical | | | |
| | | | | Code | Manual, Chapters 3 and 5, for | | | |
| | | | | LC = Low-Code | detailed information about | | | |

| | T | | | T | T |
|-------------|-----------|-------|-------|--------------------|-------------------------------------|
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is found in the table |
| | | | | | for future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | table B-1 | Reduction Program (NEHRP) |
| | | | | | soil classification that defines |
| | | | | | structure location conditions. |
| | | | | | This is based on shear wave |
| | | | | | velocity. See Appendix B, Table |
| | | | | | B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | locattion. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicator of the landslide |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| | [| AIL A | | . A - A 1' D - D - | scending; UC=Uppercase; |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.5.3.15 Flood Specific Schools Facilities Table: flSchool

| Identification: | | flSchool | | | | | | |
|-----------------|--------------------|--|---------------|-------------------------|------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to EF.mdb. Provides Flood Model specific information of schools, | | | | | | |
| | | colleges, and universities. During the creation of a study region, the table | | | | | | |
| | | content is | s transferred | d to another table with | the same name (flSchool) in the | | | |
| | | SQL Server database in the Region folder. Data are subsequently used for | | | | | | |
| | | Hazus-M | H Flood M | odel estimation of haz | ards, damages, and loss of | | | |
| | | functiona | lity. There | must be one record in | flSchool for each record in | | | |
| | | hzSchool | with same | SchoolId unique ident | tifier. | | | |
| Data: | | | | | | | | |
| Feature Class | Field Definition | n | | | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type (Size) | | | | | | | |
| SchoolId | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| | | A | | | It relates this flSchool feature | | | |
| | | | | | class with the associated | | | |
| | | | | | hzSchool in a one-to-one | | | |
| | | | | | relationship. The standard format | | | |
| | | | | | adopted by Hazus is SSxxxxxx, | | | |
| | | | | | where SS is the State name | | | |
| | | | | | abbreviation (upper case) and | | | |
| | | | | | xxxxxx is a sequential number | | | |
| | | | | | from 000001 to 999999. | | | |
| BldgType | Text(15) | F | F | Null, Masonry, | General building type | | | |
| | | | | Concrete, Wood, | | | | |
| | | | | Steel, | | | | |
| | | | | ManufHousing | | | | |
| DesignLevel | Text(1) | F | F | Null | Design level (Pre/Post FIRM) | | | |
| | | | | 0 = Pre-FIRM | | | | |
| | | | | 1 = Post-FIRM | | | | |
| FoundationT | Text(1) | F | F | Null | Foundation type (e.g., slab, pile) | | | |
| ype | | | | 1 = Basement | | | | |
| | | | | 2 = Crawl | | | | |

| | | | | 3 = Fill | |
|--------------|--------------------|----------|------------|---------------------|--------------------------------|
| | | | | 4 = Pier | |
| | | | | 5 = Pile | |
| | | | | 6 = Slab | |
| | | | | 7 = SolidWall | |
| FirstFloorHt | Float(4) Single(4) | F | F | | First-floor height |
| BldgDamage | Text(10) | F | F | | Default building damage |
| FnId | | | | | function id |
| ContDamage | Text(10) | F | F | | Default content damage |
| FnId | | | | | function id |
| FloodProtect | Short(2) | F | F | | Flood protection return period |
| ion | Integer(2) | | | | |
| * T=True; F= | False; U=Uniq | ue; NU=1 | Non-Unique | ; A=Ascending; D=De | scending; UC=Uppercase; |
| LC=Lowercas | se | | | | |

F.6 Transportation Systems: TRN.mdb

F.6.1 Database Overview

The TRN.mdb is an Access personal geodatabase that contains feature *classes* for transportation systems with fields relevant to all hazards; it also contains *tables* with information specific to the EQ and FL Models. Transportation systems include:

Highway segments, bridges, and tunnels

Railway tracks, bridges, and tunnels

Railway facilities

Light rail tracks, bridges, and tunnels

Light rail facilities

Bus stations

Ports

Ferries

Airports and runways

The geographical domain of the database is the state. In that case, there is one TRN.mdb database for each state, each located in the appropriate State folder.

The current version of the Flood Model provides only the level of damage to the bridge network and the subsequent bridge functionality. The Hurricane Model does not provide damage or loss estimates for transportation systems.

During the creation of a study region, for all hazards, transportation system geometries from feature classes are transferred to a geodatabase named TRN.mdb in the Region folder. Feature classes are named with the prefix hz that means that are relevant across all Hazus-MH Models. Highway bridges, for instance, are stored in hzHighwayBridge feature class with fields containing information common to all hazards, such as name and address. This information is transferred to a table with the same name (for highway bridges, hzHighwayBridge) in the SQL Server database in the Region folder.

Hazard specific tables are named with the prefix eq (earthquake) and fl (flood), such as eqHighwayBridge and flHighwayBridge. The information is transferred to tables with the same name in the SQL Server database in the Region folder. There is a one-to-one relationship between hz tables and the corresponding eq and fl tables through a unique identifier.

F.6.2 Identification

TRN.mdb

F.6.3 Database Content

The TRN mdb database includes:

| Name | Туре | Content |
|--------------------|-----------------------------|--|
| hzAirportFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of airports related facilities. Airport transportation systems consist of control towers, runways, terminal buildings, |
| | | parking structures, and fuel, maintenance, and hangar facilities. |
| hzBusFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | bus transportation facilities. Bus transportation systems |
| | | consist of urban stations, fuel facilities, dispatch facilities, and maintenance facilities. |
| hzFerryFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | ferry facilities. Ferry systems consist of waterfront |
| | | structures, passenger terminals, fuel facilities, dispatch |
| | | facilities, and maintenance facilities. |
| hzHighwayBridge | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | highway bridges |
| hzHighwaySegment | ESRI Line Feature | Geometry (line features) and all-hazards information |
| | Class | highways |
| hzHighwayTunnel | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | highway tunnels |
| hzLightRailBridge | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | light rail bridges |
| hzLightRailFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | light rail transportation facilities. Like railways, light rail |
| | | systems are composed of tracks, bridges, tunnels, and |
| | | facilities. The major difference between the two is the |
| | | power supply, with light rail systems operating with DC power substations. |
| hzLightRailSegment | ESRI Line Feature | Geometry (line features) and all-hazards information of |
| | Class | light rail tracks |
| hzLightRailTunnel | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | light rail tunnels |
| hzPortFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | port and harbor facilities |

| hzRailFlty | ESRI Point Feature | Geometry (point features) and all-hazards information of |
|---------------------|--------------------|---|
| | Class | railway transportation facilities |
| hzRailwayBridge | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | railway bridges |
| hzRailwaySegment | ESRI Line Feature | Geometry (line features) and all-hazards information of |
| | Class | railway tracks |
| hzRailwayTunnel | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | railway tunnels |
| hzRunway | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | airport runways |
| eqAirportFlty | ESRI Table | Earthquake specific information for airports facilities |
| eqBusFlty | ESRI Table | Earthquake specific information for bus facilities |
| eqFerryFlty | ESRI Table | Earthquake specific information for ferry facilities |
| eqHighwayBridge | ESRI Table | Earthquake specific information for highway bridges |
| eqHighwaySegment | ESRI Table | Earthquake specific information for highway segments |
| eqHighwayTunnel | ESRI Table | Earthquake specific information for highway tunnels |
| eqLightRailBridge | ESRI Table | Earthquake specific information for light rail bridges |
| eqLightRailFlty | ESRI Table | Earthquake specific information for light rail facilities |
| eqLightRailSegment | ESRI Table | Earthquake specific information for light rail segments |
| eqLightRailTunnel | ESRI Table | Earthquake specific information for light rail tunnels |
| eqPortFlty | ESRI Table | Earthquake specific information for port and harbor |
| | | facilities |
| eqRailFlty | ESRI Table | Earthquake specific information for railway facilities |
| eqRailwayBridge | ESRI Table | Earthquake specific information for railway bridges |
| eqRailwaySegment | ESRI Table | Earthquake specific information for railway segments |
| eqRailwayTunnel | ESRI Table | Earthquake specific information for railway tunnels |
| eqRunway | ESRI Table | Earthquake specific information for airport runways |
| flExposureTransport | ESRI Table | Flood specific table (not used and not required) |
| flHighwayBridge | ESRI Table | Flood specific information for highway bridges |
| flLightRailBridge | ESRI Table | Flood specific information for light rail bridges |
| flRailwayBridge | ESRI Table | Flood specific information for railway bridges |

F.6.3.1 Airports Feature Class: hzAirportFlty

| Identification: | hzAirportFlty | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of airports. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzAirportFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI | Inde | Require | Values | Description |
|------------------|----------|------------|---------|------------------|------------------------------------|
| | Type | x * | d* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Type | | | | |
| | (Size) | | | | |
| AirportFltyId | Text(8) | T, | T, UC | | Unique identifier for each record. |
| | | U, A | | | It relates this hzAirportFlty |
| | | | | | feature class with the associated |
| | | | | | eqAirportFlty table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the State |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFcltyClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. |
| | | NU, | | Table B.12. | Used by Hazus-MH to identify |
| | | A | | | appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact person |
| PhoneNumber | Text(14) | F | F | | Facility contact phone number |
| Use | Text(10) | F | F | | Use |

| Integer(2) | | | (≥ 1500 and ≤ | |
|------------|--|---|-------------------|-------------------------------------|
|) | | | (≥ 1300 and ≤ | |
| | | | 2100) | |
| Double(8 | F | F | | Replacement cost (in thousands) |
|) | | | | |
| Currency | | | | |
| (8) | | | | |
| Long(4) | F | F | | Capacity of cargo that the facility |
| Long | | | | handles (tons/day) |
| Integer(4 | | | | |
|) | | | | |
| Short(2) | F | F | | Capacity of flights per day that |
| Integer(2 | | | | the facility can handle |
|) | | | | |
| Short(2) | F | F | | Number of passengers per day |
| Integer(2 | | | | |
|) | | | | |
| Short(1) | F | F | 0 = No | Availability of backup power |
| Yes/No(| | | 1 = Yes | |
| 1) | | | | |
| Double(8 | F | F | Latitude decimal | Latitude |
|) | | | degrees | |
| Double(8 | | | | |
|) | | | | |
| Double(8 | F | F | Longitude decimal | Longitude |
|) | | | degrees | |
| Double(8 | | | | |
|) | | | | |
| Text(40) | F | F | | Comments |
| | (8) Long(4) Long Integer(4)) Short(2) Integer(2) Integer(2) Short(1) Yes/No(1) Double(8)) Double(8)) Double(8)) Text(40) | (8) Long(4) F Long Integer(4) Short(2) F Integer(2) Short(1) F Yes/No(1) Double(8 F) Double(8 F) Double(8 F) Text(40) F | (8) | (8) |

F.6.3.2 Earthquake Specific Airports Table: eqAirportFlty

| Identification: | eqAirportFlty |
|-----------------|---|
| Type: | ESRI Table |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of airports. During the creation of a study region, the table content is transferred to another table with the same name (eqAirportFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqAirportFlty for each record in hzAirportFlty with same AirportFltyId unique identifier |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI | Ind | Require | Values | Description |
|----------------|-----------|-----|---------|--------------------|--|
| | Туре | ex* | d* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Туре | | | | |
| | (Size) | | | | |
| AirportFltyId | Text(8) | Т, | T, UC | | Unique identifier for each record. |
| Amporti ityid | 10.1(0) | U, | 1,00 | | It relates this eqAirportFlty |
| | | A | | | feature class with the associated |
| | | Λ | | | hzAirportFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | |
| | | | | | adopted by Hazus is SSxxxxxx, where SS is the State name |
| | | | | | |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number from 000001 to 999999. |
| | | | | | |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for description of |
| | | | | | available model building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | | detailed information about |
| | | | | LC = Low-Code | design levels. |
| | | | | PC = Pre-Code | |
| | | | | HS = Special High- | |
| | | • | | • | |

| | | | | Code MS = Special Moderate-Code LS = Special Low- Code | |
|------------------|---------------------------------|-----------|---------------|--|---|
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines structure location conditions. This is based on shear wave velocity. See Appendix B, Table B.1, for details |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2 Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2 Ground Failure) for liquefaction discussion. |
| * T=True; F=Fals | Float(4) Single(4) e; U=Unique; | F NU=N | F Ion-Unique | Null ≥ 0 ; A=Ascending; D=De | Water table depth in feet. Values must be greater than 0. Range: 0 - 300 meters scending; UC=Uppercase; |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.3 Bus Facilities Feature Class: hzBusFlty

| Identification: | hzBusFlty | | | | | |
|--------------------------------|---|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of bus transportation facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzBusFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access | | | | |
| | Type (Size) | | | | |
| BusFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this hzBusFlty feature |
| | | | | | class with the associated |
| | | | | | eqBusFlty table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFcltyCl | Text(5) | T, | T, UC | See Appendix B, | This field is used to indicate the |
| ass | | NU, | | Table B.9. | facility classification. It is used |
| | | A | | | by Hazus-MH to identify the |
| | | | | | appropriate damage curve for |
| | | | | | assessing loss estimations |
| | | | | | produced by the EQ Model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | | | Facility name |
| Address | Text(40) | F | | | Physical address |
| City | Text(40) | F | | | City |
| Statea | Text(2) | F | | | USPS state abbreviation |
| Zipcode | Text(10) | F | | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | | | Facility owner name |
| Contact | Text(40) | F | | | Facility contact person |
| PhoneNumber | Text(14) | F | | | Facility contact phone number |
| Use | Text(10) | F | | | Use |
| YearBuilt | Short(2) | F | | Null or | Year structure was built |

| | Integer(2) | | | (≥ 1500 and ≤ | |
|-------------|------------|---|---|-------------------|----------------------------------|
| | | | | 2100) | |
| Cost | Double(8) | F | | | Replacement cost (in thousands). |
| | Currency(8 | | | | This field is for informational |
| |) | | | | purposes and has no bearing on |
| | | | | | any computation. |
| BackupPower | Short(1) | F | | 0 = No | Availability of backup power |
| | Yes/No(1) | | | 1 = Yes | |
| Traffic | Long(4) | F | | | Daily traffic (buses/day). This |
| | Long | | | | field is for informational |
| | Integer(4) | | | | purposes and has no bearing on |
| | | | | | any computation. |
| Latitude | Double(8) | F | Y | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | Y | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.4 Earthquake Specific Bus Facilities Table: eqBusFlty

| Identification: | eqBusFlty | | | | | |
|--------------------------------|---|--|--|--|--|--|
| Type: | ESRI Table | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of bus transportation facilities. During the creation of a study region, the table content is transferred to another table with the same name (eqBusFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqBusFlty for each record in hzBusFlty with same BusFltyId unique identifier. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|--------------------|--|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| BusFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>eqBusFlty</i> feature |
| | | | | | class with the associated |
| | | | | | hzBusFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for description of |
| | | | | | available model building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | | |
| | | | | MS = Special | |

| | | | | Moderate-Code | |
|------------|-----------|---|-------|-------------------|------------------------------------|
| | | | | LS = Special Low- | |
| | | | | Code | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines |
| | | | | | conditions of the structure |
| | | | | | location. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2 Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | - 300 meters |
| | | | | 1 | I . |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.5 Ferry Facilities Feature Class: hzFerryFlty

| Identification: | hzFerryFlty | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of ferry transportation system facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzFerryFlty) in the SQL Server database in the Region folder. Data are subsequently used for | | | | |
| | Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|------------------|--|
| | (Size) | * | d* | | |
| | Access | | | | |
| | Type (Size) | | | | |
| FerryFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>hzFerryFlty</i> feature |
| | | | | | class with the associated |
| | | | | | eqFerryFlty table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx where SS is the State |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFcltyCl | Text(5) | T, | T, UC | See Appendix B, | This field is used to indicate the |
| ass | | NU, | | Table B-11. | facility classification. It is used |
| | | A | | | by Hazus-MH to identify the |
| | | | | | appropriate damage curve for |
| | | | | | assessing the loss estimations |
| | | | | | produced by the EQ model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact person name |
| PhoneNumber | Text(14) | F | F | | Contact person phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |

| | Integer(2) | | | (≥ 1500 and ≤ | |
|-------------|------------|---|---|-------------------|----------------------------------|
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands). |
| | Currency(8 | | | | This field is for informational |
| |) | | | | purposes and has no bearing on |
| | | | | | any computation. |
| BackupPower | Short(1) | F | F | 0=No | Availability of backup power |
| | Yes/No(1) | | | 1=Yes | |
| Traffic | Long(4) | F | F | | Daily traffic (ferry/day). This |
| | Long | | | | field is for informational |
| | Integer(4) | | | | purposes and has no bearing on |
| | | | | | any computation |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique, NU=Non-Unique, A=Ascending, D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.6 Earthquake Specific Ferry Facilities Table: eqFerryFlty

| Identification: | eqFerryFlty | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of ferry transportation system facilities. During the creation of a study region, is transferred to a table with the same name (eqFerryFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqFerryFlty for each record in hzFerryFlty with same FerryFltyId unique identifier | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|--------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| FerryFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>eq</i> Ferry <i>Flty</i> feature |
| | | | | | class with the associated |
| | | | | | hzFerryFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the State name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for a complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| Anchor | Short(1) | F | F | $0 = N_0$ | Indicates whether the facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |

| ype | | | | | This field is in the table for future extensibility of the Earthquake Model, but does not |
|--------------|---------------|------------|------------|---------------------|---|
| | | | | | need to be populated at this time. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions of the structure |
| | | | | | location. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | $Null \ge 0$ | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True: F= | False: U=Unia | ue· NI I=N | Jon-Unique | · A=Ascending: D=De | escending: IIC=IInnercase: |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.7 Highway Bridges Feature Class: hzHighwayBridge

| Identification: | hzHighwayBridge | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of highway bridges. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzHighwayBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------|--|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| HighwayBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| dgeId | | A | 1,00 | | It relates this <i>hzHighwayBridge</i> |
| uge1u | | | | | feature class with the associated |
| | | | | | eqHighwayBridge and |
| | | | | | fl <i>HighwayBridge</i> tables. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| BridgeClass | Text(5) | Т, | T, UC | See Appendix B, | Indicates bridge classification. It |
| DridgeClass | TCAU(3) | NU, | 1,00 | Table B.6. | is used by Hazus-MH to identify |
| | | A | | Tuble B.o. | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ model. |
| T 4 | T(11) | T | T | 11 4:-:4 641 - | |
| Tract | Text(11) | T, | 1 | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| BridgeType | Text(8) | F | F | | Structural types based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field is |
| | | | | | for informational purposes and |
| | | | | | has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| NumSpans | Short(1) | F | F | | Number of spans |

| | Byte(1) | | | | |
|-------------------|-------------------------|---|---|-----------------------------------|--|
| Length | Long(4) Long Integer(4) | F | F | | Bridge length (in meters) |
| MaxSpanLen gth | Double(8) | F | F | | Maximum span length (in meters) |
| SkewAngle | Double(8) | F | F | | Skew angle (in degrees) |
| SeatLength | Double(8) Double(8) | F | F | | Seat length (in meters) |
| SeatWidth | Double(8) Double(8) | F | F | | Seat width (in meters) |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year built |
| YearRemode led | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year remodeled |
| PierType | Text(10) | F | F | | Pier type based on FHWA classification scheme in the source database |
| FoundationT ype | Text(1) | F | F | | Foundation type based on FHWA classification scheme in the source database. |
| ScourIndex | Text(1) | F | F | | This field is significant for flood analysis, and is the second part of the bridge specific occupancy in the bridge damage function tables ² . This field is not used in the EQ or HU Model |

² If the bridge is considered inundated then, the scour index is checked. If the scour index is in (4, 5, 6, 7, 8, 9, T, N) then no analysis is performed as the engineering study has determined that the bridge will not be subjected to scour. If the scour index is in (U, 1, 2, 3) then an analysis must be performed.

| | | | | | calculations. |
|--------------|-------------------------|---|---|---------------------------|---|
| Traffic | Long(4) Long Integer(4) | F | F | | Average daily traffic (cars per day) |
| TrafficIndex | Text(2) | F | F | | Traffic index |
| Condition | Text(3) | F | F | | General condition rating based on the FHWA classification scheme in the source database |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| Latitude | Double(8) Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.6.3.8 Earthquake Specific Highway Bridge Table: eqHighwayBridge

| Identification: | eqHighwayBridge | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of highway bridges. During the creation of a study region, the table content is transferred to another table with the same name (eqHighwayBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of | | | | |
| Data: | functionality. There must be one record in eqHighwayBridge for each record in hzHighwayBridge with same HighwayBridgeId unique identifier. | | | | |
| Dum. | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|------------|-------------|-------|---------|------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| HighwayBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| dgeId | Text(0) | A A | 1,00 | | It relates this <i>eq</i> HighwayBridge |
| agera | | 11 | | | feature class with the associated |
| | | | | | hzHighwayBridge in a one-to- |
| | | | | | one relationship. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| - 11- | | | | | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | -500(1) | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null or ≥ 0 | Water table depth in feet. Values |
| 1 | Single(4) | | | | must be greater than 0. Range: 0 |
| | Siligio(4) | | | | - 300 meters |
| | | | | | |

| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase |
|---|
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F.6.3.9 Flood Specific Highway Bridge Table: flHighwayBridge

| Identification | 1: | flHighwayBridge | | | | | | |
|----------------|----------------|---|--------------|------------------------|---|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs 1 | to TRN.md | b. Provides Floo | od Model specific information of highway | | | |
| | | bridges. During the creation of a study region, the content of the table is | | | | | | |
| | | transferre | ed to anothe | er table with the | same name (flHighwayBridge) in the | | | |
| | | SQL Server database in the Region folder. Data are subsequently used for | | | | | | |
| | | Hazus-M | H Flood M | odel estimation | of hazards, damages, and loss of | | | |
| | | functiona | lity. There | must be one rec | ord in flHighwayBridge for each record in | | | |
| | | hzHighw | ayBridge w | rith same Highw | ayBridgeId unique identifier. | | | |
| Data: | | | | | | | | |
| | | | Feature C | Class Field Definition | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type | | | | | | | |
| | (Size) | | | | | | | |
| HighwayBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| dgeId | | A | | | It relates this flHighwayBridge | | | |
| | | | | | feature class with the associated | | | |
| | | | | | hzHighwayBridge in a one-to- | | | |
| | | | | | one relationship. The standard | | | |
| | | | | | format adopted by Hazus is | | | |
| | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | name abbreviation (upper case) | | | |
| | | | | | and xxxxxx is a sequential | | | |
| | | | | | number from 000001 to 999999. | | | |
| Elevation | Double(8) | F | F | | Elevation of bridge deck | | | |
| | Double(8) | | | | | | | |
| * T=True; F= | False; U=Uniqu | ue; NU=N | lon-Unique | ; A=Ascending; | D=Descending; UC=Uppercase; | | | |
| LC=Lowerca | se | | | | | | | |

F.6.3.10 Highway Roads Feature Class: hzHighwaySegment

| Identification: | hzHighwaySegment | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Line Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of highway roads. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Fields information is transferred to a table with the same name (hzHighwaySegment) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Ac (Si | ecess Type ize) xt(8) | * T, U, A | T, UC | | Unique identifier for each |
|------------------|-----------------------------|-----------|-------|-----------------|----------------------------------|
| (Si | ize) | | T, UC | | Unique identifier for each |
| (Si | ize) | | T, UC | | Unique identifier for each |
| HighwaySegId Te. | xt(8) | | T, UC | | Unique identifier for each |
| | | | , | | 1 |
| | | | | | record. It relates this |
| | | | | | hzHighwaySegment feature |
| | | | | | class with the associated |
| | | | | | eqHighwaySegment table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS |
| | | | | | is the State name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| SegmentClass Te | xt(5) | T, | T, UC | See Appendix | Indicates highway road |
| | | NU, | | B, Table B.6. | classification. It is used by |
| | | A | | | Hazus-MH to identify the |
| | | | | | appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | produced by the EQ model. |
| CountyFips Te | xt(5) | T, | T | Five-digit FIPS | Five-digit FIPS county code. |
| | | NU, | | county code | First two digits are the state |
| | | A | | | FIPS; the remaining three digits |
| | | | | | are the county code. |
| Name Te | xt(40) | F | F | | Facility name |
| Owner Te | xt(25) | F | F | | Facility owner name |
| Length Sh | ort(2) | F | F | | Highway segment length (in |
| Int | teger(2) | | | | kilometers) |
| Traffic Lo | ong(4) | F | F | | Average daily traffic (cars per |
| Lo | ong | | | | day) |
| Int | teger(4) | | | | |
| Cost Do | ouble(8) | F | F | | Replacement cost (in |
| Cu | arrency(8) | | | | thousands) |

| NumLanes | Short(2) | F | F | | Number of lanes |
|-----------|------------|---|---|-----------------|---------------------------------|
| | Integer(2) | | | | |
| Pavement | Text(10) | F | F | | Pavement type based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field |
| | | | | | is for informational purposes |
| | | | | | and has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Highway segment width (in |
| | Double(8) | | | | meters) |
| Capacity | Long(4) | F | F | | Daily capacity (cars/day) |
| | Long | | | | |
| | Integer(4) | | | | |
| Latitude | Double(8) | F | F | Latitude | Latitude |
| | Double(8) | | | decimal degrees | |
| Longitude | Double(8) | F | F | Longitude | Longitude |
| | Double(8) | | | decimal degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.6.3.11 Earthquake Specific Highway Roads Table: eqHighwaySegment

| Identification: | | eqHighwaySegment | | | | | | |
|-----------------|----------------|--|--------------|-----------------------|------------------------------------|--|--|--|
| Type: | | ESRI Tab | ole | | | | | |
| Purpose: | | Belongs to TRN.mdb. Provides Earthquake Model specific information of highway roads. During the creation of a study region, the table content is | | | | | | |
| | | transferred to a table with the same name (eqHighwaySegment) in the SQL | | | | | | |
| | | Server da | tabase in th | e Region folder. Data | are subsequently used for Hazus- | | | |
| | | MH EQ N | Model estim | ation of hazards, dam | ages, and loss of functionality. | | | |
| | | There mu | st be one re | cord in eqHighwaySe | gment for each record in | | | |
| | | hzHighwa | aySegment | with same HighwaySe | egId unique identifier. | | | |
| Data: | | | | | | | | |
| | | | Feature C | lass Field Definition | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type | | | | | | | |
| | (Size) | | | | | | | |
| HighwaySeg | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| Id | | A | | | It relates this | | | |
| | | | | | eqHighwaySegment feature class | | | |
| | | | | | with the associated | | | |
| | | | | | hzHighwaySegment in a one-to- | | | |
| | | | | | one relationship. The standard | | | |
| | | | | | format adopted by Hazus is | | | |
| | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | name abbreviation (upper case) | | | |
| | | | | | and xxxxxx is a sequential | | | |
| | | | | | number from 000001 to 999999. | | | |
| * T=True; F= | False; U=Uniqu | ıe; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; | | | |
| LC=Lowercas | se | | | | | | | |

F.6.3.12 Highway Tunnel Feature Class: hzHighwayTunnel

| Identification: | hzHighwayTunnel | | | | | |
|--------------------------------|--|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of highway tunnels. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzHighwayTunnel) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------|--|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| HighwayTun | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nelId | | A | | | It relates this <i>hzHighwayTunnel</i> |
| | | | | | feature class with the associated |
| | | | | | eqHighwayTunnel table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx where SS is |
| | | | | | the State name abbreviation |
| | | | | | (Upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| TunnelClass | Text(5) | T, | T, UC | See Appendix 6, | Indicates tunnel classification. It |
| | | NU, | | Table B.6. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| Туре | Text(5) | F | F | | Structural types based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field is |
| | | | | | for informational purposes and |
| | | | | | has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| Length | Long(4) | F | F | | Bridge length (in meters) |
| | Long | | | | |

| hort(2) | F | F | Null or | Year structure was built |
|-------------|---|--|--|--|
| nteger(2) | | | | |
| | | | (≥ 1500 and ≤ | |
| | | | 2100) | |
| ong(4) | F | F | | Average daily traffic (cars per |
| ong | | | | day) |
| nteger(4) | | | | |
| Pouble(8) | F | F | | Replacement cost (in thousands) |
| Currency(8) | | | | |
| Pouble(8) | F | F | Latitude decimal | Latitude |
| Pouble(8) | | | degrees | |
| Pouble(8) | F | F | Longitude decimal | Longitude |
| Pouble(8) | | | degrees | |
| ext(40) | F | F | | Comments |
| | ong integer(4) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) | ong integer(4) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) F ouble(8) F ouble(8) F ouble(8) F | ong integer(4) ouble(8) F F urrency(8) ouble(8) F F ouble(8) F F ouble(8) F F ouble(8) F F | ong integer(4) ouble(8) F F urrency(8) ouble(8) F F couble(8) F couble(8) F F couble(8) |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.13 Earthquake Specific Highway Tunnel Table: eqHighwayTunnel

| Identification: | eqHighwayTunnel | | | | | | | |
|-----------------|--|--|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of highway tunnels. During the creation of a study region, the table content is transferred to a table with the same name (eqHighwayTunnel) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqHighwayTunnel for each record in | | | | | | | |
| | hzHighwayTunnel with same HighwayTunnelId unique identifier. | | | | | | | |
| Data: | | | | | | | | |
| | Feature Class Field Definition | | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-----------------|---------|------------|-------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| HighwayTun | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nelId | | A | | | It relates this <i>eq</i> HighwayTunnel |
| | | | | | feature class with the associated |
| | | | | | hzHighwayTunnel in a one-to- |
| | | | | | one relationship. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| SoilType | Text(1) | N | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines |
| | | | | | structure location conditions. |
| | | | | | This is based on shear wave |
| | | | | | velocity. See Appendix B, Table |
| | | | | | B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null≥0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F=I | False; U=Unique | e; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; |

LC=Lowercase

F.6.3.14 Light Rail Bridges Feature Class: hzLightRailBridge

| Identification: | hzLightRailBridge | | | | | | |
|-----------------|--|--|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of light rail bridges. During the creation of a study region, for all hazards, geometries are transfer to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzLightRailBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | | |
| Data: | | | | | | | |
| | Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|-------------|-------|---------|------------------|--|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| LightRailBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| dgeId | | A | | | It relates this <i>hzLightRailBridge</i> |
| | | | | | feature class with the associated |
| | | | | | eqLightRailBridge and |
| | | | | | flLightRailBridge tables. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the State name abbreviation |
| | | | | | (Upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| BridgeClass | Text(5) | T, | T, UC | See Appendix B, | Indicates bridge classification. It |
| | | NU, | | Table B.8. | is used by Hazus-MH to identify |
| | | A | | | appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | produced by the EQ model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| BridgeType | Text(8) | F | F | | Structural types based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field is |
| | | | | | for informational purposes and |
| | | | | | has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| NumSpans | Short(1) | F | F | | Number of spans |

| | Byte(1) | | | | |
|-------------------|-------------------------|---|---|-----------------------------------|--|
| Length | Long(4) Long Integer(4) | F | F | | Bridge length (in meters) |
| MaxSpanLen gth | Double(8) | F | F | | Maximum span length (in meters) |
| SkewAngle | Double(8) | F | F | | Skew angle (in degrees) |
| SeatLength | Double(8) Double(8) | F | F | | Seat length (in meters) |
| SeatWidth | Double(8) | F | F | | Seat width (in meters) |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year built |
| YearRemode led | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year remodeled |
| PierType | Text(10) | F | F | | Pier type based on FHWA classification scheme in the source database |
| FoundationT ype | Text(1) | F | F | | Foundation type based on FHWA classification scheme in the source database |
| ScourIndex | Text(1) | F | F | | This field is significant to flood analysis and is the second part of the bridge specific occupancy in the bridge damage function tables ³ . This field is not used in the |

³ If the bridge is considered inundated then, the scour index is checked. If the scour index is in (4, 5, 6, 7, 8, 9, T, N) then no analysis is performed as the engineering study has determined that the bridge will not be subjected to scour. If the scour index is in (U, 1, 2, 3) then an analysis must be performed.

| | | | | | earthquake or hurricane model calculations. |
|--------------|-------------------------|---|---|---------------------------|---|
| Traffic | Long(4) Long Integer(4) | F | F | | Average daily traffic (trains/day) |
| TrafficIndex | Text(2) | F | F | | Traffic index |
| Condition | Text(3) | F | F | | General condition rating based on FHWA classification scheme in the source database |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| Latitude | Double(8) Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.15 Earthquake Specific Light Rail Bridge Table: eqLightRailBridge

| Identification: | eqLightRailBridge |
|-----------------|---|
| Type: | ESRI Table |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of |
| | light rail bridges. During the creation of a study region, the table content is |
| | transferred to another table with the same name (eqLightRailBridge) in the |
| | SQL Server database in the Region folder. Data are subsequently used for |
| | Hazus-MH EQ Model estimation of hazards, damages, and loss of |
| | functionality. There must be one record in eqLightRailBridge for each record |
| | in hzLightRailBridge with same LightRailBridgeId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|-------------|-------|---------|-----------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| LightRailBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| dgeId | Text(0) | A | 1,00 | | It relates this <i>eq</i> LightRailBridge |
| ageia | | 71 | | | feature class with the associated |
| | | | | | hz in a one-to-one relationship. |
| | | | | | The standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 to 999999. |
| | | | | | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | , , | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | Dyw(1) | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | $Null \ge 0$ | Water table depth in feet. Values |
| , atorbopin | , , | | 1 | | must be greater than 0. Range: 0 |
| | Single(4) | | | | - 300 meters. |
| | | | | | 500 meters. |

| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase | |
|---|--|
| | |
| | |
| | |
| | |
| | |
| | |
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| | |
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| | |
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| | |

F.6.3.16 Flood Specific Light Rail Bridge Table: flLightRailBridge

| Identification: | | flLightRailBridge | | | | | |
|-----------------|---------------------|---|-------------|-----------------------|------------------------------------|--|--|
| Type: | | ESRI Table | | | | | |
| Purpose: | | Belongs to TRN.mdb. Provides Flood Model specific information of light rail bridges. During the creation of a study region, the table content is transferred to a table with the same name (flLightRailBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flLightRailBridge for each record in hzLightRailBridge with same | | | | | |
| D. | | LightRail | Bridgeld ui | nique identifie | r. | | |
| Data: | | | - | | | | |
| | T | 1 | | lass Field Definition | | | |
| Name | ESRI Type (Size) | Index * | Require d* | Values | Description | | |
| | Access Type (Size) | | | | | | |
| LightRailBri | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | |
| dgeId | | A | | | It relates this flLightRailBridge | | |
| | | | | | feature class with the associated | | |
| | | | | | hzLightRailBridge in a one-to- | | |
| | | | | | one relationship. The standard | | |
| | | | | | format adopted by Hazus is | | |
| | | | | | SSxxxxxx, where SS is the state | | |
| | | | | | name abbreviation (upper case) | | |
| | | | | | and xxxxxx is a sequential | | |
| | | | | | number from 000001 to 999999. | | |
| Elevation | Double(8) | F | F | | Elevation of bridge deck | | |
| | Double(8) | | | | | | |
| * T=True; F= | False; U=Uniq | ue; NU=N | Ion-Unique | A=Ascending | g; D=Descending; UC=Uppercase; | | |
| LC=Lowercas | se | | | | | | |

F.6.3.17 Light Rail Facility Feature Class: hzLightRailFlty

| Identification: | hzLightRailFlty |
|-----------------|---|
| Type: | ESRI Point Feature Class |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of light rail facilities. During the creation of a study region, for all hazards, geometries are transfer to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzLightRailFlty) in the SQL Server |
| | database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI | Inde | Require | Values | Description |
|------------------|----------|------------|---------|------------------|--|
| | Туре | x * | d* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Туре | | | | |
| | (Size) | | | | |
| LightRailFltyId | Text(8) | Т, | T, UC | | Unique identifier for each record. |
| | | U, A | , | | It relates this <i>hzLightRailFlty</i> |
| | | | | | feature class with the associated |
| | | | | | eqLightRailFlty table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| TranspFcltyClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. It |
| | | NU, | | Table B.8. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Owner name of the facility |
| Contact | Text(40) | F | F | | Contact name of person for the |
| | | | | | facility |
| PhoneNumber | Text(14) | F | F | | Phone number to contact the |

| | | | | facility |
|-----------|---|------------------------------|--|--|
| Text(10) | F | F | | Use |
| Short(2) | F | F | Null or | Year structure was built |
| Integer(2 | | | (≥ 1500 and ≤ | |
|) | | | 2100) | |
| Short(1) | F | F | | Number of stories |
| Byte(1) | | | | |
| Double(8 | F | F | | Replacement cost (in thousands) |
|) | | | | |
| Currency | | | | |
| (8) | | | | |
| Short(1) | F | F | $0 = N_0$ | Availability of backup power |
| Yes/No(| | | 1=Yes | |
| 1) | | | | |
| Long(4) | F | F | | Average daily traffic (trains/day) |
| Long | | | | |
| Integer(4 | | | | |
|) | | | | |
| Double(8 | F | F | Latitude decimal | Latitude |
|) | | | degrees | |
| Double(8 | | | | |
|) | | | | |
| Double(8 | F | F | Longitude decimal | Longitude |
|) | | | degrees | |
| Double(8 | | | | |
|) | | | | |
| | | • | 1 | 1 |
| | Short(2) Integer(2) Short(1) Byte(1) Double(8) Currency (8) Short(1) Yes/No(1) Long(4) Long Integer(4) Double(8) Double(8) Double(8 | Short(2) F Integer(2) | Short(2) F F F Integer(2 Short(1) F F F Byte(1) Double(8 F F Currency (8) Short(1) F F F Yes/No(| Short(2) F F Null or Integer(2) (≥ 1500 and ≤ 2100) Short(1) F F Byte(1) F F Double(8) F F Currency (8) 0 = No Yes/No(1 = Yes 1) Long(4) F Long Integer(4) F Double(8) F F Latitude decimal degrees Double(8) F F Longitude decimal degrees Double(8) F F Longitude decimal degrees |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.18 Earthquake Specific Light Rail Facilities Table: eqLightRailFlty

| Identification: | eqLightRailFlty |
|-----------------|--|
| Type: | ESRI Table |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of |
| | light rail facilities. During the creation of a study region, the table content is |
| | transferred to a table with the same name (eqLightRailFlty) in the SQL Server |
| | database in the Region folder. Data are subsequently used for Hazus-MH EQ |
| | Model estimation of hazards, damages, and loss of functionality. There must |
| | be one record in eqLightRailFlty for each record in hzLightRailFlty with same |
| | LightRailFltyId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|-------------|-------|---------|--------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| LightRailFlt | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| yId | Tent(o) | A | 1,00 | | It relates this eqLightRailFlty |
| y Tu | | 11 | | | feature class with the associated |
| | | | | | hzLightRailFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether the facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | Earthquake Model, but does not |
| | | | | | need to be populated at this time. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | Code | |

| | T | | | MS = Special | | | |
|--------------|--|---|-------|----------------------------|--|--|--|
| | | | | Moderate-Code | | | |
| | | | | LS = Special Low- | | | |
| | | | | Code | | | |
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) | | |
| | | | | Table B.1. | soil classification that defines the | | |
| | | | | | conditions where the structure is | | |
| | | | | | located. This is based on shear | | |
| | | | | | wave velocity. See Appendix B, | | |
| | | | | | Table B.1, of the Earthquake | | |
| | | | | | User Manual for details. | | |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction | | |
| | Byte(1) | | | | susceptibility of the facility | | |
| | | | | | location. See Earthquake | | |
| | | | | | Technical Manual (Section 4.2, | | |
| | | | | | Ground Failure) for liquefaction | | |
| | | | | | discussion. | | |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility | | |
| | Byte(1) | | | | of the facility location. See | | |
| | | | | | Earthquake Technical Manual | | |
| | | | | | (Section 4.2, Ground Failure) for | | |
| | | | | | liquefaction discussion. | | |
| WaterDepth | Float(4) | F | F | Null≥0 | Water table depth in feet. Values | | |
| | Single(4) | | | | must be greater than 0. Range: 0 | | |
| | | | | | – 300 meters. | | |
| * T=True; F= | * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.19 Light Rail Tracks Feature Class: hzLightRailSegment

| Identification: | hzLightRailSegment | | | |
|--------------------------------|---|--|--|--|
| Type: | ESRI Line Feature Class | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of light rail tracks. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzLightRailSegment) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI | Index | Require | Values | Description |
|----------------|------------|-------|---------|-----------------|------------------------------------|
| | Туре | * | d* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Type | | | | |
| | (Size) | | | | |
| | | | | | |
| LightRailSegId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | Α | | | It relates this |
| | | | | | hzLightRailSegment feature class |
| | | | | | with the associated |
| | | | | | eqLightRailSegment table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| SegmentClass | Text(5) | Т, | T, UC | See Appendix B, | Indicates highway road |
| Segmenterass | Text(3) | NU, | 1,00 | Table B.8. | classification. It is used by |
| | | A A | | Tuole B.o. | Hazus-MH to identify the |
| | | Α | | | appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | |
| | | | | | produced by the EQ Model. |
| CountyFips | Text(5) | Т, | T | Five-digit FIPS | Five-digit FIPS county code. |
| | | NU, | | county code | First two digits are the state |
| | | A | | | FIPS; the remaining three digits |
| | | | | | are the county code. |
| Name | Text(40) | F | F | | Track segment name |
| Owner | Text(25) | F | F | | Owner of track segment |
| Length | Short(2) | F | F | | Section length (in kms) |
| | Integer(2) | | | | |
| NumTracks | Short(1) | F | F | | Number of tracks |
| | Byte(1) | | | | |
| Traffic | Long(4) | F | F | | Average daily traffic (trains/day) |

| | Long | | | | |
|-----------|------------|---|---|-------------------|---------------------------------|
| | Integer(4) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(| | | | |
| | 8) | | | | |
| Comment | Text(40) | F | F | | Comments |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.20 Earthquake Specific Light Rail Tracks Table: eqLightRailSegment

| Identification: eqLightRailSegment | | | | | | | | |
|------------------------------------|--------------------|--|---------------|-------------------------|------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to TRN.mdb. Provides Earthquake Model specific information of | | | | | | |
| | | highway roads. During the creation of a study region, the table content is | | | | | | |
| | | transferre | d to another | r table with the same n | name (eqLightRailSegment) in the | | | |
| | | SQL Serv | er database | in the Region folder. | Data are subsequently used for | | | |
| | | Hazus-M | H EQ Mode | el estimation of hazard | s, damages, and loss of | | | |
| | | functiona | lity. There i | must be one record in | eqLightRailSegment for each | | | |
| | | record in | hzLightRai | lSegment with same L | ightRailSegId unique identifier. | | | |
| Data: | | | | | | | | |
| | | | Feature C | lass Field Definition | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type | | | | | | | |
| | (Size) | | | | | | | |
| LightRailSeg | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| Id | | A | | | It relates this | | | |
| | | | | | eqLightRailSegment feature | | | |
| | | | | | class with the associated | | | |
| | | | | | hzLightRailSegment in a one-to- | | | |
| | | | | | one relationship. The standard | | | |
| | | | | | format adopted by Hazus is | | | |
| | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | name abbreviation (upper case) | | | |
| | | | | | and xxxxxx is a sequential | | | |
| | | | | | number from 000001 to 999999. | | | |
| * T=True; F= | I False; U=Uniq | ue; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; | | | |
| LC=Lowercas | se | | | | | | | |

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F.3.21 Light Rail Tunnel Feature Class: hzLightRailTunnel

| Identification: | hzLightRailTunnel | | | |
|--------------------------------|--|--|--|--|
| Type: | ESRI Point Feature Class | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of light rail tunnels. During the creation of a study region, for all hazards, geometries are transfer to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzLightRailTunnel) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| T. L.D. HE | ` ′ | m 11 | T. 110 | | TT : :1 :10 0 1 |
| LightRailTu | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nnelId | | A | | | It relates this hzLightRailTunnel |
| | | | | | feature class with the associated |
| | | | | | eqLightRailTunnel table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| TunnelClass | Text(5) | Т, | T, UC | See Appendix B, | Indicates tunnel classification. It |
| | | NU, | | Table B.8. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model. |
| Tract | Text(11) | Т, | T | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| Туре | Text(5) | F | F | | Structural types based on FHWA |
| | | | | | classification scheme in the |
| | | | | | source database. This field is for |
| | | | | | informational purposes and has |
| | | | | | no bearing on the computation of |
| | | | | | results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| Length | Long(4) | F | F | | Bridge length (in meters) |
| | Long | | | | |

| | Integer(4) | | | | |
|-----------|-------------|---|---|-------------------|------------------------------------|
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| Traffic | Long(4) | F | F | | Average daily traffic (trains/day) |
| | Long | | | | |
| | Integer(4) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.6.3.22 Earthquake Specific Light Rail Tunnel Table: eqLightRailTunnel

| Identification: | eqLightRailTunnel | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of | | | | |
| | light rail tunnels. During the creation of a study region, the table content is | | | | |
| | transferred to a table with the same name (eqLightRailTunnel) in the SQL | | | | |
| | Server database in the Region folder. Data are subsequently used for Hazus- | | | | |
| | MH EQ Model estimation of hazards, damages, and loss of functionality. | | | | |
| | There must be one record in eqLightRailTunnel for each record in | | | | |
| | hzLightRailTunnel with same LightRailTunnelId unique identifier. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-----------------|---------|------------|-------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| LightRailTu | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nnelId | | A | · | | It relates this <i>eq</i> LightRailTunnel |
| | | | | | feature class with the associated |
| | | | | | hzLightRailTunnel in a one-to- |
| | | | | | one relationship. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1 for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | $Null \ge 0$ | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F=I | False; U=Unique | e; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; |

LC=Lowercase

F.6.3.23 Port and Harbor Facilities Feature Class: hzPortFlty

| Identification: | hzPortFlty | | | |
|--------------------------------|--|--|--|--|
| Type: | ESRI Point Feature Class | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of ports and harbors facilities. | | | |
| | During the creation of a study region, for all hazards, geometries are | | | |
| | transferred to a geodatabase named TRN.mdb in the Region folder. Field | | | |
| | information is transferred to a table with the same name (hzPortFlty) in the | | | |
| | SQL Server database in the Region folder. Data are subsequently used for | | | |
| | Hazus-MH estimation of hazards, damages, and loss of functionality, as well | | | |
| | as mapping. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Ind | Requir | Values | Description |
|-----------------|-------------|-----|--------|------------------|---|
| | (Size) | ex* | ed* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| PortFltyId | Text(8) | Т, | T, UC | | Unique identifier for each record. |
| | | U, | | | It relates this <i>hzPortFlty</i> feature |
| | | A | | | class with the associated |
| | | | | | eqPortFlty table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFltyClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. It |
| | | NU | | table B-10 | is used by Hazus-MH to identify |
| | | , A | | | the appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | produced by the EQ model. |
| Tract | Text(11) | Т, | T | 11 digits of the | 2000 US Census tract number |
| | | NU | | Census tract | |
| | | , A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact name |
| PhoneNumber | Text(14) | F | F | | Facility contact phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |

| | | | | 2100) | |
|-------------|-------------|---|-------------|-------------------|---------------------------------|
| BackupPower | Short(1) | F | F | $0 = N_0$ | Availability of backup power |
| | Yes/No(1) | | | 1 = Yes | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| Capacity | Long(4) | F | F | | Capacity (tons/day) |
| | Long | | | | |
| | Integer(4) | | | | |
| NumBerths | Short(2) | F | F | | Number of berths |
| | Integer(2) | | | | |
| NumCranes | Short(2) | F | F | | Number of cranes |
| | Integer(2) | | | | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |
| | | 1 | | 1 | 1 |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.24 Earthquake Specific Care Facilities Table: eqPortFlty

| Identification: | eqPortFlty | | | |
|--------------------------------|--|--|--|--|
| Type: | ESRI Table | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of ports and harbors facilities. During the creation of a study region, the table content is transferred to another table with the same name (eqPortFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqPortFlty for each record in hzPortFlty with same PortFltyId unique identifier. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|----------|--------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| PortFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>eqPortFlty</i> feature |
| | | | | | class with the associated |
| | | | | | hzPortFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for description of |
| | | | | | available model building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| ype | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time. |
| | | | <u> </u> | l | |

| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
|------------|--------------|---------|-------|--------------------|--------------------------------------|
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, of the Earthquake |
| | | | | | User Manual for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T_T | <u> </u> | NII I_N | I T I | . A - A 1: D - D - | gooding: LIC-Linnerage: |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.6.3.25 Railway Facility Feature Class: hzRailFlty

| Identification: | hzRailFlty |
|-----------------|---|
| Type: | ESRI Point Feature Class |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of railway transportation facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzRailFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|------------------|---|
| | (Size) | * | d* | | |
| | Access | | | | |
| | Type (Size) | | | | |
| RailFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>hzRailFlty</i> feature |
| | | | | | class with the associated |
| | | | | | eqRailFlty table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFcltyCl | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. It |
| ass | | NU, | | Table B-7 | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | produced by the EQ Model |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact name |
| PhoneNumber | Text(14) | F | F | | Facility phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |

| | | | | 2100) | |
|-------------|------------|---|---|-------------------|------------------------------------|
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8 | | | | |
| |) | | | | |
| BackupPower | Short(1) | F | F | 0 = No | Availability of backup power |
| | Yes/No(1) | | | 1 = Yes | |
| Traffic | Long(4) | F | F | | Average daily traffic (trains/day) |
| | Long | | | | |
| | Integer(4) | | | | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |

 $[\]hbox{* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;}\\$

LC=Lowercase

F.6.3.26 Earthquake Specific Railway Facilities Table: eqRailFlty

| Identification: | eqRailFlty | | | | | | |
|-----------------|---|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of light rail facilities. During the creation of a study region, the content of the table is transferred to a table with the same name (eqRailFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqLightRailFlty for each record in hzRailFlty with same RailFltyId unique identifier. | | | | | | |
| Data: | | | | | | | |
| | Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|--------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RailFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this eqRailFlty feature |
| | | | | | class with the associated |
| | | | | | hzRailFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationT | Text(1) | F | F | | Foundation type (e.g., slab, pile). |

| ype | | | | | This field is found in the table for future extensibility of the EQ Model, but does not need to be populated at this time. |
|------------|--------------------|---|-------|-------------------------------|--|
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| WaterDepth | Float(4) Single(4) | F | F | Null ≥ 0 | Water table depth in feet. Values must be greater than 0. Range: 0 - 300 meters. escending; UC=Uppercase; |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.27 Railway Bridges Feature Class: hzRailwayBridge

| Identification: | hzRailwayBridge | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose | Belongs to TRN.mdb. Provides the geometry of railway bridges. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzRailwayBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RailwayBrid | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| geId | | A | | | It relates this hzRailwayBridge |
| | | | | | feature class with the associated |
| | | | | | eqRailwayBridge table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| BridgeClass | Text(5) | T, | T, UC | See Appendix B, | Indicates bridge classification. It |
| | | NU, | | Table B.7. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess the loss estimations |
| | | | | | produced by the EQ Model |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| BridgeType | Text(8) | F | F | | Structural types based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field is |
| | | | | | for informational purposes and |
| | | | | | has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| NumSpans | Short(1) | F | F | | Number of spans |
| | Byte(1) | | | | |

| Length | Long(4) | F | F | | Bridge length (in meters) |
|-------------|-----------------|---|---|---------------|------------------------------------|
| | Long Integer(4) | | | | |
| MaxSpanLen | Double(8) | F | F | | Maximum span length (in |
| gth | Double(8) | | | | meters) |
| SkewAngle | Double(8) | F | F | | Skew angle in degrees |
| | Double(8) | | | | |
| SeatLength | Double(8) | F | F | | Seat length (in meters) |
| | Double(8) | | | | |
| SeatWidth | Double(8) | F | F | | Seat width (in meters) |
| | Double(8) | | | | |
| YearBuilt | Short(2) | F | F | Null or | Year built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| YearRemode | Short(2) | F | F | Null or | Year remodeled |
| led | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| PierType | Text(10) | F | F | | Pier type based on FHWA |
| | | | | | classification scheme in the |
| | | | | | source database |
| FoundationT | Text(1) | F | F | | Foundation type based on |
| ype | | | | | FHWA classification scheme in |
| | | | | | the source database |
| ScourIndex | Text(1) | F | F | | This field is significant to flood |
| | | | | | analysis and is the second part of |
| | | | | | the bridge specific occupancy in |
| | | | | | the bridge damage function |
| | | | | | tables4. |
| | | | | | This field is not used in the EQ |
| | | | | | or HU Model calculations |

⁴ If the bridge is considered inundated then, the scour index is checked. If the scour index is in (4, 5, 6, 7, 8, 9, T, N) then no analysis is performed as the engineering study has determined that the bridge will not be subjected to scour. If the scour index is in (U, 1, 2, 3) then an analysis must be performed.

| Traffic | Long(4) Long Integer(4) | F | F | | Average daily traffic (trains/day) |
|--------------|-------------------------|---|---|---------------------------|---|
| TrafficIndex | Text(2) | F | F | | Traffic index |
| Condition | Text(3) | F | F | | General condition rating based on the FHWA classification scheme in the source database |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| Latitude | Double(8) Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.6.3.28 Earthquake Specific Railway Bridge Table: eqRailwayBridge

| Identification: | eqRailwayBridge |
|-----------------|--|
| Type: | ESRI Table |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of |
| | railway bridges. During the creation of a study region, the table content is |
| | transferred to a table with the same name (eqRailwayBridge) in the SQL |
| | Server database in the Region folder. Data are subsequently used for Hazus- |
| | MH EQ Model estimation of hazards, damages, and loss of functionality. |
| | There must be one record in eqRailwayBridge for each record in |
| | hzRailwayBridge with same RailwayBridgeId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RailwayBrid | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| geId | (-) | A | , , , | | It relates this <i>eq</i> RailwayBridge |
| 8 | | | | | feature class with the associated |
| | | | | | hz in a one-to-one relationship. |
| | | | | | The standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| Somijpo | 10.00(1) | - | 1, 00 | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| Eqibuseut | , , | 1 | | Truit of o to 5 | susceptibility of the facility |
| | Byte(1) | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| LiususCat | | 1 | 1 | TAULI OF O TO TO | of the facility location. See |
| | Byte(1) | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WatarDanth | Elect(4) | E | E | N ₂₂ 11 > 0 | |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |

| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase |
|---|
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F.6.3.29 Flood Specific Railway Bridge Table: flRailwayBridge

| Identification | : | flRailwayBridge | | | | | |
|---------------------|-------------------------------------|--|------------|------------------------|--|--|--|
| Type: | | ESRI Table | | | | | |
| Purpose: | | Belongs to TRN.mdb. Provides Flood Model specific information of railw bridges. During the creation of a study region, the table content is transfer to a table with the same name (flRailwayBridge) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Modestimation of hazards, damages, and loss of functionality. There must be corrected in flRailwayBridge for each record in hzRailwayBridge with same RailwayBridgeId unique identifier. | | | | | |
| Data: | | | | | | | |
| | | | Feature (| Class Field Definition | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | |
| RailwayBrid geId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flRailwayBridge feature class with the associated hzRailwayBridge in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| Elevation | Double(8) | F | F | | Elevation of bridge deck | | |
| | • | ue; NU=N | Von-Unique | ; A=Ascending | ; D=Descending; UC=Uppercase; | | |
| LC=Lowercas | se | | | | | | |

F.6.3.30 Railway Tracks Feature Class: hzRailwaySegment

| Identification: | hzRailwaySegment |
|-----------------|--|
| Type: | ESRI Line Feature Class |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of railway tracks. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzRailwaySegment) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|------------|-------|----------|-----------------|------------------------------------|
| | (Size) | * | d* | | |
| | Access | | | | |
| | Type | | | | |
| | (Size) | | | | |
| RailwaySegId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this hzRailwaySegment |
| | | | | | feature class with the associated |
| | | | | | eqRailwaySegment table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| SegmentClass | Text(5) | T, | T, UC | See Appendix B, | Indicates highway road |
| | | NU, | | Table B.7. | classification. It is used by |
| | | A | | | Hazus-MH to identify the |
| | | | | | appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model |
| CountyFips | Text(5) | T, | Т | | Five-digit FIPS county code. |
| | | NU, | | | First two digits are the state |
| | | A | | | FIPS; the remaining three digits |
| | | | | | are the county code. |
| Name | Text(40) | F | F | | Track segment name |
| Owner | Text(25) | F | F | | Track segment owner |
| Length | Short(2) | F | F | | Section length (in kms) |
| | Integer(2) | | | | |
| NumTracks | Short(1) | F | F | | Number of tracks |
| | Byte(1) | | | | |
| Traffic | Long(4) | F | F | | Average daily traffic (trains/day) |
| | Long | | | | |
| | Integer(4) | | | | |
| | <u> </u> | | <u> </u> | | 1 |

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| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
|-----------|------------|---|---|-------------------|---------------------------------|
| | Currency(8 | | | | |
| |) | | | | |
| Comment | Text(40) | F | F | | Comments |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.6.3.31 Earthquake Specific Railway Tracks Table: eqRailwaySegment

| Identification: | | eqRailwaySegment | | | | |
|------------------|---|--|-----------------|-------------------------|---|--|
| Type: ESRI Table | | | | | | |
| Purpose | | Belongs to TRN.mdb. Provides Earthquake Model specific information of railway tracks. During the creation of a study region, the table content is transferred to a table with the same name (eqRailwaySegment) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqRailwaySegment for each record in hzRailwaySegment with same RailwaySegId unique identifier. | | | | |
| Data: | | | | | | |
| | | | Feature C | Class Field Definition | | |
| Name | ESRI Type (Size) Access Type (Size) | e Index * | Require d* | Values | Description | |
| RailwaySegId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this eqRailwaySegment feature class with the associated hzRailwaySegment in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999 | |
| * T=True; F=F | alse; U=Unio | que; NU=N | I Ion-Unique | ; A=Ascending; D=I | Descending; UC=Uppercase; | |
| LC=Lowercase | e | | | | | |

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F.6.3.32 Railway Tunnel Feature Class: hzRailwayTunnel

| Identification: | hzRailwayTunnel | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of railway tunnels. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named TRN.mdb in the Region folder. Field information is transferred to a table with the same name (hzRailwayTunnel) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|-------------|-------------|-------|---------|------------------|--|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RailwayTun | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nelId | | A | | | It relates this <i>hzRailwayTunnel</i> |
| | | | | | feature class with the associated |
| | | | | | eqRailwayTunnel table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| TunnelClass | Text(5) | T, | T, UC | See Appendix B, | Indicates tunnel classification. It |
| | | NU, | | Table B.7. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner name |
| Туре | Text(5) | F | F | | Structural types based on the |
| | | | | | FHWA classification scheme in |
| | | | | | the source database. This field is |
| | | | | | for informational purposes and |
| | | | | | has no bearing on the |
| | | | | | computation of results. |
| Width | Double(8) | F | F | | Bridge width (in meters) |
| | Double(8) | | | | |
| Length | Long(4) | F | F | | Bridge length (in meters) |
| | Long | | | | |

| hort(2) nteger(2) ong(4) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built |
|--------------------------------|--|--|--|--|
| | F | | ` | |
| ong(4) | Г | | 2100) | |
| ong(4) | Г | | I | |
| | F | F | | Average daily traffic (trains/day) |
| ong | | | | |
| nteger(4) | | | | |
| ouble(8) | F | F | | Replacement cost (in thousands) |
| urrency(8) | | | | |
| ouble(8) | F | F | Latitude decimal | Latitude |
| ouble(8) | | | degrees | |
| ouble(8) | F | F | Longitude decimal | Longitude |
| ouble(8) | | | degrees | |
| ext(40) | F | F | | Comments |
| 100000 | teger(4) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) ext(40) | teger(4) ouble(8) ouble(8) ouble(8) ouble(8) ouble(8) F ouble(8) F ouble(8) F ouble(8) F | teger(4) ouble(8) F F urrency(8) ouble(8) F F ouble(8) ouble(8) F F ouble(8) F F ouble(8) F F | teger(4) ouble(8) F F ourrency(8) ouble(8) F F F Latitude decimal degrees ouble(8) F F F ouble(8) F F F Longitude decimal degrees |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.6.3.33 Earthquake Specific Railway Tunnel Table: eqRailwayTunnel

| Identification: | eqRailwayTunnel | | | | | |
|--------------------------------|---|--|--|--|--|--|
| Type: | ESRI Table | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of railway tunnels. During the creation of a study region, the table content is transferred to a table with the same name (eqRailwayTunnel) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqRailwayTunnel for each record in hzRailwayTunnel with same RailwayTunnelId unique identifier. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|----------------|---------|-----------|-------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RailwayTun | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nelId | | A | | | It relates this <i>eq</i> RailwayTunnel |
| | | | | | feature class with the associated |
| | | | | | hzRailwayTunnel in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999 |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null≥0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F=1 | False; U=Uniqu | e; NU=N | on-Unique | A=Ascending; D=De | scending; UC=Uppercase; |

F.6.3.34 Airport Runways Feature Class: hzRunway

| Identification: | hzRunway | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to TRN.mdb. Provides the geometry of airport runways location. | | | | |
| | There are one or more runway records for each record in <i>hzAirportFlty</i> feature | | | | |
| | class. During the creation of a study region, for all hazards, geometries are | | | | |
| | transferred to a geodatabase named TRN.mdb in the Region folder. Field | | | | |
| | information is transferred to a table with the same name (hzRunway) in the | | | | |
| | SQL Server database in the Region folder. Data are subsequently used for | | | | |
| | Hazus-MH estimation of hazards, damages, and loss of functionality, as well | | | | |
| | as mapping. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI | Inde | Requir | Values | Description |
|------------------|-----------|------|--------|------------------|---|
| | Туре | x* | ed* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Туре | | | | |
| | (Size) | | | | |
| RunwayId | Text(8) | Т, | T, UC | | Unique identifier for each record. |
| | | U, A | | | It relates this <i>hzRunway</i> feature |
| | | | | | class with the associated |
| | | | | | eqRunway table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| TranspFcltyClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. It |
| | | NU, | | Table B.12. | is used by Hazus-MH to identify |
| | | Α | | | the appropriate damage curve to |
| | | | | | assess loss estimations produced |
| | | | | | by the EQ Model. |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Name of runway |
| AirportId | Text(8 | F | F | | The AirportId value in |
| | | | | | hzAirportFlty feature class to |
| | | | | | what the record is related |
| RunwayLength | Double(8) | F | F | | Runway length (in meters) |
| | Double(8) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(| | | | |
| | 8) | | | | |
| Capacity | Long(4) | F | F | | Capacity (flights/day) |
| | Long | | | | |
| | 8 | | | | |

| | Integer(4) | | | | |
|-----------|---------------------|---|---|---------------------------|---------------|
| Pavement | Text(10) | F | F | | Pavement type |
| Latitude | Double(8) Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.6.3.35 Earthquake Specific Airports Runway Table: eqRunway

| Identification: | eqRunway | | | | | |
|--------------------------------|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | |
| Purpose: | Belongs to TRN.mdb. Provides Earthquake Model specific information of airports. During the creation of a study region, the table content is transferred to a table with the same name (eqRunway) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqRunway for each record in hzRunway with same RunwayId unique identifier. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|----------------|---------|------------|-------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| RunwayId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>eqRunway</i> feature |
| | | | | | class with the associated |
| | | | | | hzRunway in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null≥0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F= | False; U=Uniqu | e; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; |

F.7 Lifeline Utility Systems: UTIL.mdb

F.7.1 Database Overview

The UTIL.mdb is an Access personal geodatabase that contains feature *classes* for lifeline utility systems with fields relevant for all hazards; it also contains *tables* with information specific to the Earthquake and Flood Models. Lifeline utility systems include potable water, wastewater, oil, natural gas, electric power, and communication systems.

The geographical domain of the database is the state. In that case, there is one UTIL.mdb database for each state, each located in the appropriate State folder.

The current version of the Flood Model does not provide damage or loss estimates for communication systems.

During the creation of a study region, for all hazards, utility systems geometries from feature classes are transferred to a geodatabase named UTIL.mdb in the Region folder. Feature classes are named with the prefix *hz*, meaning they are relevant across all Hazus-MH Models. Potable water facilities, for instance, are stored in the *hzPotableWaterFlty* feature class with fields containing information common to all hazards, such as name and address. This information is transferred to a table with the same name (for potable water facilities, *hzPotableWaterFlty*) in the SQL Server database in the Region folder.

Hazard specific tables are named with the prefix eq (earthquake) and fl (flood): eqPotableWaterFlty and flPotableWaterFlty. The information is transferred to tables with the same name in the SQL Server database in the Region folder. There is a one-to-one relationship between hz tables and the corresponding eq and fl tables through a unique identifier.

F.7.2 Identification

UTIL.mdb

F.7.3 Database Content

The UTIL.mdb database includes:

| Name | Туре | Content |
|---------------------|--------------------------|--|
| hzCommunicationFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of communication related facilities. A communication facilities system consists of central offices, stations, and transmitters |
| hzElectricPowerFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of electric power facilities. An electric power facilities system consists of substations, distribution circuits, generation plants, and transmission towers. |
| hzNaturalGasFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of natural gas compressor stations |
| hzNaturalGasPl | ESRI Line Feature Class | Geometry (line features) and all-hazards information of natural gas pipelines |
| hzOilFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information for oil system facilities including refineries, pumping plants, and tank farms |
| hzOilPl | ESRI Line Feature Class | Geometry (line features) and all-hazards information of oil pipelines |
| hzPotableWaterFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of potable water facilities including water treatment plants, wells, storage tanks, and pumping stations |
| hzPotableWaterPl | ESRI Line Feature Class | Geometry (line features) and all-hazards information of potable water pipelines |
| hzWasteWaterFlty | ESRI Point Feature Class | Geometry (point features) and all-hazards information of wastewater facilities including wastewater treatment plants and lift stations |
| hzWasteWaterPl | ESRI Line Feature Class | Geometry (line features) and all-hazards information of wastewater pipelines |
| eqCommunicationFlty | ESRI Table | Earthquake specific information for communication related facilities |
| eqElectricPowerFlty | ESRI Table | Earthquake specific information for electric power facilities |
| eqNaturalGasDL | ESRI Table | Earthquake specific information for natural gas distribution pipelines by census tract |
| eqNaturalGasFlty | ESRI Table | Earthquake specific information for natural gas facilities |
| eqNaturalGasPl | ESRI Table | Earthquake specific information for natural gas pipelines |
| eqOilFlty | ESRI Table | Earthquake specific information for oil facilities |
| eqOilPl | ESRI Table | Earthquake specific information for airport oil pipelines |
| eqPotableWaterDL | ESRI Table | Earthquake specific information for potable water distribution pipelines by census tract |
| eqPotableWaterFlty | ESRI Table | Earthquake specific information for potable water facilities |
| eqPotableWaterPl | ESRI Table | Earthquake specific information for potable water pipelines |
| eqWasteWaterDL | ESRI Table | Earthquake specific information for wastewater distribution pipelines by census tract |
| eqWasteWaterFlty | ESRI Table | Earthquake specific information for wastewater facilities |
| eqWasteWaterPl | ESRI Table | Earthquake specific information for wastewater pipelines |
| flElectricPowerFlty | ESRI Table | Flood specific information for electric power facilities |
| flExposureUtil | ESRI Table | Flood specific table (not used and not required) |
| flNaturalGasFlty | ESRI Table | Flood specific information natural gas facilities |
| flNaturalGasPl | ESRI Table | Flood specific information for natural gas pipelines |
| flOilFlty | ESRI Table | Flood specific information for oil facilities |

| flOilPl | ESRI Table | Flood specific information for oil pipelines |
|--------------------|------------|---|
| flPotableWaterFlty | ESRI Table | Flood specific information for potable water facilities |
| flPotableWaterPl | ESRI Table | Flood specific information for potable water pipelines |
| flWasteWaterFlty | ESRI Table | Flood specific information for wastewater facilities |
| flWasteWaterPl | ESRI Table | Flood specific information for wastewater pipelines |

F.7.3.1 Communication Facilities Feature Class: hzCommunicationFlty

| Identification: | hzCommunicationFlty | | | | | |
|--------------------------------|--|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | | |
| Purpose: | Belongs to UTIL.mdb. Provides the geometry of communication facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzCommunicationFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, | | | | | |
| Data: | and loss of functionality, as well as mapping. | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|----------------|-------------|-------|---------|------------------|---------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| Communicatio | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| nFltyId | | A | | | It relates this |
| | | | | | hzCommunicationFlty feature |
| | | | | | class with the associated |
| | | | | | eqCommunicationFlty table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| UtilFcltyClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification. It |
| | | NU, | | Table B.18. | is used by Hazus-MH to identify |
| | | A | | | the appropriate damage curve for |
| | | | | | assessing loss estimations |
| | | | | | produced by the EQ Model. |
| Tract | Text(11) | T, | T | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact name |
| PhoneNumber | Text(14) | F | F | | Facility contact phone number |
| Use | Text(10) | F | F | | Use |

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| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
|-------------|-------------|---|---|------------------|---------------------------------|
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| BackupPower | Short(1) | F | F | 0 = No | Availability of backup power |
| | Yes/No(1) | | | 1 = Yes | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude | Longitude |
| | Double(8) | | | decimal degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.2 Earthquake Specific Communication Facilities Table: eqCommunicationFlty

| Identification: | | eq(| eqCommunicationFlty | | | | | | |
|-------------------|------------------------------------|------------|--|--|---|---|--|--|--|
| Type: | | ESRI Table | | | | | | | |
| Purpose: | | | mmunicantent is trache SQL in Hazus-Mactionality | tion facilition ansferred to Server data MH EQ Moo y. There mu | es. During the creation a table with the same base in the Region for the del estimation of hazers to be one record in the same state. | e Model specific information of on of a study region, the table ne name (eqCommunicationFlty) older. Data are subsequently used eards, damages, and loss of eqCommunicationFlty for each CommunicationFltyId unique | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Definiti | on | | | | | | | |
| Name | ESRI Ty (Size) Access Type (Size) | - | Index * | Require d* | Values | Description | | | |
| Communication | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | | |
| FltyId | | | A | | | It relates this eqCommunicationFlty feature class with the associated hzCommunicationFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| eqBldgType | Text(4) | | F | T, UC | See Appendix B, Table B.2. | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for complete description of available model | | | |

| | | | | | building types. |
|----------------|---------------------|---|-------|---|--|
| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- Code LC = Low-Code PC = Pre-Code HS = Special High-Code MS = Special Moderate-Code LS = Special Low-Code | Building codes in effect in the area. See Earthquake Technical Manual, Chapters 3 and 5, for detailed information about design levels. |
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based upon shear wave velocity. See Appendix B, Table B.1, for details. |
| Anchor | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Indicates whether the facility is anchored to provide additional resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). This field is in the table for future extensibility of the Earthquake Model, but does not need to be populated at this time. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See |

| | | | | | Earthquake Technical Manual |
|------------|-----------|---|---|----------|-----------------------------------|
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | - 300 meters. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.7.3.3 Electric Power Facilities Feature Class: hzElectricPowerFlty

| Identification: | | hzElectricPowerFlty | | | | | | |
|-----------------------------|-------------------------------------|--------------------------|---|------------|----------------------------------|---|--|--|
| Type: | | ESRI Point Feature Class | | | | | | |
| Purpose: | | | Belongs to UTIL.mdb. Provides the geometry of electric power facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzElectricPowerFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | | | |
| Feature Class Fi | eld Definiti | on | | | | | | |
| Name ElectricPowerF ItyId | ESRI Typ (Size) Access Type (| | T, U, | Require d* | Values | Unique identifier for each record. It relates this hzElectricPowerFlty feature class with the associated eqElectricPowerFlty and flElectricPowerFlty tables. The standard format adopted by | | |
| | | | | | | Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| UtilFcltyClass | Text(5) | | T, NU, A | T, UC | See Appendix B, Table B.17. | Indicates the facility classification. It is used by Hazus-MH to identify the appropriate damage curve to assess loss estimations produced by the EQ Model. | | |
| Tract | Text(11) | | T, NU, | Т | 11 digits of the Census tract | 2000 US Census tract number | | |

| | | A | | number | |
|-------------|--------------------------|---|---|------------------------------------|--|
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact person |
| PhoneNumber | Text(14) | F | F | | Facility contact phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | $(\ge 1500 \text{ and } \le 2100)$ | |
| NumStories | Short(1) Byte(1) | F | F | | Number of stories |
| Capacity | Long(4) Long Integer(4) | F | F | | Volts/Watts |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| Latitude | Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.7.3.4 Earthquake Specific Electric Power Facilities Table: eqElectricPowerFlty

| Identification: | | eqE | eqElectricPowerFlty | | | | | | |
|-------------------|------------------------------------|------------|--|---|--|---|--|--|--|
| Type: | | ESRI Table | | | | | | | |
| Purpose: | | | etric pow tent is tr SQL Ser zus-MH | ver facilities ansferred to rver databas EQ Model o y. There mu | s. During the creation a table with the sar see in the Region fold estimation of hazard ast be one record in a | e Model specific information of a study region, the table ne name (eqElectricPowerFlty) in ler. Data are subsequently used for s, damages, and loss of eqElectricPowerFlty for each lectricPowerFltyId unique | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Definiti | on | | | | | | | |
| Name | ESRI Ty (Size) Access Type (Size) | - | Index * | Require d* | Values | Description | | | |
| ElectricPowerFlt | Text(8) | | T, U, | T, UC | | Unique identifier for each record. It relates this eqElectricPowerFlty feature class with the associated hzElectricPowerFlty in a one-to- one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| eqBldgType | Text(4) | | F | T, UC | See Appendix B, Table B.2. | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for complete description of available model building types. | | | |

| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
|----------------|-----------|---|-------|-----------------|--------------------------------------|
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special | |
| | | | | High-Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special | |
| | | | | Low-Code | |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | | | | | need to be populated at this time |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based upon shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |

| | | | | | Earthquake Technical Manual |
|------------|-----------|---|---|--------------|-----------------------------------|
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | N | F | $Null \ge 0$ | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | - 300 meters. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.7.3.5 Flood Specific Electric Power Facilities Table: flElectricPowerFlty

| Identification: | | flElectricPo | owerFlty | | | | |
|-------------------------|---|--|---|--|--|--|--|
| Type: | | ESRI Table | | | | | |
| Purpose: | | power facilitransferred Server data MH Flood | to a table w base in the Model estin be one reco | g the creation of ith the same na Region folder. nation of hazar ord in flElectric | d Model specific information of electric of a study region, the table content is ame (flElectricPowerFlty) in the SQL Data are subsequently used for Hazusds, damages, and loss of functionality. ePowerFlty for each record in ricPowerFltyId unique identifier. | | |
| Feature Class Fie | ld Definition | on | | | | | |
| Name | ESRI Typ (Size) Access Type (Size) | pe Index * | Require d* | Values | Description | | |
| ElectricPowerFlt yId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flElectricPowerFlty feature class with the associated hzElectricPowerFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| UtilIndicator | Short(2) Integer(2) | F | F | | Utility Indicator. This field is not used in the current version (MR3) of Hazus-MH. | | |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile) | | |
| EquipmentHt | Double(8 Currency(8) |) F | F | | Average height of electrical equipment (measured in feet from the floor) | | |
| FloodProtection | Short(2) | F | F | | Flood return period (in years) for | | |

| | Integer(2) | | | which the structure is protected |
|----------------|------------|---|---|--|
| UtilDamageFnId | Text(10) | F | F | Originally intended to allow users to define facility specific damage curves. Utility damage functions are not used in version |
| | | | | MR3 of Hazus. |

 $[\]hbox{* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;}\\$

F.7.3.6 Natural Gas Facilities Feature Class: hzNaturalGasFlty

| Identification: | | hzì | NaturalG | asFlty | | |
|------------------|--------------------|-----|---|--|---|--|
| Type: | | ES | RI Point | Feature Cla | iss | |
| Purpose: | | | longs to U creation odatabase nsferred t | UTIL.mdb. of a study is named UT to a table we base in the l | Provides the geome region, for all hazard IL.mdb in the Region ith the same name (Region folder. Data | try of natural gas facilities. During ds, geometries are transferred to a on folder. Field information is nzNaturalGasFlty) in the SQL are subsequently used for Hazusss of functionality, as well as |
| Data: | 115 0 11 | | | | | |
| Feature Class Fi | | | T | Г | | |
| Name | ESRI Typ (Size) | | Index * | Require d* | Values | Description |
| NaturalGasFlty | Text(8) | | T, U, | T, UC | | Unique identifier for each record. |
| Id | | | A | | | It relates this hzNaturalGasFlty feature class with the associated eqNaturalGasFlty and flNaturalGasFlty tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| UtilFcltyClass | Text(5) | | T, NU, A | T, UC | See Appendix B, Table B.16. | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing the loss estimations produced by the EQ Model. |
| Tract | Text(11) | | T, NU, | Т | 11 digits of the Census tract | 2000 US Census tract number |

| | | A | | number | |
|-------------|------------------------|---|---|-----------------------------------|--|
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Name of the facility owner |
| Contact | Text(40) | F | F | | Name of contact person for the facility |
| PhoneNumber | Text(14) | F | F | | Phone number to contact the facility |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year the structure was built |
| NumStories | Short(1) Byte(1) | F | F | | Number of stories |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| BackupPower | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Availability of backup power |
| Capacity | Float(4) Single(4) | F | F | | Millions of cubic feet per day |
| Latitude | Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) | F | F | Longitude Decimal Degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

F.7.3.7 Earthquake Specific Natural Gas Facilities Table: eqNaturalGasFlty

| Identification: | | eql | NaturalG: | asFlty | | | | |
|------------------|---------------------------------|------------|--|---------------|-------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | | Belongs to UTIL.mdb. Provides Earthquake Model specific information of natural gas facilities. During the creation of a study region, the content of the table is transferred to a table with the same name (eqNaturalGasFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqNaturalGasFlty for each record in hzNaturalGasFlty with same NaturalGasFltyId unique identifier. | | | | | |
| Data: | | | | | | | | |
| Feature Class Fi | eld Definiti | on | | | | | | |
| Name | ESRI Typ (Size) Access Type (A | | Index * | Require d* | Values | Description | | |
| NaturalGasFlty | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | |
| Id | T. (A) | | A | THO | | It relates this eqNaturalGasFlty feature class with the associated hzNaturalGasFlty in a one-to-one relationship. The standard format adopted by HAZUS is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxxx is a sequential number from 000001 to 999999. | | |
| eqBldgType | Text(4) | | F | T, UC | See Appendix B, Table B.2. | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2 for the complete description of available model building types. | | |
| DesignLevel | Text(2) | | F | T, UC | HC = High-Code MC = Moderate- | Building codes in effect in the area. See Earthquake Technical Manual, Chapters 3 and 5, for | | |

| | | | | Code | detailed information about |
|---------------|-----------|---|-------|-----------------|--------------------------------------|
| | | | | LC = Low-Code | design levels. |
| | | | | PC = Pre-Code | |
| | | | | HS = Special | |
| | | | | High-Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special | |
| | | | | Low-Code | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| Anchor | Short(1) | F | F | 0 = No | Indicates whether the facility is |
| | Yes/No(1) | | | 1 = Yes | anchored to provide additional |
| | | | | | resistance to seismic forces. |
| FoundationTyp | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| e | | | | | This field is in the table for |
| | | | | | future extensibility of the EQ |
| | | | | | Model, but does not need to be |
| | | | | | populated at this time. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |

| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values | | |
|---|-----------|---|---|---------------|-----------------------------------|--|--|
| | Single(4) | | | | must be greater than 0. Range: 0 | | |
| | | | | | - 300 meters. | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase | | | | | | | |

F.7.3.8 Flood Specific Natural Gas Facilities Table: flNaturalGasFlty

| Identification: | | flNaturalGasFlty | | | | | | |
|-------------------|---|------------------|------------|------------|--------|---|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | Belongs to UTIL.mdb. Provides Flood Model specific information of natural gas facilities. During the creation of a study region, the table content is transferred to a table with the same name (flNaturalGasFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flNaturalGasFlty for each record in hzNaturalGasFlty with same NaturalGasFltyId unique identifier. | | | | | | | |
| Data: | | | | | | | | |
| Feature Class Fie | ld Definiti | on | | | | | | |
| Name | ESRI Ty (Size) Access Type (Size) | * | Index * | Require d* | Values | Description | | |
| NaturalGasFltyI | Text(8) | 7 | Γ, U, | T, UC | | Unique identifier for each record. | | |
| d | | | A | | | It relates this flNaturalGasFlty feature class with the associated hzNaturalGasFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| UtilIndicator | Short(2) Integer(2) | I | F | F | | Utility Indicator. This field is not used in the current version MR3 of Hazus-MH. | | |
| FoundationType | Text(1) | I | F | F | | Foundation type (e.g., slab, pile) | | |
| EquipmentHt | Double(8 | <u></u> | F | F | | Average height of electrical equipment (measured in feet from the floor) | | |
| FloodProtection | Short(2) Integer(2) | I | F | F | | Flood return period (in years) for which the structure is protected. | | |

| UtilDamageFnId | Text(10) | F | F | | Originally intended to allow | | | |
|------------------|---|-------------|-----------------|-------------------|-----------------------------------|--|--|--|
| | | | | | users to define facility specific | | | |
| | | | | | damage curves. Utility damage | | | |
| | | | | | functions are not used in version | | | |
| | | | | | MR3 of Hazus-MH. | | | |
| * T=True; F=Fals | e; U=Unique; | l NU=Non | l -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; | | | |
| LC=Lowercase | * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase | | | | | | | |

F.7.3.9 Natural Gas Pipelines Feature Class: hzNaturalGasPl

| Identification: | | hzNaturalG | asPl | | | | | |
|------------------|-------------------------------------|---|------------|--------------------------------|--|--|--|--|
| Туре: | | ESRI Line Feature Class | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides the geometry of natural gas pipelines. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzNaturalGasPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | | |
| Data: | | | | | | | | |
| Feature Class Fi | eld Definitio | n | | | | | | |
| Name | ESRI Type (Size) Access Type(Size) | * | Require d* | Values | Description | | | |
| NaturalGasPlId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this <i>hzNaturalGasPl</i> feature class with the associated <i>eqNaturalGasPl</i> and <i>flNaturalGasPl</i> tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| PipelinesClass | Text(5) | T, NU, A | T, UC | See Appendix B, Table B.16. | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve to assess the loss estimations produced by the EQ Model. | | | |
| CountyFips | Text(5) | T, NU, A | Т | Five digit FIPS county code | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three are digits the county code. | | | |

| Name | Text(40) | F | F | | Facility name |
|------------|--------------------------|----------|------|------------------------------------|---------------------------------|
| Owner | Text(25) | F | F | | Facility owner |
| Material | Text(10) | F | F | | Material type |
| Diameter | Double(8) Currency(8) | F | F | | Diameter (in inches) |
| PipeLength | Float(4) Single(4) | F | F | | Length of the segment (in kms) |
| Joint | Text(10) | F | F | | Join type |
| YearBuilt | Short(2) | F | F | Null or | Year the structure was built |
| | Integer(2) | | | $(\ge 1500 \text{ and } \le 2100)$ | |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| SourceId | Long(4) Long Integer(4) | F | F | | Identification of the source |
| Comment | Text(40) | F | F | | Comments |
| *TT T F 1 | C-1 TI_TI | ATT T AT | T T: | A _ A 1: D_D | 1' 110 11 |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.10 Earthquake Specific Natural Gas Pipeline Table: eqNaturalGasPl

F.7.3.11 Flood Specific Natural Gas Pipeline Table: flNaturalGasPl

| Identification: | | | flNaturalGasPl | | | | | | |
|---------------------|----------------------|--|----------------|------------|--------|---|--|--|--|
| Type: | | ESRI Table | | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides Flood Model specific information of natural gas pipelines. During the creation of a study region, the table content is transferred to another table with the same name (flNaturalGasPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flNaturalGasPl for each record in hzNaturalGasPl with same NaturalGasPlId unique identifier. | | | | | | | |
| Data: | | | | | | | | | |
| Feature Class Fi | eld Definiti | on | | | | | | | |
| Name | ESRI Type(Size | | Index * | Require d* | Values | Description | | | |
| NaturalGasPlId | Text(8) | | T, U, | T, UC | | Unique identifier for each record. It relates this flNaturalGasPl feature class with the associated hzNaturalGasPl in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| SystemId | Text(5) | | F | F | | Utility indicator. This field is not used in the current version MR3 of Hazus-MH. | | | |
| VulnbltyToSco ur | Text(10) | | F | F | | Vulnerability to scour. Field for future development. | | | |
| IDUpperJuncti on | Short(2) Integer(2) | | F | F | | Field for future development | | | |
| IDLowerJuncti | Short(2) | | F | F | | Field for future development | | | |

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| on | Integer(2) | | | | | | |
|--|------------|---|---|--|------------------------------|--|--|
| DamageFnId | Text(10) | F | F | | Field for future development | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowercase | | | | | | | |

F.7.3.12 Oil Facilities Feature Class: hzOilFlty

| Identification: | | hzOilFlty | | | | | |
|------------------|--------------------------------|---|-------------|--|--|--|--|
| Туре: | | ESRI Point | Feature Cla | ass | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides the geometry of Oil facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzOilFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | | |
| Feature Class Fi | ield Definiti | on | | | | | |
| Name | ESRI Typ (Size) Access Type(S | * | Require d* | Values | Description | | |
| OilFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this <i>hz</i> OilFlty feature class with the associated <i>eq</i> OilFlty and <i>fl</i> OilFlty tables. The standard format adopted by Hazus is SSxxxxxx where SS is the state name abbreviation (upper case) and xxxxxx, is a sequential number from 000001 to 999999. | | |
| UtilFcltyClass | Text(5) | T, NU, A | T, UC | See Appendix B, Table B.15. | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model. | | |
| Tract | Text(11) | T, NU, A | Т | 11 digits of the Census tract number | 2000 US Census tract number | | |
| Name | Text(40) | F | F | | Facility name | | |

| Address | Text(40) | F | F | | Physical address |
|-------------|------------------------|---|---|------------------------------------|--|
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact |
| PhoneNumber | Text(14) | F | F | | Facility phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year the structure was built |
| | Integer(2) | | | $(\ge 1500 \text{ and } \le 2100)$ | |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| BackupPower | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Availability of backup power |
| Capacity | Float(4) Single(4) | F | F | | Thousands of barrels per day |
| Latitude | Double(8) | F | F | Latitude decimal degrees | Latitude |
| Longitude | Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.13 Earthquake Specific Oil Facilities Table: eqOilFlty

| Identification: | | eqOilFlty | | | |
|-------------------|-------------------------------------|---|--|--|--|
| Туре: | | ESRI Table | • | | |
| Purpose: | | facilities. It to a table we Region fold estimation | Ouring the creation that the same der. Data are of hazards, of | reation of a study reg e name (eqOilFlty) in e subsequently used damages, and loss of | e Model specific information of oil gion, the table content is transferred in the SQL Server database in the for Hazus-MH EQ Model Functionality. There must be one liflty with same OilFltyId unique |
| Data: | 115 6 11 | | | | |
| Feature Class Fie | ESRI Typ (Size) Access Type (Size) | | Require d* | Values | Description |
| OilFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this <i>eq</i> OilFlty feature class with the associated <i>hz</i> OilFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, Table B.2. | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for the complete description of available model building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- | Building codes in effect in the area. See Earthquake Technical |

| Avallan | | | F | Code LC = Low-Code PC = Pre-Code HS = Special High-Code MS = Special Moderate-Code LS = Special Low-Code | Manual, Chapters 3 and 5, for detailed information about design levels. |
|----------------|---------------------|---|-------|--|--|
| Anchor | Short(1) Yes/No(1) | F | Г | 0 = No 1 = Yes | Indicates whether the facility is anchored to provide additional resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). This field is in the table for future extensibility of the earthquake model, but does not need to be populated at this time. |
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B-1 | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based upon shear wave velocity. See Appendix B, Table B.1, for details. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |

| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
|------------------|--------------|--------|------------|-------------------|-----------------------------------|
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | - 300 meters. |
| * T=True; F=Fals | e; U=Unique; | NU=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |

F.7.3.14 Flood Specific Oil Facilities Table: flOilFlty

| Identification: | flOilFlty | | | | |
|-------------------|------------------------------------|--|---|--|--|
| Type: | | ESRI Table | ; | | |
| Purpose: | | facilities. D to a table w Region fold estimation | ouring the cr ith the same der. Data are of hazards, o | eation of a stude name (flOilFlt subsequently udamages, and lo | Model specific information of oil y region, the table content is transferred y) in the SQL Server database in the used for Hazus-MH Flood Model ass of functionality. There must be one zOilFlty with same OilFltyId unique |
| Data: | | | | | |
| Feature Class Fie | ld Definiti | on | | | |
| Name | ESRI Ty (Size) Access Type (Size) | * | Require d* | Values | Description |
| OilFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flOilFlty feature class with the associated hzOilFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| UtilIndicator | Short(2) Integer(2) | F | F | | Utility indicator. This field is not used in the current version MR3 of Hazus-MH. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile) |
| EquipmentHt | Double(8 | | F | | Average height of electrical equipment (measured in feet from the floor) |
| FloodProtection | Short(2) Integer(2) | F | F | | Flood return period (in years) for which the structure is protected. |

| UtilDamageFnId | Text(10) | F | F | Originally intended to allow |
|----------------|------------|---|---|-----------------------------------|
| | | | | users to define facility specific |
| | | | | damage curves. Utility damage |
| | | | | functions are not used in version |
| | | | | MR3 of Hazus-MH |
| NumStories | Short(2) | F | F | Number of stories |
| | Integer(2) | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.15 Oil Pipelines Feature Class: hzOilPl

| Identification: | | hzOilPl | | | | | |
|------------------|---|--|------------|--------------------------------|---|--|--|
| Type: | | ESRI Line Feature Class | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides the geometry of oil pipelines. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzOilPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | | |
| Feature Class Fi | ield Definiti | on | | | | | |
| Name | ESRI Typ (Size) Access Ty (Size) | * | Require d* | Values | Description | | |
| OilPlId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this <i>hzOilPl</i> feature class with the associated <i>eqOilPl</i> and <i>flOilPl</i> tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| PipelinesClass | Text(5) | T, NU, A | T, UC | See Appendix B, Table B 15. | This field is used to indicate the facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model. | | |
| CountyFips | Text(5) | T, NU, A | YT | Five-digit FIPS county code | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three digits are the county code. | | |

| Name | Text(40) | F | F | | Facility name |
|------------|--------------------------|---|---|-----------------------------------|---------------------------------|
| Owner | Text(25) | F | F | | Facility owner name |
| Material | Text(10) | F | F | | Material type |
| Diameter | Double(8) Currency(8) | F | F | | Diameter (in inches) |
| PipeLength | Float(4) Single(4) | F | F | | Length of the segment (in kms) |
| Joint | Text(10) | F | F | | Join type |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| SourceId | Long(4) Long Integer(4) | F | F | | Identification of the source |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.16 Earthquake Specific Oil Pipeline Table: eqOilPl

| Identificatio | n: eq | OilPl | | | |
|---------------|--|------------|-------------|---------------|--|
| Type: | vpe: ESRI Table | | | | |
| Purpose: | Belongs to UTIL.mdb. Provides Earthquake Model specific information pipelines. It includes the unique id (OilPlId) for each record in hzOilPl. During the creation of a study region, the content of the table is transferred a table with the same name (eqOilPl) in the SQL Server database in the Region folder. The SQL server table includes additional fields that are populated subsequently. There must be one record in eqOilPl for each recoin hzOilPl with same OilPLId unique identifier | | | | |
| Data: | | | | | |
| Feature Class | ss Field Definition | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description |
| OilPIId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this eqOilPl feature class with the associated hzOilPl in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. |
| * T=True; F | =False; U=Unique; | NU=Noi | n-Unique; A | =Ascending; I | D=Descending; UC=Uppercase; |
| LC=Lowerc | ase | | | | |

F.7.3.17 Flood Specific Oil Pipeline Table: flOilPl

| Identification: | | flOilPl | | | | | | |
|---------------------|--------------------------------------|--|---|---|--|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | pipelines. D transferred in the Region estimation of | ouring the court to a table work on folder. Do f hazards, | reation of a str ith the same n ata are subsect damages, and | od Model specific information of oil udy region, the table content is name (flOilPl) in the SQL Server database quently used for Hazus-MH Flood Model loss of functionality. There must be one zOilPl with same OilPlId unique | | | |
| Data: | | | | | | | | |
| Feature Class Field | d Definition | on | | | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | | |
| OilPlId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this flOilPl feature class with the associated hzOilPl in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| SystemId | Text(5) | F | F | | Utility indicator. This field is not used in the current version (MR3) of Hazus-MH. | | | |
| VulnbltyToScour | Text(10) |) F | F | | Vulnerability to scour. Field for future development. | | | |
| IDUpperJunction | Short(2) Integer(2) | F | F | | Field for future development | | | |

| IDLowerJunction | Short(2) | F | F | | Field for future development |
|-------------------|-------------|--------|-------------|-------------------|------------------------------|
| | Integer(2) | | | | |
| DamageFnId | Text(10) | F | F | | Field for future development |
| | | | | | |
| * T=True; F=False | ; U=Unique; | NU=Non | ı-Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |
| LC=Lowercase | | | | | |

F.7.3.18 Potable Water Facilities Feature Class: hzPotableWaterFlty

| Identification: | | hzPotableWaterFlty | | | | | |
|------------------|--------------------------------|---|----------------|------------|--|--|--|
| Туре: | | ESRI Point Feature Class | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides the geometry of potable water facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzPotableWaterFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | |
| Data: | | | | | | | |
| Feature Class Fi | eld Definiti | on | | | | | |
| Name | ESRI Typ (Size) Access Type (| | Index * | Require d* | Values | Description | |
| PotableWaterFl | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | |
| tyId | | | A | | | It relates this hzPotableWaterFlty feature class with the associated eqPotableWaterFlty and flPotableWaterFlty tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | |
| UtilFcltyClass | Text(5) | | T, NU, A | T, UC | See Appendix B, Table B.1.3 | Indicates facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model | |
| Tract | Text(11) | | T, NU, A | Т | 11 digits of the Census tract number | 2000 US Census tract number | |

| Name | Text(40) | F | F | | Facility name |
|--------------|-----------------|---|---|------------------|---|
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact person |
| PhoneNumber | Text(14) | F | F | | Facility contact phone number |
| Use | Text(10) | F | F | | Use |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| SystemId | Text(5) | F | F | | Identifier for potable water |
| | | | | | system. |
| GClass | Text(1) | F | F | | For network analysis. Hazus-MH |
| | | | | | does not include a tool to analyze |
| | | | | | potable water networks such as POWSAN included in Hazus 99. |
| D 1 D | G1 (1) | - | | | |
| BackupPower | Short(1) | F | F | 0=No | Availability of backup power |
| | Yes/No(1) | | | 1=Yes | |
| YearUpgraded | Short(2) | F | F | Null or | Year the structure was upgraded |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| Capacity | Long(4) | F | F | | Capacity (million gallons/day) |
| | Long Integer(4) | | | | |
| Demand | Float(4) | F | F | | Demand (million gallons/day) |
| _ | Single(4) | | | | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |

| | Double(8) | | | degrees | |
|-----------|-----------|---|---|---------------------------|-----------|
| Longitude | Double(8) | F | F | Longitude decimal degrees | Longitude |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.7.3.19 Earthquake Specific Potable Water Facilities Table: eqPotableWaterFlty

| Identification: | | eql | PotableW | aterFlty | | | | | |
|------------------------|------------------------------------|--|------------|---------------|----------------------------------|---|--|--|--|
| Type: | | ES | ESRI Table | | | | | | |
| Purpose: Data: | | Belongs to UTIL.mdb. Provides Earthquake Model specific information of potable water facilities. During the creation of a study region, the table content is transferred to a table with the same name (eqPotableWaterFlty) the SQL Server database in the Region folder. Data are subsequently used Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqPotableWaterFlty for each re in hzPotableWaterFlty with same PotableWaterFltyId unique identifier. | | | | | | | |
| Feature Class Fie | | | | | <u>-</u> | | | | |
| Name | ESRI Ty (Size) Access Type (Size) | - | Index * | Require d* | Values | Description | | | |
| PotableWaterFlt yId | Text(8) | | T, U, | T, UC | | Unique identifier for each record. It relates this eqPotableWaterFlty feature class with the associated hzPotableWaterFlty in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999 | | | |
| eqBldgType | Text(4) | | F | T, UC | See Appendix B, Table B.2. | The building type that will be modeled in Hazus earthquake scenarios. See Appendix B, Table B.2, for complete description of available model building types. | | | |
| DesignLevel | Text(2) | | F | T, UC | HC = High-Code MC = Moderate- | Building codes in effect in the area. See Earthquake Technical | | | |

| SoilTyma | Tout(1) | E | TUC | Code LC = Low-Code PC = Pre-Code HS = Special High-Code MS = Special Moderate-Code LS = Special Low-Code | Manual, Chapters 3 and 5, for detailed information about design levels. |
|----------------|---------------------|---|-------|--|--|
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. |
| Anchor | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Indicates whether the facility is anchored to provide additional resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). This field is in the table for future extensibility of the earthquake model, but does not need to be populated at this time. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for |

| | | | | | liquefaction discussion. |
|----------------|---------------|---------|-------------|-------------------|--|
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 - 300 meters. |
| * T=True; F=Fa | lse; U=Unique | ; NU=No | n-Unique; A | A=Ascending; D=De | scending; UC=Uppercase; |
| LC=Lowercase | | | | | |

F.7.3.20 Flood Specific Potable Water Facilities Table: flPotableWaterFlty

| Identification: | | flP | otableWa | aterFlty | | | | | |
|-------------------|-----------------------|------|-------------|--------------|------------------|---|--|--|--|
| Type: | | ES | ESRI Table | | | | | | |
| Purpose: | | | longs to l | UTIL.mdb. | Provides Floor | d Model specific information of potable | | | |
| | | wa | ter facilit | ies. During | the creation of | f a study region, the table content is | | | |
| | | trai | nsferred t | to a table w | ith the same na | ame (flPotableWaterFlty) in the SQL | | | |
| | | Sei | rver datal | pase in the | Region folder. | Data are subsequently used for Hazus- | | | |
| | | Mł | H Flood N | Model estin | nation of hazar | ds, damages, and loss of functionality. | | | |
| | | Th | ere must | be one reco | ord in flPotable | WaterFlty for each record in | | | |
| | | hzI | PotableW | aterFlty wi | th same Potabl | eWaterFltyId unique identifier. | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Definiti | on | | | | | | | |
| Name | ESRI Ty | pe | Index | Require | Values | Description | | | |
| | (Size) | | * | d* | | | | | |
| | Access Type (Size) | | | | | | | | |
| PotableWaterFlt | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | | |
| yId | | | A | | | It relates this flPotableWaterFlty | | | |
| | | | | | | feature class with the associated | | | |
| | | | | | | hzPotableWaterFlty in a one-to- | | | |
| | | | | | | one relationship. The standard | | | |
| | | | | | | format adopted by Hazus is | | | |
| | | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | | name abbreviation (upper case) | | | |
| | | | | | | and xxxxxx is a sequential | | | |
| | | | | | | number from 000001 to 999999. | | | |
| UtilIndicator | Short(2) | | F | F | | Utility indicator. This field is not | | | |
| | Integer(2) | | | | | used in the current version MR3 | | | |
| | | | | | | of Hazus-MH. | | | |
| FoundationType | Text(1) | | F | F | | Foundation type (e.g., slab, pile) | | | |
| EquipmentHt | Double(8 | 3) | F | F | | Average height of electrical | | | |
| | Currency(8) | | | | | equipment (measured in feet | | | |
| | | | | | | from the floor). | | | |

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| FloodProtection | Short(2) | F | F | | Flood return period (in years) for |
|-------------------|------------|---|----|------|------------------------------------|
| | Integer(2) | | | | which the structure is protected. |
| UtilDamageFnId | Text(10) | F | F | | Originally intended to allow |
| | | | | | users to define facility specific |
| | | | | | damage curves. Utility damage |
| | | | | | functions are not used in version |
| | | | | | MR3 of Hazus-MH. |
| + m m - p - p - 1 | ***** | | TT | | t' tig ti |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.21 Potable Water Pipelines Feature Class: hzPotableWaterPl

| Identification: | | hzI | PotableW | aterPl | | | |
|------------------|-------------------------|----------------------------|---|------------|--------------------------------|--|--|
| Туре: | ESRI Line Feature Class | | | | | | |
| Purpose: | | Du tran info in t | Belongs to UTIL.mdb. Provides the geometry of potable water pipelines. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzPotableWaterPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | |
| Data: | | | | | | | |
| Feature Class Fi | eld Definiti | on | | | | | |
| Name | ESRI Typ (Size) | e | Index * | Require d* | Values | Description | |
| | Access Type (| Size) | | | | | |
| PotableWaterPl | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | |
| Id | | | A | | | It relates this hzPotableWaterPl feature class with the associated eqPotableWaterPl and flPotableWaterPl tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | |
| PipelinesClass | Text(5) | | T, NU, A | T, UC | See Appendix B, Table B.13. | Indicates facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ model. | |
| CountyFips | Text(5) | | T, NU, A | T | Five-digit FIPS county code | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three digits | |

| | | | | | are the county code. |
|------------|--------------------------|---|---|-----------------------------------|---------------------------------|
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner |
| Material | Text(10) | F | F | | Material type |
| Diameter | Double(8) Currency(8) | F | F | | Diameter (in inches) |
| PipeLength | Float(4) Single(4) | F | F | | Length of the segment (in kms) |
| Joint | Text(10) | F | F | | Join type |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| SourceId | Long(4) Long Integer(4) | F | F | | Identification of the source |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.22 Earthquake Specific Potable Water Pipeline Table: eqPotableWaterPI

| Identification: | | eqPotableWaterPl | | | | | |
|----------------------|---------------------------------|---|------------|---------------|--------|--|--|
| Туре: | | ESRI Table | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides Earthquake Model specific information of potable water pipelines. It includes the unique id (PotableWaterPlId) for each record in hzPotableWaterPl. During the creation of a study region, the table content is transferred to a table with the same name (eqPotableWaterPl) in the SQL Server database in the Region folder. The SQL server table includes additional fields that are populated subsequently. There must be one record in eqPotableWaterPl for each record in hzPotableWaterPl with same PotableWaterPLId unique identifier. | | | | | |
| Data: | | | | | | | |
| Feature Class Fi | eld Definition | on | | | | | |
| Name | ESRI Typ (Size) Access Type (S | | Index * | Require d* | Values | Description | |
| PotableWaterPl Id | Text(8) | | T, U, | T, UC | | Unique identifier for each record. It relates this eqPotableWaterPl feature class with the associated hzPotableWaterPl in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | |
| GClass | Text(1) | | F | F | | For network analysis ** | |
| Status | Double(8) |) | F | F | | For network analysis ** | |
| UpNode | Text(5) | | F | F | | For network analysis ** | |
| DownNode | Text(5) | | F | F | | For network analysis ** | |
| Roughness | Double(8) |) | F | F | | For network analysis ** | |

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| | Currency(8) | | | |
|---------|-------------|---|---|-------------------------|
| MinLoss | Double(8) | F | F | For network analysis ** |
| | Currency(8) | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

** Hazus-MH does not include a tool for analyzing potable water networks such as POWSAN (Potable Water System

Analysis Model) included in Hazus 99.

F.7.3.23 Flood Specific Potable Water Pipeline Table: flPotableWaterPl

| Identification: | | flPo | tableWa | nterPl | | | | | |
|---------------------|-----------------------|--|------------|-------------|--------------------|--------------------------------------|--|--|--|
| Type: | | ESR | ESRI Table | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides Flood Model specific information of potable | | | | | | | |
| | | water pipelines. During the creation of a study region, the table content is | | | | | | | |
| | | transferred to a table with the same name (flPotableWaterPl) in the SQL | | | | | | | |
| | | Server database in the Region folder. Data are subsequently used for Hazus- | | | | | | | |
| | | MH Flood Model estimation of hazards, damages, and loss of functionality. | | | | | | | |
| | | The | re must | be one reco | rd in flPotableWat | erPl for each record in | | | |
| | | hzP | otableW | aterPl with | same PotableWate | rPlId unique identifier. | | | |
| Data: | | | | | | | | | |
| Feature Class Field | l Definition | on | | | | | | | |
| Name | ESRI | | Index | Require | Values | Description | | | |
| | Type | | * | d* | | | | | |
| | (Size) | | | | | | | | |
| | Access Type (Size) | e | | | | | | | |
| PotableWaterPlId | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | | |
| | | | A | | | It relates this flPotableWaterPl | | | |
| | | | | | | feature class with the associated | | | |
| | | | | | | hzPotableWaterPl in a one-to- | | | |
| | | | | | | one relationship. The standard | | | |
| | | | | | | format adopted by Hazus is | | | |
| | | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | | name abbreviation (Upper case) | | | |
| | | | | | | and xxxxxx is a sequential | | | |
| | | | | | | number from 000001 to 999999. | | | |
| SystemId | Text(5) | | F | F | | Utility indicator. This field is not | | | |
| | | | | | | used in the current version MR3 | | | |
| | | | | | | of Hazus-MH | | | |
| VulnbltyToScour | Text(10 |) | F | F | | Vulnerability to scour. Field for | | | |
| | | | | | | future development. | | | |
| IDUpperJunction | Short(2) |) | F | F | | Field for future development | | | |
| | Integer(2) | | | | | | | | |

| IDLowerJunction | Short(2) | F | F | | Field for future development |
|-------------------|-------------|--------|------------|-------------------|------------------------------|
| | Integer(2) | | | | |
| DamageFnId | Text(10) | F | F | | Field for future development |
| * T=True; F=False | ; U=Unique; | NU=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |
| LC=Lowercase | | | | | |

F.7.3.24 Potable Water Distribution Pipes Table: eqPotableWaterDL

| Identification: | | eqPotableWaterDL | | | | | | | |
|-----------------|------------------|------------------|--------------------------------------|-------------------|---|--|--|--|--|
| Type: | | ESRI Table | | | | | | | |
| Purpose: | | Belongs to | length of potable water distribution | | | | | | |
| | | pipelines ag | ggregated by | census tract. | Only the Earthquake Model estimates | | | | |
| | | damage, los | sses and fun | ctionality for th | he pipeline components of the potable | | | | |
| | | water syste | m. During t | he creation of a | study region, the content of the table is | | | | |
| | | transferred | to a table w | ith the same na | me (eqPotableWaterDL) in the SQL | | | | |
| | | Server data | base in the | Region folder. | The SQL server table includes | | | | |
| | | additional f | ields that ar | e populated sul | bsequently. There must be one record in | | | | |
| | | eqPotableW | VaterDL for | each record in | hzTract feature class in the State | | | | |
| | | syBoundary.mdb. | | | | | | | |
| Data: | | | | | | | | | |
| Feature Class | Field Definition | on | | | | | | | |
| Name | ESRI Type | e Index | Require | Values | Description | | | | |
| | (Size) | * | d* | | | | | | |
| | Access Type (S | ize) | | | | | | | |
| Tract | Text(11) | T, U, | T, UC | | 11 digits of the 2000 US Census | | | | |
| | | A | | | tract number | | | | |
| DuctilePipe | Float(4) | F | F | | Total length of ductile | | | | |
| | Single(4) | | | | distribution pipes (in kms) | | | | |
| BrittlePipe | Float(4) | F | F | | Total length of brittle distribution | | | | |
| | Single(4) | | | | pipes (in kms) | | | | |
| TotalPipe | Float(4) | F | F | | Total length of distribution pipes | | | | |
| | Single(4) | | | | (in kms) | | | | |
| * T=True; F=F | False; U=Uniq | ue; NU=No | n-Unique; A | =Ascending; Γ | D=Descending; UC=Uppercase; | | | | |
| LC=Lowercas | e | | | | | | | | |
| | | | | | | | | | |

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F.7.3.25 Waste Water Facilities Feature Class: hzWasteWaterFlty

| Identification: | | hzWasteWaterFlty | | | | | | | |
|---------------------|----------------------|--|---------|----------------------------------|--|--|--|--|--|
| Type: | | ESRI Point Feature Class | | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides the geometry of wastewater facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzWasteWaterFlty) in the SQL | | | | | | | |
| | | | | 9 | are subsequently used for Hazus- | | | | |
| Data: | | | | | | | | | |
| Feature Class Field | Definition | n | | | | | | | |
| Name | ESRI | Index | Require | Values | Description | | | | |
| | Type (Size) | * | d* | | | | | | |
| | Access Typ (Size) | e | | | | | | | |
| WasteWaterFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this hzWasteWaterFlty feature class with the associated eqWasteWaterFlty and flWasteWaterFlty tables. The standard format adopted by Hazus is SSxxxxxx where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | | |
| UtilFcltyClass | Text(5) | T, NU, A | T, UC | See Appendix B, Table B.14. | Indicates facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model. | | | | |
| Tract | Text(11 |) T, NU, | Т | 11 digits of the Census tract | 2000 US Census tract number | | | | |

| | | A | | number | |
|--------------|--------------------------|---|---|-----------------------------------|---|
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or 30067-2564 or 300672564 |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact name |
| PhoneNumber | Text(14) | F | F | | Facility phone number |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was built |
| Use | Text(10) | F | F | | Use |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| BackupPower | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Availability of backup power |
| Capacity | Long(4) Long Integer(4) | F | F | | Capacity (million gallons/day) |
| GClass | Text(1) | F | F | | For network analysis. Hazus-MH does not include a tool to analyze water networks such as POWSAN included in Hazus 99. |
| NumStories | Short(1) Byte(1) | F | F | | Number of stories |
| SystemId | Text(5) | F | F | | Identifier for the waste water system |
| YearUpgraded | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year structure was upgraded |

| Demand | Float(4) | F | F | | Demand (million gallons/day) |
|-----------|-----------|---|---|------------------|------------------------------|
| | Single(4) | | | | |
| Latitude | Double(8 | F | F | Latitude decimal | Latitude |
| |) | | | degrees | |
| | Double(8) | | | | |
| Longitude | Double(8 | F | F | Longitude | Longitude |
| |) | | | decimal degrees | |
| | Double(8) | | | | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.7.3.26 Earthquake Specific Waste Water Facilities Table: eqWasteWaterFlty

| Identification: | | eqWasteWaterFlty | | | | | | | | | |
|-------------------|-----------------------|--|--|---------------|---------------------------------|------------------------------------|--|--|--|--|--|
| Type: | | ES | | | | | | | | | |
| Purpose: | | Bel | longs to | UTIL.mdb. | e Model specific information of | | | | | | |
| | | waste water facilities. During the creation of a study region, the table content | | | | | | | | | |
| | | is transferred to a table with the same name (eqWasteWaterFlty) in the SQL | | | | | | | | | |
| | | Server database in the Region folder. Data are subsequently used for Hazus- | | | | | | | | | |
| | | | MH EQ Model estimation of hazards, damages, and loss of functionality. | | | | | | | | |
| | | | There must be one record in eqWasteWaterFlty for each record in | | | | | | | | |
| | | hzV | WasteWa | iterFlty with | n same WasteWaterI | FltyId unique identifier. | | | | | |
| Data: | | | | | | | | | | | |
| Feature Class Fie | eld Definiti | on | | | | | | | | | |
| Name | ESRI Ty | ре | Index | Require | Values | Description | | | | | |
| | (Size) | | * | d* | | | | | | | |
| | Access Type (Size) | | | | | | | | | | |
| WasteWaterFlty | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | | | | |
| Id | | | A | | | It relates this eqWasteWaterFlty | | | | | |
| | | | | | | feature class with the associated | | | | | |
| | | | | | | hzWasteWaterFlty in a one-to- | | | | | |
| | | | | | | one relationship. The standard | | | | | |
| | | | | | | format adopted by Hazus is | | | | | |
| | | | | | | SSxxxxxx, where SS is the state | | | | | |
| | | | | | | name abbreviation (upper case) | | | | | |
| | | | | | | and xxxxxx is a sequential | | | | | |
| | | | | | | number from 000001 to 999999. | | | | | |
| eqBldgType | Text(4) | | F | T, UC | See Appendix B, | The building type that will be | | | | | |
| | | | | | Table B-2. | modeled in Hazus earthquake | | | | | |
| | | | | | | scenarios. See Appendix B, | | | | | |
| | | | | | | Table B.2, for complete | | | | | |
| | | | | | | description of available model | | | | | |
| | | | | | | building types. | | | | | |

| DesignLevel | Text(2) | F | T, UC | HC = High-Code MC = Moderate- Code LC = Low-Code PC = Pre-Code HS = Special High-Code MS = Special Moderate-Code LS = Special Low-Code | Building codes in effect in the area. See Earthquake Technical Manual, Chapters 3 and 5, for detailed information about design levels. |
|----------------|---------------------|---|-------|--|--|
| Anchor | Short(1) Yes/No(1) | F | F | 0 = No 1 = Yes | Indicates whether the facility is anchored to provide additional resistance to seismic forces. |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). This field is in the table for future extensibility of the earthquake model, but does not need to be populated at this time. |
| SoilType | Text(1) | F | T, UC | See Appendix B, table B.1 | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based upon shear wave velocity. See Appendix B, Table B.1, for details. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual |

| | | | | | (Section 4.2, Ground Failure) for liquefaction discussion. |
|------------------|--------------------|--------|------------|-------------------|--|
| WaterDepth | Float(4) Single(4) | F | F | Null ≥ 0 | Water table depth in feet. Values must be greater than 0. Range: 0 – 300 meters. |
| * T=True; F=Fals | se; U=Unique; | NU=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |

F.7.3.27 Flood Specific Waste Water Facilities Table: flWasteWaterFlty

| Identification: | | flW | asteWat | erFlty | | | | | |
|----------------------------|------------------|---|----------|--------------|---------------|--|--|--|--|
| Type: | | ES | RI Table | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides Flood Model specific information of waste | | | | | | | |
| | | water facilities. During the creation of a study region, the table content is | | | | | | | |
| | | transferred to a table with the same name (flWasteWaterFlty) in the SQL | | | | | | | |
| | | Server database in the Region folder. Data are subsequently used for Hazus- | | | | | | | |
| | | MH Flood Model estimation of hazards, damages, and loss of functionality. | | | | | | | |
| | | There must be one record in flWasteWaterFlty for each record in | | | | | | | |
| | | hzV | WasteWa | terFlty with | n same WasteW | aterFltyId unique identifier. | | | |
| Data: | | | | | | | | | |
| Feature Class Fiel | ld Definition | on | | | | | | | |
| Name | ESRI Ty | pe | Index | Require | Values | Description | | | |
| | (Size) | | * | d* | | | | | |
| | Access Type | | | | | | | | |
| | (Size) | | | | | | | | |
| WasteWaterFlty | Text(8) | | T, U, | T, UC | | Unique identifier for each record. | | | |
| Id | | | A | | | It relates this flWasteWaterFlty | | | |
| | | | | | | feature class with the associated | | | |
| | | | | | | hzWasteWaterFlty in a one-to- | | | |
| | | | | | | one relationship. The standard | | | |
| | | | | | | format adopted by Hazus is | | | |
| | | | | | | SSxxxxxx, where SS is the state | | | |
| | | | | | | name abbreviation (upper case) | | | |
| | | | | | | and xxxxxx is a sequential | | | |
| | | | | | | number from 000001 to 999999. | | | |
| UtilIndicator | Short(2) | | F | F | | Utility indicator. This field is not | | | |
| | Integer(2) | | | | | used in the current version MR3 | | | |
| · · | | | | | | of Hazus-MH. | | | |
| | | | | | | | | | |
| FoundationType | Text(1) | | F | F | | Foundation type (e.g., slab, pile) | | | |
| FoundationType EquipmentHt | Text(1) Double(8 | 3) | F F | F F | | Foundation type (e.g., slab, pile) Average height of electrical | | | |
| | ` ' | 3) | | | | | | | |
| | Double(8 | 3) | | | | Average height of electrical | | | |

| | Integer(2) | | | which the structure is protected |
|----------------|------------|---|---|---|
| UtilDamageFnId | Text(10) | F | F | Originally intended to allow users to define facility specific damage curves. Utility damage functions are not used in version MR3 of Hazus-MH. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.7.3.28 Waste Water Pipelines Feature Class: hzWasteWaterPl

| Identification: | | hz | WasteWa | nterPl | | | | | |
|-------------------|--------------------------------------|---------------------------------|--|------------|--------------------------------|---|--|--|--|
| Type: | | ES | ESRI Line Feature Class | | | | | | |
| Purpose: | | Du trai info the Ha | Belongs to UTIL.mdb. Provides the geometry of waste water pipelines. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named UTIL.mdb in the Region folder. Field information is transferred to a table with the same name (hzWasteWaterPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH estimation of hazards, damages, and loss of functionality, as well as mapping. | | | | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Definiti | ion | | | | | | | |
| Name | ESRI Type (Size) Access Type (Size) | | Index * | Require d* | Values | Description | | | |
| WasteWaterPlId | Text(8) | | T, U,A | T, UC | | Unique identifier for each record. It relates this hzWasteWaterPl feature class with the associated eqWasteWaterPl and flWasteWaterPl tables. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| PipelinesClass | Text(5) | | T, NU, A | T, UC | See Appendix B, Table B.14. | Indicates facility classification. It is used by Hazus-MH to identify the appropriate damage curve for assessing loss estimations produced by the EQ Model. | | | |
| CountyFips | Text(5) | | T, NU, A | Т | Five-digit FIPS county code | Five-digit FIPS County code. First two digits are the state FIPS; the remaining three digits | | | |

| | | | | | the county code. |
|------------|--------------------------|---|---|-----------------------------------|---------------------------------|
| Name | Text(40) | F | F | | Facility name |
| Owner | Text(25) | F | F | | Facility owner |
| Material | Text(10) | F | F | | Material type |
| Diameter | Double(8) Currency(8) | F | F | | Diameter (in inches) |
| PipeLength | Float(4) Single(4) | F | F | | Length of the segment (in kms) |
| Joint | Text(10) | F | F | | Join type |
| YearBuilt | Short(2) Integer(2) | F | F | Null or (≥ 1500 and ≤ 2100) | Year the structure was built |
| Cost | Double(8) Currency(8) | F | F | | Replacement cost (in thousands) |
| SourceId | Long(4) Long Integer(4) | F | F | | Identification of the source |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.7.3.29 Earthquake Specific Waste Water Pipeline Table: eqWasteWaterPl

| Identification: | | eq' | WasteWa | iterPl | | | | | |
|-------------------|----------------------|----------|-------------|------------------|------------------|--|--|--|--|
| Type: | | | ESRI Table | | | | | | |
| Purpose: | | Be | longs to | UTIL.mdb. | Provides Earth | quake Model specific information of | | | |
| | | wa | ste water | pipelines. | t includes a uni | que id (WasteWaterPlId) for each | | | |
| | | rec | ord in hz | WasteWate | rPl. During the | creation of a study region, the table | | | |
| | | coı | ntent is tr | ansferred to | a table with th | e same name (eqWasteWaterPl) in the | | | |
| | | SQ | L Server | database ir | the Region fol | der. The SQL server table includes | | | |
| | | ado | ditional f | ields that ar | e populated sub | sequently. There must be one record in | | | |
| | | eq' | WasteWa | terPl for ea | ch record in hz | WasteWaterPl with same | | | |
| | | Wa | asteWate | rPLId uniqu | ie identifier. | | | | |
| Data: | | | | | | | | | |
| Feature Class Fie | ld Dofiniti | <u> </u> | | | | | | | |
| | | | • | 1 | | | | | |
| Name | ESRI Ty | ype | Index | Require | Values | Description | | | |
| | (Size) | | * | d* | | | | | |
| | Access Type Size) | 2 | | | | | | | |
| WasteWaterPlId | Text(8) | | T, U, | T, UC | | Unique identifier for each record | | | |
| | | | A | | | It relates this eqWasteWaterPl | | | |
| | | | | | | feature class with the associated | | | |
| | | | | | | hzWasteWaterPl in a one-to-one | | | |
| | | | | | | relationship. The standard format | | | |
| | | | | | | adopted by Hazus is SSxxxxxx, | | | |
| | | | | | | where SS is the state name | | | |
| | | | | | | abbreviation (upper case) and | | | |
| | | | | | | xxxxxx is a sequential number | | | |
| | | | | | | from 000001 to 999999. | | | |
| * T=True; F=Fals | se; U=Uni | que; | NU=Nor | ı n-Unique; A | =Ascending; D | =Descending; UC=Uppercase; | | | |
| LC=Lowercase | | - " | | • | | | | | |

F.7.3.30 Flood Specific Waste Water Pipeline Table: flWasteWaterPl

| Identification: | | flWasteWaterPl | | | | | | |
|---------------------|-------------------------------------|--|---------------|--------|---|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to UTIL.mdb. Provides Flood Model specific information of waste water pipelines. During the creation of a study region, the table content is transferred to a table with the same name (flWasteWaterPl) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH Flood Model estimation of hazards, damages, and loss of functionality. There must be one record in flWasteWaterPl for each record in hzWasteWaterPl with same WasteWaterPlId unique identifier. | | | | | | |
| Data: | | | | | | | | |
| Feature Class Field | d Definition | on | | | | | | |
| Name | ESRI Type (Size) Access Type Size) | Index * | Require d* | Values | Description | | | |
| WasteWaterPlId | Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this ftWasteWaterPl feature class with the associated hzWasteWaterPl in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | | | |
| SystemId | Text(5) | F | F | | Utility indicator. This field is not used in the current version MR3 of Hazus-MH | | | |
| VulnbltyToScour | Text(10 |) F | F | | Vulnerability to scour. Field for future development. | | | |
| IDUpperJunction | Short(2) Integer(2) | F | F | | Field for future development | | | |

| IDLowerJunction | Short(2) | F | F | | Field for future development |
|--|------------|---|---|--|------------------------------|
| | Integer(2) | | | | |
| DamageFnId | Text(10) | F | F | | Field for future development |
| | | | | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | |
| LC=Lowercase | | | | | |

F.7.3.31 Waste Water Distribution Pipes Table: eqWasteWaterDL

| Identification: | | eqWasteWaterDL | | | | | | |
|-----------------|-----------|----------------|---------------|-----------------------|---|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs to | UTIL.mdb. | Provides total leng | th of waste water distribution | | | |
| | | pipelines ag | gregated by | y census tract. Only | the Earthquake Model estimates | | | |
| | | damage, los | sses and fun | ctionality for the pi | ipeline components of the waste | | | |
| | | water system | m. During t | he creation of a stud | dy region, the table content is | | | |
| | | transferred | to a table w | rith the same name | (eqWasteWaterDL) in the SQL | | | |
| | | Server data | base in the | Region folder. The | SQL server table includes | | | |
| | | additional f | ields that ar | re populated subseq | uently. There must be one record in | | | |
| | | eqWasteWa | aterDL for e | each record in hzTra | act feature class in the State | | | |
| | | syBoundary | v.mdb. | | | | | |
| Data: | | | | | | | | |
| | | Fe | eature Class | Field Definition | | | | |
| Name | ESRI Typ | e Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Ty | pe | | | | | | |
| | (Size) | | | | | | | |
| Tract | Text(11) | T, U, | T, UC | 11 digits of the | 11 digits of the census tract number | | | |
| | | A | | census tract | | | | |
| | | | | number | | | | |
| DuctilePipe | Float(4) | F | F | | Total length of ductile distribution pipes | | | |
| | Single(4) | | | | (in kms) | | | |
| BrittlePipe | Float(4) | F | F | | Total length of brittle distribution pipes | | | |
| 1 | Single(4) | | | | (in kms) | | | |
| TotalPipe | Float(4) | F | F | | Total length of distribution pipes (in kms) | | | |
| 10mii ipe | | 1 | | | | | | |
| | Single(4) | | | | | | | |
| · | | que; NU=Noi | n-Unique; A | A=Ascending; D=D | escending; UC=Uppercase; | | | |
| LC=Lowercas | e | | | | | | | |

F.8 High Potential Loss Facilities: HPLF.mdb

F.8.1 Database Overview

HPLF.mdb is an Access personal geodatabase that contains feature *classes* for HPLF with

fields relevant to all hazards and tables with information specific to Earthquake Model.

HPLFs are those likely to cause severe loss if damaged. Damage and loss estimation

calculations for HPLFs are not performed by Hazus-MH.

HPLFs include nuclear power plants, dams, levees, and some military installations.

Hazardous material facilities and levees are also included in HPLF.mdb. Hazardous

material facilities contain substances that can pose significant hazards because of their

toxicity, radioactivity, flammability, explosiveness, or reactivity. Similar to other facilities

with high potential loss, Hazus-MH models do not estimate losses caused by hazardous

material releases and levee failures based on the inventory data.

The geographical domain of the database is the state. In that case, there is one HPLF.mdb

database for each state, each located in the appropriate State folder.

During the creation of a study region, for all hazards, HPLF geometries from feature

classes are transferred to a geodatabase named HPLF.mdb in the Region folder. Feature

classes are named with the prefix hz that means that are relevant across all Hazus-MH

models. Dams, for instance, are stored in hzDams feature class with fields containing

information common to all hazards. This information is transferred to a table with the same

name (for dams, hzDams) in the SQL Server database in the Region folder.

Hazard specific tables are named with the prefix eq (earthquake) such as eqDams. The

information is transferred to tables with the same name in the SQL Server database in the

Region folder. There is a one-to-one relationship between hz tables and the corresponding

eq table through a unique identifier.

F.8.2 Identification

HPLF.mdb

F.8.3 Database Content

The HPLF.mdb database includes:

| Name | Туре | Content |
|---------------|--------------------|--|
| hzDams | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | dams structures |
| hzHazmat | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | hazardous material facilities |
| hzLevees | ESRI Line Feature | Geometry (line features) and all-hazards information of |
| | Class | levees |
| hzMilitary | ESRI Point Feature | Geometry (point features) and all-hazards information of |
| | Class | military facilities |
| hzNuclearFlty | ESRI Line Feature | Geometry (line features) and all-hazards information for |
| | Class | nuclear facilities |
| eqDams | ESRI Table | Earthquake specific information for dam structures |
| eqHazmat | ESRI Table | Earthquake specific information for hazardous material |
| | | facilities |
| eqLevees | ESRI Table | Earthquake specific information for levees |
| eqMilitary | ESRI Table | Earthquake specific information for military installations |
| eqNuclearFlty | ESRI Table | Earthquake specific information for nuclear facilities |

F.8.3.1 Dams Feature Class: hzDams

| Identification: | hzDams | | | |
|--------------------------------|---|--|--|--|
| Type: | ESRI Point Feature Class | | | |
| Purpose: | Belongs to HPLF.mdb. Provides the geometry of dam facilities. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named HPLF.mdb in the Region folder. Field information is transferred to a table with the same name (hzDams) in the SQL Server database in the Region folder. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|-------------|-------|---------|------------------|---|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| DamId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>hzDams</i> feature |
| | | | | | class with the associated <i>eqDams</i> |
| | | | | | table. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| DamClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification |
| | | NU, | | Table B.5. | |
| | | A | | | |
| Tract | Text(11) | Т, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| CountyName | Text(30) | F | F | | County where facility is located |
| Owner | Text(25) | F | F | | Facility owner |
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| River | Text(30) | F | F | | Name of river on which dam is |
| | | | | | located |
| NearCity | Text(30) | F | F | | Nearest city downstream from |
| | | | | | dam |
| DistanceCity | Float(4) | F | F | | Distance of nearest city |
| | Single(4) | | | | downstream from dam (in miles) |
| Purpose | Text(10) | F | F | | Purposes for which reservoir is |
| | | | | | used |
| YearCompl | Short(2) | F | F | Null or | Year original main dam structure |

| | Integer(2) | | | (≥ 1500 and ≤ | was completed |
|--------------|------------|---|---|---------------|-------------------------------------|
| | | | | 2100) | |
| DamLength | Float(4) | F | F | | Dam length, in feet (defined as |
| | Single(4) | | | | length along top of dam) |
| DamHeight | Float(4) | F | F | | Dam height, in feet (defined as |
| | Single(4) | | | | vertical distance between the |
| | | | | | lowest point on the crest of the |
| | | | | | dam and the lowest point in the |
| | | | | | original streambed) |
| StructHeight | Float(4) | F | F | | Structural height of the dam, in |
| | Single(4) | | | | feet (defined as the vertical |
| | | | | | distance from the lowest point of |
| | | | | | the excavated foundation to the |
| | | | | | top of the dam) |
| MaxDischarge | Float(4) | F | F | | Maximum storage, in acre-feet |
| | Single(4) | | | | (defined as the total storage |
| | | | | | space in a reservoir below the |
| | | | | | maximum attainable water |
| | | | | | surface elevation, including any |
| | | | | | surcharge storage) |
| HydroHeight | Float(4) | F | F | | Hydraulic height of dam, in feet, |
| | Single(4) | | | | (defined as the vertical difference |
| | | | | | between the maximum design |
| | | | | | water level and the lowest point |
| | | | | | in the original streambed) |
| MaxStorage | Float(4) | F | F | | Maximum storage, in acre-feet |
| | Single(4) | | | | (defined as the total storage |
| | | | | | space in a reservoir below the |
| | | | | | maximum attainable water |
| | | | | | surface elevation, including any |
| | | | | | surcharge storage) |
| NormStorage | Float(4) | F | F | | Normal storage, in acre-feet |
| | Single(4) | | | | (defined as the total storage |
| | | | | | space in a reservoir below the |
| | | | | | normal retention level, including |

| | | | | dead and inactive storage and excluding any flood control or surcharge storage) |
|-------------|--------------------|---|---|---|
| SurfaceArea | Float(4) Single(4) | F | F | Surface area, in acres, of the impoundment at its normal retention level |
| DrainArea | Float(4) Single(4) | F | F | Drainage area of the dam, in square miles (defined as the area that drains to the reservoir) |
| Hazard | Text(1) | F | F | Code indicating the potential hazard to the downstream area resulting from failure or malfunctioning of the dam or facilities: $L = Low$ $S = Significant$ $H = High$ |
| EAP | Text(2) | F | F | Code indicating whether the dam has an emergency action plan (EAP) developed by the dam owner. An EAP is defined as a plan of action to be taken to reduce the potential for property damage and loss of life in an area affected by a dam failure or large flood. Y = Yes N = No NR = Not required by submitting agency |
| SpillType | Float(4) Single(4) | F | F | Code that describes spillway type: C = Controlled U = Uncontrolled |

| | | | | | N = None |
|--|-----------|---|---|------------------|------------------------------------|
| Volume | Float(4) | F | F | | Total number of cubic yards |
| | Single(4) | | | | occupied by the materials used in |
| | | | | | the dam structure. Portions of |
| | | | | | powerhouse, locks, and spillways |
| | | | | | are included only if they are an |
| | | | | | integral part of the dam and |
| | | | | | required for structural stability. |
| NATID | Text(7) | F | F | | The official National Inventory |
| | | | | | of Dams identification number |
| | | | | | for the dam (formerly known as |
| | | | | | the National ID) |
| PrimaryAgency | Text(20) | F | F | | Primary source agency from |
| | | | | | which the data was derived. |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude | Longitude |
| | Double(8) | | | decimal degrees | |
| Comment | Text(40) | F | F | | Comments |
| * T=True: F=False: U=Unique: NU=Non-Unique: A=Ascending: D=Descending: UC=Unpercase: | | | | | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.8.3.2 Earthquake Specific Dams Table: eqDams

| Identification: | eqDams | | | |
|--------------------------------|--|--|--|--|
| Type: | ESRI Table | | | |
| Purpose: | Belongs to HPLF.mdb. Provides Earthquake Model specific information of dams. During the creation of a study region, the table content is transferred to a table with the same name (<i>eqDams</i>) in the SQL Server database in the Region folder. There must be one record in <i>eqDams</i> for each record in | | | |
| Data | hzDams with same DamId unique identifier. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Comparison of the properties of the state | Name | ESRI Type | Index | Require | Values | Description |
|--|----------------|-----------------|--------|------------|-------------------|--------------------------------------|
| Damld Text(8) T, U, A T, UC It relates this eqDams feature class with the associated hzDams in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoifType Text(1) Text(1) Text(1) Touc See Appendix B, Table B.1. Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) Short(1) Byte(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 – 300 meters. | | (Size) | * | d* | | |
| Damld Text(8) T, U, A T, UC It relates this eqDams feature class with the associated hzDams in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoifType Text(1) Text(1) Text(1) Touc See Appendix B, Table B.1. Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) Short(1) Byte(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 – 300 meters. | | Access Type | | | | |
| A A It relates this eqDams feature class with the associated hzDams in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoilType Text(1) F T, UC See Appendix B, National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. Water Lepth Float(4) F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | |
| A A It relates this eqDams feature class with the associated hzDams in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoilType Text(1) T, UC See Appendix B, National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. Water Lepth Float(4) F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | DamId | Text(8) | T. U. | T. UC | | Unique identifier for each record. |
| class with the associated hzDams in a one-to-one relationship. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoilType Text(1) F T, UC See Appendix B, Table B.1. Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. Water Lepth Float(4) F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | 1 1(1) | | , | | |
| standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoilType Text(1) F T, UC See Appendix B, Table B.1. National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | _ |
| standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 999999. SoilType Text(1) F T, UC See Appendix B, Table B.1. National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | in a one-to-one relationship. The |
| the state name abbreviation (upper case) and xxxxxx is a sequential number from 000001 to 9999999. SoilType Text(1) F T, UC See Appendix B, Table B.1. Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | standard format adopted by |
| Continue | | | | | | Hazus is SSxxxxxx, where SS is |
| SoilType Text(1) T | | | | | | the state name abbreviation |
| SoilType Text(1) Text(1) Text(1) Touc See Appendix B, Table B.1. Table B.1. Table B.1. Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) Touc See Appendix B, Table B.1, for details. Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) Single(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | (upper case) and xxxxxx is a |
| SoilType Text(1) Text(1) Text(1) Totale B.1. Table B.1. Reduction Program (NEHRP) Soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) Short(1) Byte(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | | sequential number from 000001 |
| | | | | | | to 999999. |
| soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) F F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. LqfSusCat Short(1) Byte(1) F F Null or 0 to 5 Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. LndSusCat Short(1) Byte(1) F Null or 0 to 10 Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) Single(4) F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 − 300 meters. | | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | | soil classification that defines the |
| $LqfSusCat \qquad Short(1) \qquad F \qquad F \qquad Null \ or \ 0 \ to \ 5 \qquad Indicates \ liquefaction \\ Susceptibility \ of \ the \ facility \\ location. \ See \ Earthquake \\ Technical \ Manual \ (Section \ 4.2, \\ Ground \ Failure) \ for \ liquefaction \\ discussion. \\ Indicates \ liquefaction \ discussion. \\ Short(1) \qquad F \qquad F \qquad Null \ or \ 0 \ to \ 10 \qquad Indicates \ landslide \ susceptibility \\ of \ the \ facility \ location. \ See \\ Earthquake \ Technical \ Manual \ (Section \ 4.2, Ground \ Failure) \ for \ the \ facility \ location. \ See \\ Earthquake \ Technical \ Manual \ (Section \ 4.2, Ground \ Failure) \ for \ liquefaction \ discussion. \\ WaterDepth \qquad Float(4) \qquad F \qquad F \qquad Null \ \geq 0 \qquad Water \ table \ depth \ in \ feet. \ Values \\ must \ be \ greater \ than \ 0. \ Range: \ 0 \\ -300 \ meters. \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ $ | | | | | | conditions where the structure is |
| $LqfSusCat \qquad Short(1) \qquad F \qquad F \qquad Null \ or \ 0 \ to \ 5 \qquad Indicates \ liquefaction \\ susceptibility of the facility \\ location. See Earthquake \\ Technical Manual (Section 4.2, \\ Ground Failure) for liquefaction \\ discussion. \\ \\ LndSusCat \qquad Short(1) \qquad F \qquad F \qquad Null \ or \ 0 \ to \ 10 \qquad Indicates \ landslide \ susceptibility \\ of the facility location. See \\ Earthquake \ Technical Manual \\ (Section 4.2, Ground \ Failure) for \\ liquefaction \ discussion. \\ \\ WaterDepth \qquad Float(4) \qquad F \qquad F \qquad Null \ \ge 0 \qquad Water \ table \ depth \ in feet. \ Values \\ must \ be \ greater \ than \ 0. \ Range: \ 0 \\ -300 \ meters. \\ \\$ | | | | | | located. This is based on shear |
| | | | | | | wave velocity. See Appendix B, |
| $Byte(1) \\ Byte(1) \\ Byte$ | | | | | | Table B.1, for details. |
| | LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | | Byte(1) | | | | susceptibility of the facility |
| | | | | | | location. See Earthquake |
| | | | | | | Technical Manual (Section 4.2, |
| | | | | | | · - |
| $Byte(1) \\ Byte(1) \\ Single(4) \\ Byte(1) \\ Single(4) \\ Byte(1) \\ Single(4) \\ $ | | | | | | discussion. |
| Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 -300 meters. | LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | | Byte(1) | | | | of the facility location. See |
| | | | | | | _ |
| WaterDepth Float(4) F F Null ≥ 0 Water table depth in feet. Values must be greater than 0. Range: 0 -300 meters. | | | | | | |
| Single(4) must be greater than 0. Range: 0 - 300 meters. | | | | | | liquefaction discussion. |
| - 300 meters. | WaterDepth | Float(4) | F | F | $Null \ge 0$ | Water table depth in feet. Values |
| | | Single(4) | | | | must be greater than 0. Range: 0 |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | – 300 meters. |
| · · · · · · · · · · · · · · · · · · · | * T=True; F=Fa | alse; U=Unique; | NU=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |

| LC=Lowercase | , |
|--------------|---|
|--------------|---|

F.8.3.3 Hazardous Material Facilities Feature Class: hzHazmat

| Identification: | hzHazmat |
|-----------------|--|
| Type: | ESRI Point Feature Class |
| Purpose: | Belongs to HPLF.mdb. Provides the geometry of hazardous material facilities. |
| | During the creation of a study region, for all hazards, geometries are |
| | transferred to a geodatabase named HPLF.mdb in the Region folder. Field |
| | information is transferred to a table with the same name (hzHazmat) in the |
| | SQL Server database in the Region folder. |
| Data: | |
| | Feature Class Field Definition |

| ESRI Type | Index | Require | Values | Description |
|-------------|---|---|---|---|
| (Size) | * | d* | | |
| Access Type | | | | |
| (Size) | | | | |
| Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | A | | | It relates this <i>hHazmat</i> feature |
| | | | | class with the associated |
| | | | | eqHazmat table. The standard |
| | | | | format adopted by Hazus is |
| | | | | SSxxxxxx, where SS is the state |
| | | | | name abbreviation (Upper case) |
| | | | | and xxxxxx is a sequential |
| | | | | number from 000001 to 999999. |
| Text(5) | T, | T, UC | | Indicates facility classification |
| | NU, | | | |
| | A | | | |
| Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | NU, | | Census tract | |
| | A | | number | |
| Text(40) | F | F | | Facility name |
| Text(40) | F | F | | Facility address |
| Text(40) | F | F | | City |
| Text(2) | F | F | | USPS state abbreviation |
| Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | 30067564 or 300672564 |
| Text(40) | F | F | | Facility contact person |
| Text(14) | F | F | | Facility phone number |
| Text(25) | F | F | | Facility owner |
| Text(10) | F | F | | Chemical Abstract Service |
| | | | | (CAS) number for hazardous |
| | | | | material |
| Text(20) | F | F | | Proper chemical name associated |
| | | | | with the CAS number of the |
| | (Size) Access Type (Size) Text(8) Text(8) Text(5) Text(11) Text(40) Text(40) Text(40) Text(40) Text(10) Text(10) Text(10) | (Size) * Access Type (Size) Text(8) T, U, A Text(5) T, NU, A Text(11) T, NU, A Text(40) F Text(40) F Text(40) F Text(2) F Text(10) F Text(10) F Text(10) F | (Size) * d* Access Type (Size) Text(8) T, U, T, UC A Text(5) T, T, UC NU, A Text(11) T, T NU, A Text(40) F F Text(40) F F Text(40) F F Text(2) F F Text(10) F F Text(14) F F Text(10) F F Text(14) F F Text(14) F F Text(15) F F Text(16) F F Text(16) F F Text(17) F F Text(18) F F Text(19) F F Text(19) F F Text(10) F F | (Size) * d* Access Type (Size) T, U, T, UC Text(8) T, U, T, UC A T, UC NU, A T 11 digits of the Census tract number Text(11) T, T T 11 digits of the Census tract number Text(40) F F Text(40) F F Text(2) F F Text(10) F F Text(40) F F Text(10) F F Text(25) F F Text(10) F F |

| | | | | | hazardous material |
|---------------|------------|---|---|------------------|--------------------------------|
| ChemicalQuant | Long(4) | F | F | | Quantity (in pounds) of the |
| | Long | | | | chemical at a hazardous |
| | Integer(4) | | | | materials facility |
| SIC | Text(10) | F | F | | Standard Industrial Code |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| EPAID | Text(2) | F | F | | Environmental Protection |
| | | | | | Agency (EPA) ID |
| PerAmount | Float(4) | F | F | | Amount of chemical (in pounds) |
| | Single(4) | | | | allowed by permit. |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude | Longitude |
| | Double(8) | | | decimal degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.8.3.4 Earthquake Specific Hazardous Material Facilities Table: eqHazmat

| Identification: | eqHazmat |
|-----------------|---|
| Type: | ESRI Table |
| Purpose: | Belongs to HPLF.mdb. Provides Earthquake Model specific information of |
| | hazardous material facilities. During the creation of a study region, the table |
| | content is transferred to a table with the same name (eqHazmat) in the SQL |
| | Server database in the Region folder. There must be one record in eqHazmat |
| | for each record in hzHazmat with same HazmatId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|----------------|-------------|-------|----------|-----------------|---|
| | (Size) | * | d* | | |
| | Access | | | | |
| | Type (Size) | | | | |
| HazmatId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this <i>eqHazmat</i> feature |
| | | | | | class with the associated |
| | | | | | hzHazmat in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | N | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | N | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate | area. See Earthquake Technical |
| | | | | -Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special | |
| | | | | High-Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special | |
| | | | | Low-Code | |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| | | | | | This field is in the table for |
| | | | | | future extensibility of the |
| | | | | | earthquake model, but does not |
| | <u> </u> | | <u> </u> | | |

| | | | | | need to be populated at this time. |
|------------|-----------|---|-------|-----------------|--------------------------------------|
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |
| | | | | | located. This is based on shear |
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | $Null \ge 0$ | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | - 300 meters. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.8.3.5 Levees Feature Class: hzLevees

| 1: | hzLevees | | | | | |
|-------------------------------------|--|--|--|---|--|--|
| | ESRI Lin | e Feature C | lass | | | |
| | Belongs to HPLF.mdb. Provides the geometry of levees. During the creation of a study region, for all hazards, geometries are transferred to a geodatabase named HPLF.mdb in the Region folder. Field information is transferred to a table with the same name (hzLeveest) in the SQL Server database in the Region folder. | | | | | |
| | | | | | | |
| | | Feature C | Class Field Definition | | | |
| ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | |
| Text(8) | T, U, | T, UC | | Unique identifier for each record. It relates this <i>hzLevees</i> feature class with the associated <i>eqLevees</i> table. The standard format adopted by Hazus is SSxxxxxx, where SS is the state name abbreviation (Upper case) and xxxxxx is a sequential number from 000001 to 999999. | | |
| Text(5) | T, NU, A | T | Five-digit FIPS county code | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three digits are the county code. | | |
| | ESRI Type (Size) Access Type (Size) Text(8) | ESRI Lin Belongs to of a study named H table with Region for the state of the stat | ESRI Line Feature Control Belongs to HPLF.mode of a study region, for named HPLF.mdb in table with the same received and the same of the s | ESRI Line Feature Class Belongs to HPLF.mdb. Provides the geor of a study region, for all hazards, geomet named HPLF.mdb in the Region folder. It table with the same name (hzLeveest) in Region folder. Feature Class Field Definition ESRI Type Index Require Values (Size) * d* Access Type (Size) Text(8) T, U, T, UC A T, U, T, UC Text(5) T, T Five-digit FIPS county code | | |

F.8.3.6 Earthquake Specific Levees Table: eqLevees

| Identification: | eqLevees |
|-----------------|--|
| Type: | ESRI Table |
| Purpose: | Belongs to HPLF.mdb. Provides Earthquake Model specific information of |
| | levees. During the creation of a study region, the table content is transferred to |
| | a table with the same name (eqLevee) in the SQL Server database in the |
| | Region folder. There must be one record in eqLevees for each record in |
| | hzLevees with same LeveeId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description | | | |
|--------------|----------------|---------|------------|-------------------|--|--|--|--|
| | (Size) | * | d* | | | | | |
| | Access Type | | | | | | | |
| | (Size) | | | | | | | |
| LeveeId | Text(8) | T, U, | T, UC | | Unique identifier for each record. | | | |
| | | A | | | It relates this <i>eqLevee</i> feature | | | |
| | | | | | class with the associated <i>hzLevee</i> | | | |
| | | | | | in a one-to-one relationship. The | | | |
| | | | | | standard format adopted by | | | |
| | | | | | Hazus is SSxxxxxx, where SS is | | | |
| | | | | | the state name abbreviation | | | |
| | | | | | (upper case) and xxxxxx is a | | | |
| | | | | | sequential number from 000001 | | | |
| | | | | | to 999999. | | | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard | | | |
| | | | | Table B.1. | Reduction Program (NEHRP) | | | |
| | | | | | soil classification that defines the | | | |
| | | | | | conditions where the structure is | | | |
| | | | | | located. This is based on shear | | | |
| | | | | | wave velocity. See Appendix B, | | | |
| | | | | | Table B.1, for details. | | | |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction | | | |
| | Byte(1) | | | | susceptibility of the facility | | | |
| | | | | | location. See Earthquake | | | |
| | | | | | Technical Manual (Section 4.2, | | | |
| | | | | | Ground Failure) for liquefaction | | | |
| | | | | | discussion. | | | |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility | | | |
| | Byte(1) | | | | of the facility location. See | | | |
| | | | | | Earthquake Technical Manual | | | |
| | | | | | (Section 4.2, Ground Failure) for | | | |
| | | | | | liquefaction discussion. | | | |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values | | | |
| | Single(4) | | | | must be greater than 0. Range: 0 | | | |
| | - 300 meters. | | | | | | | |
| * T=True; F= | False; U=Uniqu | e; NU=N | on-Unique; | A=Ascending; D=De | scending; UC=Uppercase; | | | |

| LC=Lowercase | L | owercas | se |
|--------------|---|---------|----|
|--------------|---|---------|----|

F.8.3.7 Military Facilities Feature Class: hzMilitary

| Identification: | hzMilitary | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to HPLF.mdb. Provides the geometry of military facilities. During | | | | |
| | the creation of a study region, for all hazards, geometries are transferred to a | | | | |
| | geodatabase named HPLF.mdb in the Region folder. Field information is | | | | |
| | transferred to a table with the same name (hzMilitary) in the SQL Server | | | | |
| | database in the Region folder. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | In | Require | Values | Description |
|----------------|-------------|----|---------|------------------|---|
| | (Size) | de | d* | | |
| | Access Type | x* | | | |
| | (Size) | | | | |
| MilitaryFltyId | Text(8) | Т, | T, UC | | Unique identifier for each record. |
| | | U, | | | It relates this <i>hzMilitary</i> feature |
| | | A | | | class with the associated |
| | | | | | eqMilitary table. The standard |
| | | | | | format adopted by Hazus is |
| | | | | | SSxxxxxx, where SS is the state |
| | | | | | name abbreviation (upper case) |
| | | | | | and xxxxxx is a sequential |
| | | | | | number from 000001 to 999999. |
| HplfClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification |
| | | N | | Table B.5. | |
| | | U, | | | |
| | | A | | | |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | N | | Census tract | |
| | | U, | | number | |
| | | A | | | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Facility address |
| City | Text(40) | F | F | | City |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Contact | Text(40) | F | F | | Facility contact person |
| PhoneNumber | Text(14) | F | F | | Facility phone number |
| NumStories | Short(1) | F | F | | Number of stories |
| | Byte(1) | | | | |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |

| | | | | 2100) | |
|-----------------|-------------|---|---|-------------------|---------------------------------|
| Owner | Text(25) | F | F | | Facility owner name |
| ShelterCapacity | Short(2) | F | F | | Shelter capacity. For |
| | Integer(2) | | | | informational purposes only and |
| | | | | | not used in any Hazus-MH |
| | | | | | calculations. Total number of |
| | | | | | persons who can be sheltered in |
| | | | | | this facility. |
| Use | Text(10) | F | F | | Facility use |
| BldgCost | Double(8) | F | F | | Building replacement cost (in |
| | Currency(8) | | | | thousands) |
| ContentCost | Double(8) | F | F | | Content replacement cost (in |
| | Currency(8) | | | | thousands) |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude decimal | Longitude |
| | Double(8) | | | degrees | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.8.3.8 Earthquake Specific Military Table: eqMilitary

| Identification: | eqMilitary | | | | | |
|--------------------------------|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | |
| Purpose: | Belongs to HPLF.mdb. Provides Earthquake Model specific information of military facilities. During the creation of a study region, the table content is transferred to a table with the same name (<i>eqSchool</i>) in the SQL Server database in the Region folder. There must be one record in <i>eqMilitary</i> for each record in <i>hzMilitary</i> with same <i>MilitaryId</i> unique identifier. | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI | Index | Require | Values | Description |
|----------------|---------|-------|---------|----------------------------|---|
| | Type | * | d* | | |
| | (Size) | | | | |
| | Access | | | | |
| | Туре | | | | |
| | (Size) | | | | |
| MilitaryFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | Α | -, | | It relates this <i>eqMilitary</i> feature |
| | | | | | class with the associated |
| | | | | | hzMilitary in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | N | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | N | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special High- | |
| | | | | Code | |
| | | | | | |
| | | | | MS = Special Moderate-Code | |
| | | | | | |
| | | | | LS = Special Low- | |
| | | | | Code | |
| FoundationType | Text(1) | F | F | | Foundation type (e.g., slab, pile). |
| | | | | | This field is in the table for |

| | | | | | future extensibility of the earthquake model, but does not need to be populated at this time. |
|------------|--------------------|---|-------|-------------------------------|--|
| SoilType | Text(1) | F | T, UC | See Appendix B, Table B.1. | National Earthquake Hazard Reduction Program (NEHRP) soil classification that defines the conditions where the structure is located. This is based on shear wave velocity. See Appendix B, Table B.1, for details. |
| LqfSusCat | Short(1) Byte(1) | F | F | Null or 0 to 5 | Indicates liquefaction susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| LndSusCat | Short(1) Byte(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility of the facility location. See Earthquake Technical Manual (Section 4.2, Ground Failure) for liquefaction discussion. |
| WaterDepth | Float(4) Single(4) | F | F | Null≥0 | Water table depth in feet. Values must be greater than 0. Range: 0 – 300 meters. |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.8.3.9 Nuclear Power Plants Feature Class: hzNuclearFlty

| Identification: | hzNuclearFlty | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Point Feature Class | | | | |
| Purpose: | Belongs to HPLF.mdb. Provides the geometry of nuclear power plant | | | | |
| | facilities. During the creation of a study region, for all hazards, geometries are | | | | |
| | transferred to a geodatabase named HPLF.mdb in the Region folder. Field | | | | |
| | information is transferred to a table with the same name (hzNuclearFlty) in | | | | |
| | the SQL Server database in the Region folder. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|------------------|------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| NuclearFltyId | Text(8) | T, U, | T, UC | | Unique identifier for each record. |
| | | A | | | It relates this hzNuclearFlty |
| | | | | | feature class with the associated |
| | | | | | eqNuclearFlty table. The |
| | | | | | standard format adopted by |
| | | | | | Hazus is SSxxxxxx, where SS is |
| | | | | | the state name abbreviation |
| | | | | | (upper case) and xxxxxx is a |
| | | | | | sequential number from 000001 |
| | | | | | to 999999. |
| HplfClass | Text(5) | T, | T, UC | See Appendix B, | Indicates facility classification |
| | | NU, | | Table B-5. | |
| | | A | | | |
| Tract | Text(11) | T, | Т | 11 digits of the | 2000 US Census tract number |
| | | NU, | | Census tract | |
| | | A | | number | |
| Name | Text(40) | F | F | | Facility name |
| Address | Text(40) | F | F | | Physical address |
| City | Text(40) | F | F | | City |
| Zipcode | Text(10) | F | F | | Zip code; for instance, 30067 or |
| | | | | | 30067-2564 or 300672564 |
| Statea | Text(2) | F | F | | USPS state abbreviation |
| Owner | Text(25) | F | F | | Facility owner name |
| Contact | Text(40) | F | F | | Facility contact person |
| PhoneNumber | Text(14) | F | F | | Facility phone number |
| YearBuilt | Short(2) | F | F | Null or | Year structure was built |
| | Integer(2) | | | (≥ 1500 and ≤ | |
| | | | | 2100) | |
| NumStories | Short(1) | F | F | | Number of stories |

| | Byte(1) | | | | |
|-----------|-------------|---|---|------------------|---------------------------------|
| Cost | Double(8) | F | F | | Replacement cost (in thousands) |
| | Currency(8) | | | | |
| Latitude | Double(8) | F | F | Latitude decimal | Latitude |
| | Double(8) | | | degrees | |
| Longitude | Double(8) | F | F | Longitude | Longitude |
| | Double(8) | | | decimal degrees | |
| Capacity | Long(4) | F | F | | Volts/Watts |
| | Long | | | | |
| | Integer(4) | | | | |
| Comment | Text(40) | F | F | | Comments |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.8.3.10 Earthquake Specific Nuclear Power Plant Facilities Table: eqNuclearFlty

| Identification: | eqNuclearFlty |
|-----------------|--|
| Type: | ESRI Table |
| Purpose: | Belongs to HPLF.mdb. Provides Earthquake Model specific information of nuclear power plant facilities. During the creation of a study region, the table content is transferred to a table with the same name (eqNuclearFlty) in the SQL Server database in the Region folder. Data are subsequently used for Hazus-MH EQ Model estimation of hazards, damages, and loss of functionality. There must be one record in eqNuclearFlty for each record in |
| | hzNuclearFlty with same NuclearFltyId unique identifier. |
| Data: | |
| | Feature Class Field Definition |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|-----------------|--------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| NuclearFltyId | Text(8) | T, | T, UC | | Unique identifier for each record. |
| | | U,A | | | It relates this eqNuclearFlty |
| | | | | | feature class with the associated |
| | | | | | hzNuclearFlty in a one-to-one |
| | | | | | relationship. The standard format |
| | | | | | adopted by Hazus is SSxxxxxx, |
| | | | | | where SS is the state name |
| | | | | | abbreviation (upper case) and |
| | | | | | xxxxxx is a sequential number |
| | | | | | from 000001 to 999999. |
| eqBldgType | Text(4) | F | T, UC | See Appendix B, | The building type that will be |
| | | | | Table B.2. | modeled in Hazus earthquake |
| | | | | | scenarios. See Appendix B, |
| | | | | | Table B.2, for complete |
| | | | | | description of available model |
| | | | | | building types. |
| DesignLevel | Text(2) | F | T, UC | HC = High-Code | Building codes in effect in the |
| | | | | MC = Moderate- | area. See Earthquake Technical |
| | | | | Code | Manual, Chapters 3 and 5, for |
| | | | | LC = Low-Code | detailed information about |
| | | | | PC = Pre-Code | design levels. |
| | | | | HS = Special | |
| | | | | High-Code | |
| | | | | MS = Special | |
| | | | | Moderate-Code | |
| | | | | LS = Special | |
| | | | | Low-Code | |
| SoilType | Text(1) | F | T, UC | See Appendix B, | National Earthquake Hazard |
| | | | | Table B.1. | Reduction Program (NEHRP) |
| | | | | | soil classification that defines the |
| | | | | | conditions where the structure is |

| | | | | | located. This is based on shear |
|--|-----------|---|---|-----------------|------------------------------------|
| | | | | | wave velocity. See Appendix B, |
| | | | | | Table B.1, for details. |
| LqfSusCat | Short(1) | F | F | Null or 0 to 5 | Indicates liquefaction |
| | Byte(1) | | | | susceptibility of the facility |
| | | | | | location. See Earthquake |
| | | | | | Technical Manual (Section 4.2, |
| | | | | | Ground Failure) for liquefaction |
| | | | | | discussion. |
| LndSusCat | Short(1) | F | F | Null or 0 to 10 | Indicates landslide susceptibility |
| | Byte(1) | | | | of the facility location. See |
| | | | | | Earthquake Technical Manual |
| | | | | | (Section 4.2, Ground Failure) for |
| | | | | | liquefaction discussion. |
| WaterDepth | Float(4) | F | F | Null ≥ 0 | Water table depth in feet. Values |
| | Single(4) | | | | must be greater than 0. Range: 0 |
| | | | | | – 300 meters. |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | |
| LC=Lowercase | | | | | |

F.9 Agriculture Inventory: flAG.mdb

F.9.1 Database Overview

flAG.mdb is an Access personal geodatabase that provides information about distributions of crop type, price, and harvest cost of agriculture products. The information is used by the Flood Model to determine the direct physical damage to agriculture.

The geographical domain of the database is the state. In that case, there is one flAG.mdb database for each state, each located in the appropriate State folder.

flAG.msb contains a feature class (flAgMap) with polygons (defining crop distribution and extent) and a table (flAgricultureInventory) that provides crop type, units of measurement, unit price, and harvest cost of agriculture products for each polygon.

During the creation of a flood study region, features from feature class flAgMap are transferred to a geodatabase named flAG.mdb in the Region folder. Data from table flAgricultureInventory are transferred to a table named flAgricultureInventory in the SQL Server database in the Region folder.

F.9.2 Identification

flAG.mdb

F.9.3 Database Content

The flAG.mdb database includes:

| Name | Туре | Content |
|------------------------|-------------------------------|---|
| flAgMap | ESRI Polygon Feature Class | Geometry (polygon features) and information of crops |
| flAgricultureInventory | ESRI Table | This table provides distributions of crop type, units of measurement, unit price, and harvest cost for agriculture products |

F.9.3.1 Agriculture Crop Feature Class: flAgMap

| Identification: | | flAgMap | | | | | | |
|-----------------------|-------------------------------------|--|-----------------|------------------------|--|--|--|--|
| Type: | | ESRI Polygon Feature Class | | | | | | |
| Purpose: | | Belongs to flAG.mdb. Provides the geometry of crop polygons. During the creation of a study region, features are transferred to a geodatabase named flAG.mdb in the Region folder. | | | | | | |
| Data: | | | | | | | | |
| | | | Feature C | Class Field Definition | | | | |
| Name | ESRI Type (Size) Access Type (Size) | Index * | Require d* | Values | Description | | | |
| PolygonId | Text(25) | F | Т | | Sub County Polygon ID | | | |
| LUCODE | Short(2) Integer(2) | F | | | Land use code | | | |
| Name | Text(20 | F | Т | | County name | | | |
| FIPS | Text(5) | F | T | | Five-digit FIPS county code. First two digits are the state FIPS; the remaining three digits are the county code. | | | |
| ST | Text(2) | T, NU, A | Т | | FIPS state code | | | |
| ST_NAME * T=True; F= | Text(2) False; U=Uniq | T, NU, A ue; NU=N | T Ion-Unique | ; A=Ascending; | USPS state abbreviation D=Descending; UC=Uppercase; | | | |
| LC=Lowerca | | • | 1 | | | | | |

F.9.3.2 Agriculture Inventory Table: flAgricultureInventory

| Identification: | | flAgricultureInventory | | | | | | |
|-----------------|---------------|------------------------|--------------|-------------------------|--------------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | Belongs t | o flAG.md | b. Provides Flood Me | odel with information about | | | |
| | | agricultui | re crops. Du | iring the creation of a | a study region, the table content is | | | |
| | | transferre | d to a table | with the same name | (flAgricultureInventory) in the SQL | | | |
| | | Server da | tabase in th | e Region folder. | | | | |
| Data: | | | | | | | | |
| | | | Feature C | Class Field Definition | | | | |
| Name | ESRI Type | Index | Require | Values | Description | | | |
| | (Size) | * | d* | | | | | |
| | Access Type | : | | | | | | |
| | (Size) | | | | | | | |
| CropType | Text(50) | F | Т | | Crop type | | | |
| CountyFIPS | Text(5) | F | T | Five-digit FIPS | Five-digit FIPS county code. | | | |
| | | | | county code | First two digits are the state | | | |
| | | | | | FIPS; the remaining three digits | | | |
| | | | | | are the county code. | | | |
| PolygonId | Text(25) | F | Т | | Sub county polygon ID | | | |
| AvgAnnualY | Double(8) | F | F | | Annual average crop yield | | | |
| ield | Double(8) | | | | | | | |
| Unit | Text(10) | F | F | | Unit of measurement for crop | | | |
| UnitPrice | Double(8) | F | F | | Price per unit of measurement | | | |
| | Double(8) | | | | | | | |
| HarvestCost | Double(8) | F | F | | Cost to harvest crop | | | |
| | Double(8) | | | | | | | |
| * T=True; F= | False; U=Uniq | ue; NU=N | lon-Unique | ; A=Ascending; D=I | Descending; UC=Uppercase; | | | |
| LC=Lowercas | se | | | | | | | |

F.10 Vehicles Inventory: flVeh.mdb

F.10.1 Database Overview

flVeh.mdb is an Access personal geodatabase that provides distributions and costs (replacement value) of vehicles by census block. The information is used by the Flood Model for estimating the dollar cost of flood related damages to motor vehicles due to flood events.

The geographical domain of the database is the state. In that case, there is one flVeh.mdb database for each state, each located in the appropriate State folder.

flVeh.msb contains two tables: one named flNightVehicleInv that provides nighttime vehicle information and one named flDayVehicleInv that provides daytime vehicle information.

During the creation of a flood study region, records from both tables are copied to tables with the same names in the SQL Server database in the Region folder.

F.10.2 Identification

flVeh.mdb

F.10.3 Database Content

The flVeh.mdb database includes:

| Name | Туре | Content |
|-------------------|------------|---|
| flNightVehicleInv | ESRI Table | This table provides nighttime vehicle information |
| flDayVehicleInv | ESRI Table | This table provides daytime vehicle information |

F.10.3.1 Nighttime Vehicles Table: flNightVehicleInv

| Identification: | flNightVehicleInv | | | |
|--------------------------------|--|--|--|--|
| Type: | ESRI table | | | |
| Purpose: | Belongs to flVeh.mdb. Provides distributions and costs of vehicles at nighttime. During the creation of a study region, records are copied to a table named flNightVehicleInv in the SQL Server database in the Region folder. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Ind | Require | Values | Description |
|-----------------|------------|-----|---------|------------------|-------------------------------|
| | (Size) | ex* | d* | | |
| | Access | | | | |
| | Type(Size) | | | | |
| | Text(15) | N | T | 15 digits of the | 15 digits of the Census block |
| | | | | Census block | number |
| CensusBlock | | | | number | |
| | Long(4) | F | F | | Total vehicles count |
| | Long | | | | |
| TotalVehicle | Integer(4) | | | | |
| | Long(4) | F | F | | Total count cars |
| | Long | | | | |
| Cars | Integer(4) | | | | |
| | Long(4) | F | F | | Total count light trucks |
| | Long | | | | |
| LightTrucks | Integer(4) | | | | |
| | Long(4) | F | F | | Total count heavy trucks |
| | Long | | | | |
| HeavyTrucks | Integer(4) | | | | |
| | Double(8) | F | F | | Total vehicle exposure |
| TotalExp | Double(8) | | | | |
| | Double(8) | F | F | | Total value new cars |
| TValNewCars | Double(8) | | | | |
| | Double(8) | F | F | | Total value used cars |
| TValUsedCars | Double(8) | | | | |
| TValNewLightTr | Double(8) | F | F | | Total value new light trucks |
| ucks | Double(8) | | | | |
| TValUsedLightTr | Double(8) | F | F | | Total value used light trucks |
| ucks | Double(8) | | | | |
| TValNewHeavyT | Double(8) | F | F | | Total value new heavy trucks |
| rucks | Double(8) | | | | |
| TValUsedHeavy | Double(8) | F | F | | Total value used heavy trucks |

| Trucks | Double(8) | | | | |
|-------------------|----------------|-------|------------|-------------------|-------------------------|
| | | | | | |
| * T=True; F=False | ; U=Unique; NU | J=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |
| LC=Lowercase | | | | | |

F.10.3.2 Daytime Vehicles Table: flDayVehicleInv

| Identification: | flDayVehicleInv | | | |
|--------------------------------|---|--|--|--|
| Type: | ESRI table | | | |
| Purpose: | Belongs to flVeh.mdb. Provides distributions and costs of vehicles at daytime. During the creation of a study region, records are copied to a table named flDayVehicleInv in the SQL Server database in the Region folder. | | | |
| Data: | | | | |
| Feature Class Field Definition | | | | |

| Name | ESRI Type | Ind | Require | Values | Description |
|-----------------|-------------|-----|---------|------------------|---------------------------------|
| | (Size) | ex* | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| | Text(15) | N | Т | 15 digits of the | 15 digits of the 2000 US Census |
| | | | | Census block | block number |
| CensusBlock | | | | number | |
| | Long(4) | F | F | | Total vehicles count |
| | Long | | | | |
| TotalVehicle | Integer(4) | | | | |
| | Long(4) | F | F | | Total count cars |
| | Long | | | | |
| Cars | Integer(4) | | | | |
| | Long(4) | F | F | | Total count light trucks |
| | Long | | | | |
| LightTrucks | Integer(4) | | | | |
| | Long(4) | F | F | | Total count heavy trucks |
| | Long | | | | |
| HeavyTrucks | Integer(4) | | | | |
| | Double(8) | F | F | | Total vehicle exposure |
| TotalExp | Double(8) | | | | |
| | Double(8) | F | F | | Total value new cars |
| TValNewCars | Double(8) | | | | |
| | Double(8) | F | F | | Total value used cars |
| TValUsedCars | Double(8) | | | | |
| TValNewLightTr | Double(8) | F | F | | Total value new light trucks |
| ucks | Double(8) | | | | |
| TValUsedLightTr | Double(8) | F | F | | Total value used light trucks |
| ucks | Double(8) | | | | |
| TValNewHeavyT | Double(8) | F | F | | Total value new heavy trucks |
| rucks | Double(8) | | | | |
| TValUsedHeavy | Double(8) | F | F | | Total value used heavy trucks |

| Trucks | Double(8) | | | | |
|-------------------|----------------|-------|------------|-------------------|-------------------------|
| * T=True; F=False | ; U=Unique; NU | J=Non | -Unique; A | =Ascending; D=Des | scending; UC=Uppercase; |
| LC=Lowercase | | | | | |

F.11 Hurricane Model Database: huTemplateGBS.mdb

F.11.1 Database Overview

huTemplateGBS.mdb is an Access database that provides Hurricane Model parameter values by census tract. The geographical domain of the database is the state. In that case, there is one huTemplateGBS.mdb database for each state, each located in a folder named *hu* in the appropriate State folder.

huTemplateGBS.mdb has four tables that provide critical Hurricane Model information about hazard and exposure (e.g., terrain condition, tree inventory, wind specific mapping schemes, gust wind speed by return period, distance to coast, etc.) by census tract.

During the creation of a flood study region, records from all tables are copied to tables with the same name in the SQL Server database in the Region folder.

F.11.2 Identification

huTemplateGBS.mdb

F.11.3 Database Content

The huTemplateGBS.mdb database includes:

| Name | Туре | Content |
|----------------------|------------|--|
| huHazardMapWindSpeed | ESRI Table | This table provides estimated gust (3-second) wind |
| | | speed by census tract for different return periods. |
| huTerrain | ESRI Table | This table provides terrain characterization (surface |
| | | roughness) by census tract. |
| huTract | ESRI Table | This table provides Hurricane Model specific mapping |
| | | scheme name by census tract. Values for parameters |
| | | distance to coast and wind grid index are included for |
| | | each census tract. |
| huTreeParameters | ESRI Table | This table provides tree coverage parameter values by |
| | | census tract. |

F.11.3.1 Peak Gust Wind Speed by Return Period Table: huHazardMapWindSpeed

| Identification: | huHazardMapWindSpeed | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | Access Table | | | | |
| Purpose: | Belongs to huTemplateGBS.mdb. Provides estimated peak gust (3-second) wind speed by census tract for different return periods. Records are transferred to the SQL Server database in the Region folder during the aggregation process. Data are subsequently used for Hazus-MH wind speed mapping | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------|-------------|-------|----------|------------------|---------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| Tract | Text(11) | F | Т | 11 digits of the | 11 digits of the 2000 US Census |
| | | | | census tract | tract number |
| | | | | number | |
| f10yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 10 years |
| f20yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 20 years |
| f50yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 50 years |
| f100yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 100 years |
| f200yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 200 years |
| f500yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 500 years |
| f1000yr | Float(4) | F | F | | Estimated gust (3-seconds) wind |
| | Single(4) | | | | speed to be exceeded only once |
| | | | | | every 1000 years |
| | | 1 | <u> </u> | 1 | l . |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.11.3.2 Terrain Characterization Table: huTerrain

|] | census tra | o huTempla | | es surface roughness values by ansferred to the SQL Server aggregation process. |
|---------------------------------|--|--|--------------------------------------|---|
| (| census tra | act and wind | d grid. Records are tr | ansferred to the SQL Server |
| l Definition | | | | |
| d Definition | | | | |
| | 1 | | | |
| SRI Type Size) ccess ype (Size) | Index * | Require d* | Values | Description |
| ext(11) | F | Т | 11 digits of the census tract number | 11 digits of the 2000 US Census tract number |
| loat(4) | F | F | | Surface roughness value. See Hurricane Model Technical Manual, Chapter 3, Surface Roughness Modeling. |
| loat(4) | F | F | | Surface roughness index. See Hurricane Model Technical Manual, Chapter 3, Surface Roughness Modeling. |
| | cess pe (Size) xt(11) pat(4) pat(4) pat(4) pat(4) | cess pe (Size) xt(11) F oat(4) F oat(4) F oat(4) F ngle(4) | cess pe (Size) xt(11) | cess pe (Size) xt(11) F T 11 digits of the census tract number pat(4) F F pagle(4) pat(4) F F |

F.11.3.3 Tree Characteristics Distribution Table: huTreeParameters

| Identification: | huTreeParameters | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | Access Table | | | | |
| Purpose: | Belongs to huTemplateGBS.mdb. Provides tree parameters values by census tract. Records are transferred to the SQL Server database in the Region folder during the aggregation process. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|----------------|----------------|--------|-------------|------------------|-------------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| Tract | Text(11) | N | T | 11 digits of the | 11 digits of the 2000 US Census |
| | | | | census tract | tract number |
| | | | | number | |
| PreDomTreeT | Text(20) | F | F | Null | Predominant tree type: |
| ype | | | | Deciduous | deciduous, coniferous, mixed |
| | | | | Coniferous | |
| | | | | Mixed | |
| StemsPerAcre | Long(4) | F | F | | Number of trees per acre |
| | Long | | | | |
| | Integer(4) | | | | |
| TreeHeightLes | Float(4) | F | F | | Percentage of trees with height |
| s40 | Single(4) | | | | less than 40 feet |
| TreeHeight40 | Float(4) | F | F | | Percentage of trees with height |
| To60 | Single(4) | | | | 40 feet to 60 feet |
| TreeHeightGre | Float(4) | F | F | | Percentage of trees with height |
| ater60 | Single(4) | | | | greater than 60 feet |
| TreeCollection | Float(4) | F | F | | Tree collection factor. A factor to |
| Factor | Single(4) | | | | estimate eligible tree debris for |
| | | | | | collection. |
| * T=True; F=Fa | lse; U=Unique; | NU=Non | ı-Unique; A | =Ascending; D=De | scending; UC=Uppercase; |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.11.3.4 Hurricane Model Census Tract Table: huTract

| Identification: | | huTract | | | | | | |
|-----------------------------------|---|--------------|------------|------------------|----------------|---|--|--|
| Type: | | Access Table | | | | | | |
| Purpose: | Belongs to huTemplateGBS.mdb. This table provides Hurricane Model specific building and occupancy mapping scheme names by census tract. Values for parameters distance to coast and wind grid index are included for each census tract Records are transferred to the SQL Server database in the Region folder during the aggregation process. Data are subsequently used for Hazus-MH wind speed mapping. | | | | | | | |
| Data: | | | | | | | | |
| | | | | Feature Class Fi | eld Definition | | | |
| Name | ESRI Type (Size) Access Type (Size) | | Index * | Required * | Values | Description | | |
| Tract | Text(11) | | F | Т | | 11 digits of the 2000 US Census tract number | | |
| huBldgSchemeNa me | Float(4) Single(4) |) | F | Т | | Hurricane Model building scheme name | | |
| huOccMapSchem eName | Float(4) Single(4) |) | F | Т | | Hurricane Model occupancy mapping scheme name | | |
| DistToCoast | Float(4) Single(4) |) | F | F | | Distance to coast (in miles) | | |
| SURFACEROUG HNESS | Float(4) Single(4) | | F | F | | Surface roughness value. See Hurricane Model Technical Manual, Chapter 3, Surface Roughness Modeling. | | |
| WindGridIndex | Float(4) Single(4) | | F | F | | Wind grid index | | |
| * T=True; F=False LC=Lowercase | e; U=Uniqu | ıe; NI | J=Non-I | Jnique; A=. | Ascending; D=I | Descending; UC=Uppercase; | | |

F.12 Occupancy Mapping Scheme: MSH.mdb

F.12.1 Database Overview

Occupancy mapping schemes are sets of tables (matrices) that inform the distribution of building characteristics by occupancy to Hazus-MH. MSH.mdb is the Access database that provides mapping scheme tables for Hazus-MH damage and loses assessment. There are two sets of mapping schemes tables. One set provides the percentage distribution of building by building types and occupancy. An example would be to specify that RES1 (single-family dwellings) is 80 percent wood and 20 percent masonry. The other set, specific to the Flood Model, provides the percentage distribution of pre-FIRM and post-FIRM by foundation type for each occupancy type.

The geographical domain of the database is the state. In that case, there is one MSH.mdb database for each state, each located in the appropriate State folder.

During the creation of a study region, for all hazards, records from tables with prefix *hz* (hzGenBldgScheme and hzGenBldgSchemes) are appended to tables with the same name in the SQL Server database in the Region folder. The table hzGenBldgSchemes portrays the available schemes for a particular state, while hzGenBldgScheme defines the distribution of general building types (wood, steel, etc.) for each of these schemes by occupancy. Although originally designed for the Earthquake Model, the distribution of general building type as presented in hzGenBldgScheme table is commonly used across all Hazus-MH Models.

Tables with prefix eq in their names are specific to the EQ Model. One table for each general building type (wood, steel, etc.) portrays the distribution of specific building types by design level. Records from these tables are appended to tables with the same name in the SQL Server database in the Region folder if an EQ region is aggregated.

Flood specific tables have names with prefix *fl*. Records from these tables are appended to tables with the same name in the SQL Server database in the Region folder when a flood region is aggregated.

F.12.1.1 Occupancy Mapping Scheme for Building Type

While information about replacement value, building count, and square footage by occupancy is explicitly depicted in tables (by census tract and by census block) in bndrygbs.mdb (see State Boundaries: Boundary.mdb), building type distribution by occupancy is handled differently.

Two sets of tables deal with the distribution of building types by occupancy. One set takes care of general building type distribution (e.g., wood, concrete, and masonry) and another set takes care of specific building type distribution (e.g., wood light frame [W1] or concrete share wall low-rise [C2L]).

In terms of general building type, the table named *hzGenBldgSchemes* acts as bookkeeper, listing all building schemes available for a particular state. Building scheme, in this context, refers to a particular mapping of the distribution of general building types. In both feature classes previously discussed—<u>hzTract (Census Tract Boundaries)</u> and <u>hzCensusBlock (Census Block Boundaries)</u> in the <u>State Boundaries (Boundary.mdb)</u> geodatabase—a field specifies the appropriate building scheme identifier to be applied to determine the distribution of building type.

Figure 1 shows that there are two building schemes available in the Hazus-MH default database for Illinois. The use of the state abbreviation for the building scheme identifier (BldgSchemeID) is not required. Instead, any alphanumeric string can be used (that is, up to 10 characters length).

Figure 1: Available Default Building Schemes for Illinois

As shown in Figure 2, for each of these building schemes, there will be 33 records (one for each occupancy type in Hazus-MH) in a table named *hzGenBldgScheme* that define the distribution in percentage by general building type: wood, masonry, steel, concrete, and manufactured home.

Figure 2: General Mapping Schemes by Occupancy for Illinois

| | ■ hzGenBldgScheme : Table | | | | | | | | | | |
|----------|---------------------------|-----------------|------------------|-----------|-------|------|------|------|------|------|---|
| | OBJECTID | GenBldgSchemelD | BldgSchemesld | Occupancy | Total | WPct | CPct | SPct | MPct | HPct | ^ |
| • | 1 | IL1 | IL1 | RES1 | 100 | 77 | 1 | 0 | 22 | 0 | |
| | 2 | IL2 | IL1 | RES2 | 100 | 0 | 0 | 0 | 0 | 100 | ∄ |
| | 3 | IL3 | IL1 | RES3A | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 4 | IL4 | IL1 | RES3B | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 5 | IL5 | IL1 | RES3C | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 6 | IL6 | IL1 | RES3D | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 7 | IL7 | IL1 | RES3E | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 8 | IL8 | IL1 | RES3F | 100 | 75 | 0 | 0 | 25 | 0 | |
| | 9 | IL9 | IL1 | RES4 | 100 | 50 | 0 | 0 | 50 | 0 | |
| | 10 | IL10 | IL1 | RES5 | 100 | 20 | 45 | 0 | 35 | 0 | |
| | 11 | IL11 | IL1 | RES6 | 100 | 90 | 0 | 0 | 10 | 0 | |
| | 12 | IL12 | IL1 | COM1 | 100 | 30 | 10 | 30 | 30 | 0 | |
| | 13 | IL13 | IL1 | COM2 | 100 | 10 | 30 | 30 | 30 | 0 | |
| | 14 | IL14 | IL1 | сомз | 100 | 30 | 10 | 30 | 30 | 0 | |
| | 15 | IL15 | IL1 | COM4 | 100 | 30 | 10 | 30 | 30 | 0 | |
| | 16 | IL16 | IL1 | COM5 | 100 | 30 | 10 | 30 | 30 | 0 | |
| | | II 17 | II 1 | COM6 | 100 | Π | 70 | 10 | 20 | n | ~ |
| Re | cord: [] 🔻 | 1 1 | ▶ * of 66 | | | | | | | | |

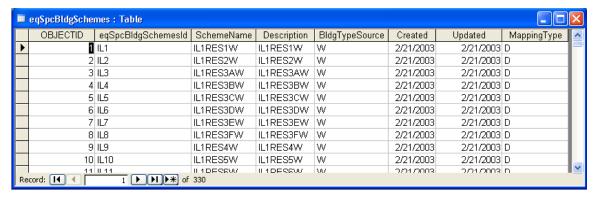
In this way, Hazus-MH will realize that for a particular tract or block with building scheme IL1 assigned; for instance, 77 percent of buildings classified as occupancy type RES1 are wood structures. As shown in Figure 1, the field BldgSchemeID refers to a record in *hzGenBldgScheme*. The value IL1 in field GenBldgSchemeId uniquely identifies the general building scheme of RES1 for Building Scheme IL1⁵ while value IL2 in the field GenBldgSchemeId uniquely identifies the general building scheme of RES1 for the same building scheme IL1.

As noted, a second set of tables maps the *specific* building type by design level. In terms of specific building type, a table named *eqSpcBldgSchemes* will act as the bookkeeper for all specific building schemes available for a particular state. Specific building schemes, in this context, refer to a particular mapping of the distribution of specific building types. Figure 3 shows several records in eqSpcBldgSchemes that are available in Hazus-MH default database for Illinois. Again, the use of the state abbreviation for the specific building scheme identifier (eqSpcBldgSchemeID) is not required.

Figure 3: Available Default Specific Building Schemes for Illinois

-

The user must be aware that naming convention may result in confusions. In Hazus-MH default inventory, the same naming convention (State abbreviation plus a number) is used for identifying building schemes in table hzGenBldgScheme (field BldgSchemeID) and for the record that refers to the general building scheme for occupancy type RES1 in hzGenBldgSchemes table (field GenBldgSchemeID) However, both are identifying different items and, as previously stated, the use of the State abbreviation is not required. Instead, any alphanumeric string can be used (up to 10 characters length).



By default, there are 165 records in Hazus-MH for each building scheme available in hzGenBldgSchemes; however, there can be fewer or more as necessary. Each set of 165 records consists of 33 subsets (representatives of the 33 specific occupancy class) and five records (one for each general building type like wood, concrete, etc.). For instance, the Specific Building Scheme IL1 (Figure 3) refers to RES1-wood buildings. Details of the distribution of building types for each scheme is stored in five tables, one for each general building type. In this way, wood type schemes are stored in a table named eqWBldgTypeMp, while concrete type schemes are stored in a table named eqCBldgTypeMp.

Figure 4 shows the specific building type distribution for wood from the EqWBldgTypeMp table for Illinois. Using the example in the paragraph above, wood for RES1 is mapped to 100 percent W1 (wood light-frame) with design level low code for the rest of combination building type/design level. By definition, the percentages must total 100. This subset of tables is exclusive to the EQ Model, as the prefix in the names indicates.

Figure 4: Specific Building Type Scheme (Wood) from EqWbldgtypemp Table

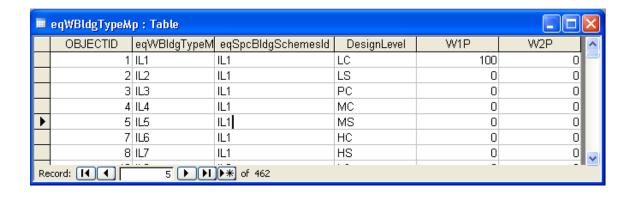


Figure 5 shows the relationship between the occupancy mapping scheme tables discussed above.

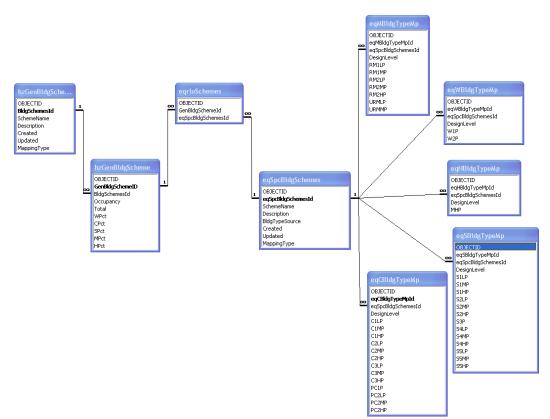


Figure 5: Occupancy Mapping Scheme Relationship in Hazus-MH

There is a many-to-many relationship between the general mapping schemes (hzGenBldgScheme) and the specific mapping schemes (eqSpcBldgSchemes). This relationship is stored in the table eqrlnSchemes. In this way, two general schemes (as

specified in hzGenBldgSchemes) can share the same scheme definition in eqSpcBldgSchemes for a particular occupancy/building type distribution (for instance, Res1/W2). Figure 6 shows a partial view of Illinois eqInScheme table. For general building scheme IL1 (RES1) in hzGenBldgScheme (see Figure 2), there are five specific building type (field eqSpcBldgSchemeID): IL1 (RES1-Wood), IL34 (RES1-Concrete), etc.

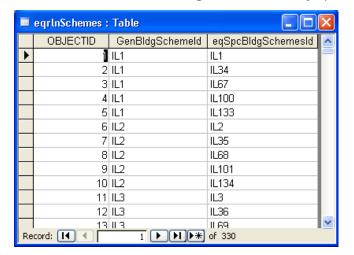


Figure 6: Partial view of eqInScheme table.

F.12.1.2 Flood Model Mapping Scheme

First floor elevation (as determined from foundation type) is another key parameter for the estimation of flood damage. Information on foundation types for the general building stock is provided by a foundation mapping scheme consisting of a set of tables that depicts how foundation type and first floor elevations are distributed by specific occupancy.

Figure 7: Specific Building Type Scheme (Wood) from Eqcbldgtypemp Table.

| Schemeld | Soccup | FoundationType | PreFirmDist | PreFirmHt | PostFirmDist | PostFirmHt | HazardType |
|----------|--------|----------------|-------------|-----------|--------------|------------|------------|
| ALR00001 | RES1 | Pile | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES1 | Pier | 0 | 5 | 0 | 6 | R |
| ALR00001 | RES1 | SolidVVall | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES1 | Basement | 25 | 4 | 25 | 4 | R |
| ALR00001 | RES1 | Crawl | 49 | 3 | 49 | 4 | R |
| ALR00001 | RES1 | Fill | 0 | 2 | 0 | 2 | R |
| ALR00001 | RES1 | Slab | 26 | 1 | 26 | 1 | R |
| ALR00001 | RES2 | Pile | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES2 | Pier | 0 | 5 | 0 | 6 | R |
| ALR00001 | RES2 | SolidVVall | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES2 | Basement | 25 | 4 | 25 | 4 | R |
| ALR00001 | RES2 | Crawl | 49 | 3 | 49 | 4 | R |
| ALR00001 | RES2 | Fill | 0 | 2 | 0 | 2 | R |
| ALR00001 | RES2 | Slab | 26 | 1 | 26 | 1 | R |
| ALR00001 | RES3A | Pile | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES3A | Pier | 0 | 5 | 0 | 6 | R |
| ALR00001 | RES3A | SolidWall | 0 | 7 | 0 | 8 | R |
| ALR00001 | RES3A | Basement | 25 | 4 | 25 | 4 | R |
| ALR00001 | RES3A | Crawl | 49 | 3 | 49 | 4 | R |
| ALR00001 | RES3A | Fill | 0 | 2 | 0 | 2 | R |
| ALR00001 | RES3A | Slab | 26 | 1 | 26 | 1 | R |
| ALR00001 | RES3B | Pile | 0 | 7 | 0 | 8 | R |

Conversely, the scheme identifier of the occupancy mapping scheme for building type is not assigned in the <a href="https://hzcensusBlock@

F.12.2 Identification

MSH.mdb

F.12.3 Database Content

The MSH.mdb database includes:

| Name | Туре | Content |
|------------------|------------|--|
| hzGenBldgSchemes | ESRI Table | hzGenBldgSchemes holds a list of all the mapping |
| | | schemes available in the state. This table is a |
| | | bookkeeping table that holds items such as the name of |
| | | the scheme and the date it was created. |
| hzGenBldgScheme | ESRI Table | hzGenBldgScheme is the table with values for general |
| | | building type associated with all mapping schemes in |
| | | hzGenBldgSchemes. There are 33 records—one for each |
| | | specific occupancy class (Res1, Res2, Com6, etc.)—for |
| | | each scheme available in hzGenBldgSchemes. For each |
| | | record, the percentage of building by general building |

| | | type (wood, concrete, etc.) is summarized. |
|------------------|------------|---|
| eqrlnSchemes | ESRI Table | There is a many-to-many relationship between the |
| | | general mapping schemes (hzGenBldgScheme) and the |
| | | specific mapping schemes (eqSpcBldgSchemes); this |
| | | relationship is stored in the table eqrlnSchemes. In this |
| | | way, two general schemes (as specified in |
| | | hzGenBldgSchemes) can share the same scheme |
| | | definition in eqSpcBldgSchemes for a particular |
| | | occupancy/building type distribution (for instance, |
| | | Res1/W2). |
| eqSpcBldgSchemes | | eqSpcBldgSchemes is the equivalent of |
| | | hzGenBldgSchemes, but applies to the specific building |
| | | type distribution. |
| eqCBldgTypeMp | ESRI Table | eqCBldgTypeMp portrays the percentage of specific |
| | | concrete building type (for instance, C1LP and C1MP) |
| | | by design level. Each record in eqSpcBldgSchemes for |
| | | concrete building type has five related records (one for |
| | | each design level type) in eqCBldgTypeMp. |
| eqHBldgTypeMp | ESRI Table | eqHBldgTypeMp portrays the percentage of specific |
| | | manufactured home building type (MHP) by design |
| | | level. Each record in eqSpcBldgSchemes for |
| | | manufactured home building type has five related |
| | | records (one for each design level type) in |
| | | eqHBldgTypeMp. |
| eqMBldgTypeMp | ESRI Table | eqMBldgTypeMp portrays the percentage of specific |
| | | masonry building type (for instance, RM1LP and |
| | | RM1MP) by design level. Each record in |
| | | eqSpcBldgSchemes for masonry building type has five |
| | | related records (one for each design level type) in |
| | | eqMBldgTypeMp. |
| eqWBldgTypeMp | ESRI Table | eqWBldgTypeMp portrays the percentage of specific |
| | | wood building type (for instance, W1P and W2P) by |
| | | design level. Each record in eqSpcBldgSchemes for |
| | | wood building type has five related records (one for each |
| | | design level type) in eqWBldgTypeMp. |
| eqSBldgTypeMp | ESRI Table | eqSBldgTypeMp portrays the percentage of specific |

| | | steel building type (for instance, S1LP and S1MP) by |
|------------------|------------|---|
| | | design level. Each record in eqSpcBldgSchemes for steel |
| | | building type has five related records (one for each |
| | | design level type) in eqSBldgTypeMp. |
| flSchemeInfo | ESRI Table | flSchemeInfo holds a list of all mapping schemes |
| | | available in the state. This table is a bookkeeping table |
| | | holding items such as scheme name and creation date. |
| flSchemeCoastal | ESRI Table | flSchemeCoastal portrays the distribution (expressed in |
| | | percentages) of foundation types (pile, pier, solid wall, |
| | | etc.) by occupancy with the building's first floor |
| | | elevation for each foundation type in coastal areas. |
| | | Elevation and percentage distribution is provided for |
| | | pre-FIRM and post-FIRM conditions. |
| flSchemeGLakes | ESRI Table | flSchemeGLakes portray the distribution (expressed in |
| | | percentages) of foundation types (pile, pier, solid wall, |
| | | etc.) by occupancy with the building's first floor |
| | | elevation for each foundation type in Great Lakes areas. |
| | | Elevation and percentage distribution is provided for |
| | | pre-FIRM and post-FIRM conditions |
| flschemeRiverine | ESRI Table | flschemeRiverine portrays the distribution (expressed in |
| | | percentages) of foundation types (pile, pier, solid wall, |
| | | etc.) by occupancy with the building's first floor |
| | | elevation for each foundation type in areas with riverine |
| | | hazard). Elevation and percentage distribution is |
| | | provided for pre-FIRM and post-FIRM conditions. |
| flSchemeMapping | ESRI Table | flSchemeMapping assigns scheme type to each census |
| | | block in a state. |
| | | |

F.12.3.1 Building Schemes Catalog: hzGenBldgSchemes

| Identification: | | hzGenBldgSchemes | | | | | | |
|-----------------|---------------------|--|-------------|-------------------------------------|----------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | This table holds a list of all mapping schemes available in the state. This table is a bookkeeping table holding items such as the scheme name and date of creation. | | | | | | |
| Data: | | | | | | | | |
| | | | Feature Cla | ss Field Definition | | | | |
| Name | ESRI Tyj | pe Index | Require | Values | Description | | | |
| | (Size) Access Type | * | d* | | | | | |
| | (Size) | | | | | | | |
| BldgSchemesId | Text(10) | F | T | | Building scheme unique ID | | | |
| SchemeName | Text(30) | F | T | | Building scheme name | | | |
| Description | Text(100 |) F | N | | Scheme description | | | |
| Created | Date Date/Time | F | Т | | Scheme creation date | | | |
| Updated | Date Date/Time | F | Т | | Scheme modification date | | | |
| MappingType | Text(2) | F | T, UC | D=Default | Source of scheme (Default, user- | | | |
| | | | | UE=User-defined in Earthquake Model | defined, or BIT) | | | |
| | | | | UF=User-defined | | | | |
| | | | | in Flood Model | | | | |
| | | | | UH=User- | | | | |
| | | | | defined in | | | | |
| | | | | hurricane Model | | | | |
| | | | | BT=BIT | | | | |
| | | | | mapping scheme | | | | |
| * T=True; F=Fal | se; U=Unio | que; NU=No | n-Unique; | A=Ascending; D=De | scending; UC=Uppercase; | | | |
| LC=Lowercase | | | | | | | | |

F.12.3.2 General Building Schemes: hzGenBldgScheme

| Identification: | hzGenBldgSchemes | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | This table provides percentages for general building type associated with all | | | | |
| | the mapping schemes in hzGenBldgSchemes. There are 33 records—one for | | | | |
| | each specific occupancy class (Res1, Res2, Com6, etc.)—for each scheme | | | | |
| | available in hzGenBldgSchemes. For each record, the percentage of building | | | | |
| | by general building type (wood, concrete, etc.) is summarized. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|---------------|-------------|-------|---------|-------------------|---------------------------------|
| | (Size) | * | d* | | |
| | Access Type | | | | |
| | (Size) | | | | |
| GenBldgSchem | Text(10) | F | T | | General building scheme unique |
| eID | | | | | ID |
| BldgSchemesId | Text(30) | F | Т | | Foreign key to BldgSchemesId |
| | | | | | field in hzGenBldgSchemes table |
| Occupancy | Text(5) | F | T, UC | RES1, RES2, | Occupancy type |
| | | | | RES3A, RES3B, | |
| | | | | RES3C, RES3D, | |
| | | | | RES3E, RES3F, | |
| | | | | RES4, RES5, | |
| | | | | RES6, COM1, | |
| | | | | COM2, COM3, | |
| | | | | COM4, COM5, | |
| | | | | COM6, COM7, | |
| | | | | COM8, COM9, | |
| | | | | COM10, IND1, | |
| | | | | IND2, IND3, | |
| | | | | IND4, IND5, | |
| | | | | IND6, AGR1, | |
| | | | | REL1, GOV1, | |
| | | | | GOV2, EDU1, | |
| | | | | EDU2 | |
| Total | Short(2) | F | F | Null or between 0 | |
| | Integer(2) | | | and 100 | Total |
| WPct | Short(2) | F | F | Null or between 0 | |
| W I Ct | Integer(2) | 1 | | and 100 | Percentage wood |
| CDot | | E | F | | |
| CPct | Short(2) | F | r | Null or between 0 | Percentage concrete |
| | Integer(2) | | | and 100 | |
| SPct | Short(2) | F | F | Null or between 0 | Percentage steel |
| | Integer(2) | | | and 100 | |
| MPct | Short(2) | F | F | Null or between 0 | Percentage masonry |
| | Integer(2) | | | and 100 | Percentage masonry |
| | | | 1 | | |

| HPct | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage manufactured homes | | |
|---|----------------------|---|---|---------------------------|-------------------------------|--|--|
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase | | | | | | | |

F.12.3.3 EQ Building Scheme Relationships Table: eqrInSchemes

| Identification: | hzGenBldgSchemes | | | | | | | |
|-----------------|--|---|------------|----------------------|---|--|--|--|
| Type: | ESRI Table | | | | | | | |
| Purpose: | | This table l | keeps a ma | ny-to-many re | lationship between the general mapping | | | |
| | | schemes (h | zGenBldg | Scheme) and the | ne specific mapping schemes | | | |
| | | (eqSpcBldgSchemes). In this way, two general schemes (as specified in | | | | | | |
| | | hzGenBldg | Schemes) | can share the s | ame scheme definition in | | | |
| | | eqSpcBldg | Schemes f | or a particular | occupancy/building type distribution (for | | | |
| | | instance, R | es1/W2). | | | | | |
| Data: | | | | | | | | |
| | | | Feature Cl | ass Field Definition | | | | |
| Name | ESRI Type | Index | Requir | Values | Description | | | |
| | (Size) | * | ed* | | | | | |
| | Access Type (S | ize) | | | | | | |
| GenBldgSche | Text(10) | F | T | | Building scheme ID in | | | |
| meId | | | | | hzGenBldgSchemes table. There | | | |
| | | | | | must be records in | | | |
| | | | | | hzGenBldgSchemes with this ID. | | | |
| eqSpcBldgSch | Text(10) | F | Т | | Specific building type Scheme ID | | | |
| emesId | | | | | in eqSpcBldgSchemes table. | | | |
| | | | | | There must be a record in | | | |
| | | | | | eqSpcBldgSchemesId with this | | | |
| | | | | | ID. | | | |
| * T=True; F=Fa | * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | | |
| LC=Lowercase | | | | | | | | |

F.12.3.4 EQ Specific Building Type Schemes Catalog: eqSpcBldgSchemes

| Identification: | eqSpcBldgSchemes | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | This table holds a list of all specific building type schemes available in the state in tables qSpcBldgSchemes, eqCBldgTypeMp, eqHBldgTypeMp, eqMBldgTypeMp, and eqSBldgTypeMp. This table is a bookkeeping table holding items such as scheme name and creation date. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|------------------|-----------------------|----------|-----------|----------------------|-------------------------------|
| | (Size) | * | d* | | |
| | Access Type(Size) | | | | |
| eqSpcBldgSchem | Text(10) | F | T | | Specific building type scheme |
| esId | | | | | unique ID |
| SchemeName | Text(30) | F | Т | | Specific building type scheme |
| | | | | | name |
| Description | Text(100) | F | F | | Scheme description |
| BldgTypeSource | Text(1) | F | F | Null | Building type source |
| | | | | W=Wood | |
| | | | | S=Steel | |
| | | | | C=Concrete | |
| | | | | M=Masonry | |
| | | | | H=Manufactured | |
| | | | | Home | |
| Created | Date | F | F | | Scheme creation date |
| | Date/Time | | | | Seneme electron dute |
| Updated | Date | F | F | | Scheme modification date |
| | Date/Time | Б | T. LIC | D. D. C. Iv | (1.6.1) |
| MappingType | Text(1) | F | T, UC | D=Default | Scheme source (default, user- |
| | | | | UE=User-defined | defined, or BIT) |
| | | | | in Earthquake | |
| | | | | Model | |
| | | | | UF=User-defined | |
| | | | | in Flood Model | |
| | | | | UH=User-defined | |
| | | | | in hurricane | |
| | | | | Model | |
| | | | | BT=BIT mapping | |
| | | | | scheme | |
| * T-True: E-Eale | L S. I.I—I.Injane: | NI I–Nor | l Inique: | A = A soonding: D=Do | scending: IIC=Unnercase: |

* T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.12.3.5 EQ Wood Specific Building Type Scheme: eqWBldgTypeMp

| Identification: | | eqWBldgTypeMp | | | | | | |
|------------------------|----------------------------------|---|--------------|--|--|--|--|--|
| Type: | | ESRI Table | | | | | | |
| Purpose: | | eqWBldgTypeMp portrays the percentage of specific wood building type by design level. | | | | | | |
| Data: | | | | | | | | |
| | | | Feature Clas | ss Field Definition | | | | |
| Name | ESRI Type (Size) Access Type (S | * | Require d* | Values | Description | | | |
| eqWBldgType MpId | Text(10) | F | Т | | General building scheme unique ID | | | |
| eqSpcBldgSch emesId | Text(30) | F | T | | Foreign key to BldgSchemesId field in hzGenBldgSchemes table | | | |
| DesignLevel | Text(2) | F | F, UC | Null, HC, MC, LC, PC, HS, MS, MS, LS, LS | Building design level. See Appendix C. | | | |
| W1P | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of wood light frame out of wood structures | | | |
| W2P | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage wood, commercial, and industrial out of wood structures | | | |

F.12.3.6 EQ Concrete Specific Building Type Scheme: eqCBldgTypeMp

| Identification: | eqCBldgTypeMp | | | | |
|--------------------------------|--|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | eqCBldgTypeMp portrays the percentage of specific concrete building by design level. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Require | Values | Description |
|--------------|--------------------|-------|---------|-------------------|-----------------------------------|
| | (Size) | * | d* | | |
| | Access Type (Size) | | | | |
| eqCBldgType | Text(10) | F | T | | General building scheme unique |
| MpId | | | | | ID |
| eqSpcBldgSch | Text(30) | F | Т | | This is a foreign key to |
| emesId | | | | | BldgSchemesId field in |
| | | | | | hzGenBldgSchemes table |
| DesignLevel | Text(2) | F | F,UC | Null, HC, MC, | Building design level. See |
| | | | | LC, PC, HS, MS, | Appendix C. |
| | | | | MS, LS, LS | |
| C1LP | Short(2) | F | F | Null or between 0 | Percentage of concrete moment |
| | Integer(2) | | | | frame, low-rise, out of concrete |
| | | | | and 100 | structures |
| C1MP | Short(2) | F | F | N. II. 1 | Percentage of concrete moment |
| | Integer(2) | | | Null or between 0 | frame, mid-rise, out of concrete |
| | | | | and 100 | structures |
| C1HP | Short(2) | F | F | Null or between 0 | Percentage of concrete moment |
| | Integer(2) | | | and 100 | frame, high-rise, out of concrete |
| | | | | | structures |
| C2LP | Short(2) | F | F | Null or between 0 | Percentage of concrete shear |
| | Integer(2) | | | and 100 | wall, low-rise, out of concrete |
| | | | | | structures |
| C2MP | Short(2) | F | F | Null or between 0 | Percentage of concrete shear |
| | Integer(2) | | | and 100 | wall, mid-rise, out of concrete |
| | | | | | structures |
| С2НР | Short(2) | F | F | Null or between 0 | Percentage of concrete shear |
| | Integer(2) | | | and 100 | wall, high-rise, out of concrete |
| | | | | | structures |
| C3LP | Short(2) | F | F | Null or between 0 | Percentage of concrete frame |
| | Integer(2) | | | and 100 | with unreinforced masonry infill |
| | | | | | walls, low-rise, out of concrete |
| | | | | | structures |
| C3MP | Short(2) | F | F | Null or between 0 | Percentage of concrete frame |
| | Integer(2) | | | and 100 | with unreinforced masonry infill |
| | 1 | | | | |

| | | | | | walls, mid-rise, out of concrete structures |
|-------|----------------------|---|---|---------------------------|---|
| СЗНР | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of concrete frame with unreinforced masonry infill walls, high-rise, out of concrete structures |
| PC1P | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of precast concrete tilt-up walls out of concrete structures |
| PC2LP | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of precast concrete frames with concrete shear walls, low-rise, out of concrete structures |
| PC2MP | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of precast concrete frames with concrete shear walls, mid-rise, out of concrete structures |
| РС2НР | Short(2) Integer(2) | F | F | Null or between 0 and 100 | Percentage of precast concrete frames with concrete shear walls, high-rise, out of concrete structures |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

F.12.3.7 EQ Steel Specific Building Type Scheme: eqSBldgTypeMp

| Identification: | eqSBldgTypeMp | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | eqSBldgTypeMp portrays the percentage of specific steel building by design level. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI Type | Index | Required | Values | Description |
|--------------|--------------------|-------|----------|-----------------|------------------------------------|
| | (Size) | * | * | | |
| | Access Type (Size) | | | | |
| eqCBldgType | Text(10) | F | T | | General building scheme unique |
| MpId | | | | | ID |
| eqSpcBldgSch | Text(30) | F | T | | Foreign key to BldgSchemesId |
| emesId | | | | | field in hzGenBldgSchemes table |
| DesignLevel | Text(2) | F | F,UC | Null, HC, MC, | Building design level. See |
| | | | | LC, PC, HS, | Appendix C. |
| | | | | MS, MS, LS, LS | |
| S1LP | Short(2) | F | F | Null or between | Percentage of steel moment |
| | Integer(2) | | | 0 and 100 | frame, low-rise, out of steel |
| | | | | o and 100 | structures |
| S1MP | Short(2) | F | F | Null or between | Percentage of steel moment |
| | Integer(2) | | | 0 and 100 | frame, mid-rise, out of steel |
| | | | | o and 100 | structures |
| S1HP | Short(2) | F | F | Null or between | Percentage of steel moment |
| | Integer(2) | | | 0 and 100 | frame, high-rise, out of steel |
| | | | | | structures |
| S2LP | Short(2) | F | F | Null or between | Percentage of steel braced frame, |
| | Integer(2) | | | 0 and 100 | low-rise, out of steel structures |
| S2MP | Short(2) | F | F | Null or between | Percentage of steel braced frame, |
| | Integer(2) | | | 0 and 100 | mid-rise, out of steel structures |
| S2HP | Short(2) | F | F | Null or between | Percentage of steel braced frame, |
| | Integer(2) | | | 0 and 100 | high-rise, out of steel structures |
| S3P | Short(2) | F | F | Null or between | Percentage of steel light frame |
| | Integer(2) | | | 0 and 100 | with unreinforced masonry infill |
| | | | | | walls low-rise, out of steel |
| | | | | | structures |
| S4LP | Short(2) | F | F | Null or between | Percentage of steel frame with |
| | Integer(2) | | | 0 and 100 | cast-in-place concrete shear |
| | | | | | walls, mid-rise, out of steel |
| | | | | | structures |
| S4MP | Short(2) | F | F | Null or between | Percentage of steel frame with |

| | Integer(2) | | | 0 and 100 | cast-in-place concrete shear |
|------|------------|---|---|-----------------|------------------------------------|
| | | | | | walls, high-rise, out of steel |
| | | | | | structures |
| S4HP | Short(2) | F | F | Null or between | Percentage of steel frame with |
| | Integer(2) | | | 0 and 100 | cast-in-place concrete shear walls |
| | | | | | out of steel structures |
| S5LP | Short(2) | F | F | Null or between | Percentage of steel frame with |
| | Integer(2) | | | 0 and 100 | unreinforced masonry infill walls, |
| | | | | | low-rise, out of steel structures |
| S5MP | Short(2) | F | F | Null or between | Percentage of steel frame with |
| | Integer(2) | | | 0 and 100 | unreinforced masonry infill walls, |
| | | | | | mid-rise, out of steel structures |
| S5HP | Short(2) | F | F | Null or between | Percentage of steel frame with |
| | Integer(2) | | | 0 and 100 | unreinforced masonry infill walls, |
| | | | | | high-rise, out of steel structures |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.12.3.8 EQ Masonry Specific Building Type Scheme: eqMBldgTypeMp

| Identification: | eqMBldgTypeMp | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | eqMBldgTypeMp portrays the percentage of specific masonry building by design level. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| MpId eqSpcBldgSch Text(30) F T Foreign key to BldgSchemesId field in hzGenBldgSchemesId field in hzGenBldgSchemes tab | Name | ESRI Type | Index | Require | Values | Description |
|--|--------------|--------------------|-------|---------|-------------------|-----------------------------------|
| eqCBldgType Mpld | | (Size) | * | d* | | |
| mpId eqSpcBldgSch Text(30) F T T Foreign key to BldgSchemesId field in hzGenBldgSchemesId field in hzGenBldgSchemes tab field in hzGenBldgSchemes tab DesignLevel Text(2) F F, UC Null, HC, MC, LC, PC, HS, MS, MS, LS, LS RM1LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F F Null or between 0 and 100 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2MP Short(2) F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 percentage of reinforced mason bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | Access Type (Size) | | | | |
| eqSpcBldgSch emesId Text(30) F T Foreign key to BldgSchemesId field in hzGenBldgSchemes tab field in hzGengles field in hzGengles field in hzGengles fie | eqCBldgType | Text(10) | F | T | | General building scheme unique |
| emesId field in hzGenBldgSchemes tab DesignLevel Text(2) F F, UC Null, HC, MC, LC, PC, HS, MS, Appendix C. Building design level. See RM1LP Short(2) F F Percentage of reinforced mason bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F Percentage of reinforced mason bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 and 100 Percentage of reinforced mason bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 and 100 Percentage of reinforced mason bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 and 100 Percentage of reinforced mason bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | MpId | | | | | ID |
| DesignLevel Text(2) F F, UC Null, HC, MC, LC, PC, HS, MS, Appendix C. RM1LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F Null or between 0 Percentage of reinforced mason bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | eqSpcBldgSch | Text(30) | F | T | | Foreign key to BldgSchemesId |
| RM1LP Short(2) F F F Null or between 0 and 100 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F F Null or between 0 and 100 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 percentage of reinforced mason bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | emesId | | | | | field in hzGenBldgSchemes table |
| RM1LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 Percentage of reinforced mason bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 Percentage of reinforced mason bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | DesignLevel | Text(2) | F | F, UC | Null, HC, MC, | Building design level. See |
| RM1LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures RM1MP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 Percentage of reinforced mason bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | | | | LC, PC, HS, MS, | Appendix C. |
| Null or between 0 bearing walls with wood or met deck diaphragms, low-rise, out masonry structures | | | | | MS, LS, LS | |
| RM1MP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, high-rise, out of masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F outlier or between 0 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | RM1LP | Short(2) | F | F | | Percentage of reinforced masonry |
| RM1MP Short(2) F F F Null or between 0 bearing walls with wood or met and 100 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F F Null or between 0 percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | Integer(2) | | | Null or between 0 | bearing walls with wood or metal |
| RM1MP Short(2) F F Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F Null or between 0 Percentage of reinforced mason bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F out of masonry structures | | | | | and 100 | deck diaphragms, low-rise, out of |
| Null or between 0 bearing walls with wood or met deck diaphragms, mid-rise, out masonry structures | | | | | | masonry structures |
| and 100 deck diaphragms, mid-rise, out masonry structures RM2LP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | RM1MP | Short(2) | F | F | | Percentage of reinforced masonry |
| RM2LP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F out of masonry structure | | Integer(2) | | | Null or between 0 | bearing walls with wood or metal |
| RM2LP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | | | | and 100 | deck diaphragms, mid-rise, out of |
| and 100 bearing walls with precast concrete diaphragms, high-rise, out of masonry structures RM2MP Short(2) F | | | | | | masonry structures |
| RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | RM2LP | Short(2) | F | F | Null or between 0 | Percentage of reinforced masonry |
| RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | Integer(2) | | | and 100 | bearing walls with precast |
| RM2MP Short(2) F F Null or between 0 Percentage of reinforced mason and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | | | | | concrete diaphragms, high-rise, |
| and 100 bearing walls with precast concrete diaphragms, low-rise, out of masonry structure | | | | | | out of masonry structures |
| concrete diaphragms, low-rise, out of masonry structure | RM2MP | Short(2) | F | F | Null or between 0 | Percentage of reinforced masonry |
| out of masonry structure | | Integer(2) | | | and 100 | bearing walls with precast |
| | | | | | | concrete diaphragms, low-rise, |
| RM2HP Short(2) F F Null or between 0 Percentage of reinforced mason | | | | | | out of masonry structure |
| Trum of Services of Terminolecul muscul | RM2HP | Short(2) | F | F | Null or between 0 | Percentage of reinforced masonry |
| Integer(2) and 100 bearing walls with precast | | Integer(2) | | | and 100 | bearing walls with precast |
| concrete diaphragms, mid-rise, | | | | | | concrete diaphragms, mid-rise, |
| out of masonry structures | | | | | | out of masonry structures |
| URMLP Short(2) F F Null or between 0 Percentage of unreinforced | URMLP | Short(2) | F | F | Null or between 0 | Percentage of unreinforced |
| Integer(2) and 100 masonry bearing walls, high-ris | | Integer(2) | | | and 100 | masonry bearing walls, high-rise, |
| out of masonry structures | | | | | | out of masonry structures |
| URMMP Short(2) F F Null or between 0 Percentage of unreinforced | URMMP | Short(2) | F | F | Null or between 0 | Percentage of unreinforced |
| Integer(2) and 100 masonry bearing walls, low-rise | | Integer(2) | | | and 100 | masonry bearing walls, low-rise, |

| | | | | | out of masonry structures | |
|--|--|--|--|--|---------------------------|--|
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | | |
| LC=Lowercase | | | | | | |

F.12.3.9 EQ Manufactured Homes Specific Building Type Scheme: eqHBldgTypeMp

| Identification: | | eqHBldgTypeMp | | | | | | | |
|-----------------|-----------------|---------------|---|---------------|------------------|---------------------------------|--|--|--|
| Type: | | | ESRI Table | | | | | | |
| Purpose: | | | eqHBldgTypeMp portrays the percentage of specific manufactured home building by design level. | | | | | | |
| Data: | | | | | | | | | |
| | | • | | Feature Class | Field Definition | | | | |
| Name | ESRI Typ | e | Index | Required | Values | Description | | | |
| | (Size) | | * | * | | | | | |
| | Access Type (Si | | | | | | | | |
| eqCBldgType | Text(10) | | F | T | | General building scheme unique | | | |
| MpId | | | | | | ID | | | |
| eqSpcBldgSch | Text(30) | | F | Т | | Foreign key to BldgSchemesId | | | |
| emesId | | | | | | field in hzGenBldgSchemes table | | | |
| DesignLevel | Text(2) | | F | F UC | Null, HC, MC, | Building design level. See | | | |
| | | | | | LC, PC, HS, | Appendix C. | | | |
| | | | | | MS, MS, LS, LS | | | | |
| MHP | Short(2) | | F | F | Null or between | Percentage of manufactured | | | |
| | Integer(2) | | | | 0 and 100 | home structures | | | |
| * T=True; F=Fa | lse; U=Uni | que; l | NU=Non | -Unique; A | =Ascending; D=De | scending; UC=Uppercase; | | | |
| LC=Lowercase | | | | | | | | | |

F.12.3.10 Flood Schemes Catalog: flSchemeInfo

| Identification: | | flSchemeInfo | | | | | | | |
|-----------------|--------------------|---|--|--------------|---------------------|-----------------------------------|--|--|--|
| Type: | | ESRI Table | | | | | | | |
| Purpose: | | This table holds a list of Flood Model related mapping schemes available in | | | | | | | |
| | | | the state. It is a bookkeeping table holding items such as scheme name and date of its creation. | | | | | | |
| Data: | | | | | | | | | |
| | | | | Feature Clas | ss Field Definition | | | | |
| Name | ESRI Typ | e | Index | Require | Values | Description | | | |
| | (Size) | | * | d* | | | | | |
| | Access Type (Size) | | | | | | | | |
| SchemeId | Text(8) | | F | T | | Building scheme unique ID | | | |
| SchemeName | Text(50) | | F | Т | | Building scheme name | | | |
| Created | Date Date/Time | | F | Т | | Scheme creation date | | | |
| Updated | Date Date/Time | | F | Т | | Scheme modification date | | | |
| Editable | Short(2) | | F | Т | 0=No | Provides information about if the | | | |
| | Integer(2) | | | | 1=Yes | scheme is editable | | | |
| Description | Text(100) | | F | F | | Scheme description | | | |
| * T=True; F=Fa | | que; | NU=No | n-Unique; A | A=Ascending; | D=Descending; UC=Uppercase; | | | |

F.12.3.11 Flood Riverine Scheme: flSchemeRiverin

| Identification: | flSchemeRiverine | | | | | | |
|--|--|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | | |
| Purpose: | flschemeRiverine portrays the distribution (expressed in percentages) of | | | | | | |
| | foundation types (pile, pier, solid wall, etc.) by occupancy with the building's | | | | | | |
| | first floor elevation for each foundation type in areas with riverine hazard. | | | | | | |
| Elevation and percentage distribution is provided for pre-FIRM and post- | | | | | | | |
| | FIRM conditions. | | | | | | |
| Data: | | | | | | | |
| Feature Class Field Definition | | | | | | | |

| Name | ESRI Type | Index | Required | Values | Description |
|----------------|-------------|-------|----------|-------------------|-------------------------------------|
| | (Size) | * | * | | |
| | Access Type | | | | |
| | (Size) | | | | |
| SchemeId | Text(10) | F | T | | Scheme unique ID |
| SOccup | Text(5) | F | T, UC | RES1, RES2, | Occupancy type |
| | | | | RES3A, RES3B, | |
| | | | | RES3C, RES3D, | |
| | | | | RES3E, RES3F, | |
| | | | | RES4, RES5, | |
| | | | | RES6, COM1, | |
| | | | | COM2, COM3, | |
| | | | | COM4, COM5, | |
| | | | | COM6, COM7, | |
| | | | | COM8, COM9, | |
| | | | | COM10, IND1, | |
| | | | | IND2, IND3, | |
| | | | | IND4, IND5, | |
| | | | | IND6, AGR1, | |
| | | | | REL1, GOV1, | |
| | | | | GOV2, EDU1, | |
| | | | | EDU2 | |
| FoundationType | Text(10) | F | T | Pile, Pier, | Building foundation type |
| | | | | SolidWall, | |
| | | | | Basement, | |
| | | | | Crawl, Fill, Slab | |
| PreFirmDist | Short(2) | F | N | | Percentage of structures built |
| T ICI IIIIDISt | Integer(2) | | | Null or between | before FIRM was made for the |
| | Imeger(2) | | | 0 and 100 | community |
| D. D. III | G1 (2) | | N.T. | | - |
| PreFirmHt | Short(2) | F | N | | Height of first floor of structures |
| | Integer(2) | | | | built before a FIRM was made |
| | | | | | for the community |
| PostFirmDist | Short(2) | F | N | Null or between | Percentage of structures built |
| | Integer(2) | | | 0 and 100 | after a FIRM was made for the |
| | | | | | community |
| | l | 1 | 1 | J. | L |

| PostFirmHt | Short(2) | F | N | | Height of first floor of structures |
|------------|------------|---|---|--------------|-------------------------------------|
| | Integer(2) | | | | built after FIRM was made for |
| | | | | | the community |
| HazardType | Text(1) | F | T | R=Riverine | Hazard type |
| | | | | C=Coastal | |
| | | | | L=Great Lake | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.12.3.12 Flood Coastal Scheme: flSchemeCoastal

| Identification: | flSchemeCoastal | | | | | |
|--------------------------------|--|--|--|--|--|--|
| Type: | ESRI Table | | | | | |
| Purpose: | flSchemeCoastal portrays the distribution (expressed in percentages) of | | | | | |
| | foundation types (pile, pier, solid wall, etc.) by occupancy with the building's | | | | | |
| | first floor elevation for each foundation type in areas with coastal hazard. | | | | | |
| | Elevation and percentage distribution is provided for pre-FIRM and post- | | | | | |
| | FIRM conditions | | | | | |
| Data: | | | | | | |
| Feature Class Field Definition | | | | | | |

| Name | ESRI | Inde | Require | Values | Description |
|-------------------|-------------|------|---------|-------------------|-------------------------------------|
| | Туре | x* | d* | | |
| | (Size) | | | | |
| | Access Type | | | | |
| | (Size) | | | | |
| SchemeId | Text(10) | F | T | | Scheme unique ID |
| SOccup | Text(5) | F | T, UC | RES1, RES2, | Occupancy type |
| | | | | RES3A, RES3B, | |
| | | | | RES3C, RES3D, | |
| | | | | RES3E, RES3F, | |
| | | | | RES4, RES5, | |
| | | | | RES6, COM1, | |
| | | | | COM2, COM3, | |
| | | | | COM4, COM5, | |
| | | | | COM6, COM7, | |
| | | | | COM8, COM9, | |
| | | | | COM10, IND1, | |
| | | | | IND2, IND3, | |
| | | | | IND4, IND5, | |
| | | | | IND6, AGR1, | |
| | | | | REL1, GOV1, | |
| | | | | GOV2, EDU1, | |
| | | | | EDU2 | |
| FoundationType | Text(10) | F | T | Pile, Pier, Solid | Building foundation type |
| | | | | Wall, Basement, | |
| | | | | Crawl, Fill, Slab | |
| PreFirmDist | Short(2) | F | F | | Percentage of structures built |
| | Integer(2) | | | Null or between 0 | before FIRM was made for the |
| | | | | and 100 | community |
| PreFirmHt | Short(2) | F | F | | Height of first floor of structures |
| | Integer(2) | | | | built before FIRM was made for |
| | | | | | the community |
| PostFirmDistAZone | Short(2) | F | F | Null or between 0 | Percentage of structures built in |
| | Integer(2) | | | and 100 | Zone A after FIRM was made for |
| | | | | | the community |
| PostFirmHtAZone | Short(2) | F | F | | Height of first floor of structures |

| Integer(2) | | | | in Zone A built after FIRM was made for the community |
|------------|---|---|---|--|
| Short(2) | | | Null or between 0 | Percentage of structures built in |
| Integer(2) | | | and 100 | Zone V after FIRM was made for |
| | | | | the community |
| Short(2) | | | | Height of first floor of structures |
| Integer(2) | | | | in Zone V built after FIRM was |
| | | | | made for the community |
| Text(1) | F | T | R=Riverine | Hazard type |
| | | | C=Coastal | |
| | | | L=Great Lake | |
| | Short(2) Integer(2) Short(2) Integer(2) | Short(2) Integer(2) Short(2) Integer(2) | Short(2) Integer(2) Short(2) Integer(2) | Short(2) Integer(2) Short(2) Integer(2) Text(1) F T R=Riverine C=Coastal |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase;

LC=Lowercase

F.12.3.13 Flood Great Lakes Scheme: flSchemeGLakes

| Identification: | flSchemeGLake | | | | |
|--------------------------------|---|--|--|--|--|
| Type: | ESRI Table | | | | |
| Purpose: | flSchemeGLake portrays the distribution (expressed in percentages) of foundation types (pile, pier, solid wall, etc.) by occupancy with the building's first floor elevation for each foundation type in Great Lakes area. Elevation and percentage distribution is provided for pre-FIRM and post-FIRM conditions. | | | | |
| Data: | | | | | |
| Feature Class Field Definition | | | | | |

| Name | ESRI | Inde | Require | Values | Description |
|-------------------|-----------------------|------|---------|-------------------|-------------------------------------|
| | Type | x* | d* | | |
| | (Size) | | | | |
| | Access Type (Size) | | | | |
| SchemeId | Text(10) | F | Т | | Scheme unique ID |
| SOccup | Text(5) | F | T, UC | RES1, RES2, | Occupancy type |
| | | | | RES3A, RES3B, | |
| | | | | RES3C, RES3D, | |
| | | | | RES3E, RES3F, | |
| | | | | RES4, RES5, | |
| | | | | RES6, COM1, | |
| | | | | COM2, COM3, | |
| | | | | COM4, COM5, | |
| | | | | COM6, COM7, | |
| | | | | COM8, COM9, | |
| | | | | COM10, IND1, | |
| | | | | IND2, IND3, | |
| | | | | IND4, IND5, | |
| | | | | IND6, AGR1, | |
| | | | | REL1, GOV1, | |
| | | | | GOV2, EDU1, | |
| | | | | EDU2 | |
| FoundationType | Text(10) | F | T | Pile, Pier, Solid | Building foundation type |
| | | | | Wall, Basement, | |
| | | | | Crawl, Fill, Slab | |
| PreFirmDist | Long(4) | F | F | N. 11 1 | Percentage of structures built |
| | Long | | | Null or between 0 | before FIRM was made for the |
| | Integer(4) | | | and 100 | community |
| PreFirmHt | Long(4) | F | F | | Height of first floor of structures |
| | Long | | | | built before FIRM was made for |
| | Integer(4) | | | | the community |
| PostFirmDistAZone | Short(2) | F | F | Null or between 0 | Percentage of structures built in |
| | Integer(2) | | | and 100 | Zone A after FIRM was made for |
| | | | | | the community |
| | | l | | | |

| PostFirmHtAZone | Short(2) | F | F | | Height of first floor of structures |
|-------------------|------------|---|---|-------------------|-------------------------------------|
| | Integer(2) | | | | in Zone A built after FIRM was |
| | | | | | made for the community |
| PostFirmDistVZone | Short(2) | | | Null or between 0 | Percentage of structures built in |
| | Integer(2) | | | and 100 | Zone V after FIRM was made for |
| | | | | | the community |
| PostFirmHtVZone | Short(2) | | | | Height of first floor of structures |
| | Integer(2) | | | | in Zone V built after FIRM was |
| | | | | | made for the community |
| HazardType | Text(1) | F | T | R=Riverine | Hazard type |
| | | | | C=Coastal | |
| | | | | L=Great Lake | |

^{*} T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; LC=Lowercase

F.12.3.14 Census Block Scheme Definition: flSchemeMapping

| Identification: | | flSchemeGLake | | | | | | | |
|--|----------------|---------------|--|--------------|--------------------------|-------------------------------|--|--|--|
| Type: | | ES | ESRI Table | | | | | | |
| Purpose: | | flS | flSchemeMapping assigns scheme type to each census block in a state. | | | | | | |
| Data: | | | | | | | | | |
| | | l | | Feature Clas | ss Field Definition | | | | |
| Name | ESRI Typ | e | Index | Require | Values | Description | | | |
| | (Size) | | * | d* | | | | | |
| | Access Type (S | Size) | | | | | | | |
| CensusBlock | Text(15) | | T, U, | | | 15 digits of the census block | | | |
| | | | A | | | number | | | |
| SchemeId | Text(10) | | F | T | | Scheme unique ID | | | |
| EntryDate | Short(2) | | F | F | | Community FIRM entry date; | | | |
| | Integer(2) | | | | | year is formatted yyyy (for | | | |
| | | | | | | instance, 2003) | | | |
| UDPrePct | Short(2) | | F | F | | | | | |
| Integer(2) | | | | | | | | | |
| * T=True; F=False; U=Unique; NU=Non-Unique; A=Ascending; D=Descending; UC=Uppercase; | | | | | escending; UC=Uppercase; | | | | |
| LC=Lowercase | | | | | | | | | |

F.13 Acronyms and Abbreviations

AHA American Hospital Association
BIT Building-Data Import Tool
CAS Chemical Abstract Service

EF Essential Facilities

EOC Emergency Operation Centers
EPA Environmental Protection Agency

EQ Earthquake

ESRI Environmental Systems Research Institute FEMA Federal Emergency Management Agency

FHWA Federal Highway Administration

FIPS Federal Information Processing Standard

FIRM Flood Insurance Rate Map

FL Flood

GBS General Building Stock

GIS Geographic Information System

Hazus-MH MR3 Hazard United States-Multihazard Maintenance Release 3

HPLF High Potential Loss Facilities

HU Hurricane

NEHRP National Earthquake Hazard Reduction Program

POWSAN Potable Water System Analysis Model

USPS United States Postal Service

F.14 Classification Systems

Table F.14.1 Site Classes

| | | Shear Wave V | Velocity (m/sec) |
|-------------|--|----------------|------------------|
| Site Class | Site Class Description | Minimum | Maximum |
| A | Hard Rock | 1500 | |
| | Eastern United States sites only | | |
| В | Rock | 760 | 1500 |
| С | Very Dense Soil and Soft Rock | 360 | 760 |
| | Untrained shear strength $u_s \ge 2000 \text{ psf } (u_s \ge 100 \text{ kPa})$ | | |
| | or $N \ge 50$ blows/ft | | |
| D | Stiff Soils | 180 | 360 |
| | Stiff soil with undrained shear strength 1000 psf \leq u _s | | |
| | \leq 2000 psf (50 kPa \leq u _s \leq 100 kPa) or 15 \leq N \leq 50 | | |
| | blows/ft | | |
| | Soft Soils | | 180 |
| | Profile with more than 10 ft (3 m) of soft clay defined | | |
| | as soil with plasticity index PI > 20, moisture content | | |
| | $w > 40\%$ and undrained shear strength $u_s < 1000 \text{ psf}$ | | |
| | (50 kPa) (N < 15 blows/ft) | | |
| F | Soils Requiring Site specific Evaluations | | |
| | 1. Soils vulnerable to potential failure or collapse | | |
| | under seismic loading: | | |
| | e.g. liquefiable soils, quick and highly sensitive | | |
| | clays, collapsible weakly cemented soils. | | |
| | 2. Peats and/or highly organic clays | | |
| | (10 ft (3 m) or thicker layer) | | |
| | 3. Very high plasticity clays: | | |
| | (25 ft (8 m) or thicker layer with plasticity index >75) | | |
| | 4. Very thick soft/medium stiff clays: | | |
| | (120 ft (36 m) or thicker layer) | | |
| Source: 199 | 97 National Earthquake Hazard Reduction Program (NEI | HRP) Provision | S |

Table F.14.2 Structural Building Classifications

| | | | Height | | | |
|-----|-------|------------------------------------|-----------|---------|---------|------|
| No. | Label | Description | Range | | Typical | |
| | | | Name | Stories | Stories | Feet |
| 1 | W1 | Wood, Light Frame (≤ 5,000 sq.ft.) | | 1 - 2 | 1 | 14 |
| 2 | W2 | Wood, Greater than 5,000 sq. ft. | | All | 2 | 24 |
| 3 | S1L | Steel Moment Frame | Low-Rise | 1 - 3 | 2 | 24 |
| 4 | S1M | | Mid-Rise | 4 - 7 | 5 | 60 |
| 5 | S1H | | High-Rise | 8+ | 13 | 156 |
| 6 | S2L | Steel Braced Frame | Low-Rise | 1 - 3 | 2 | 24 |
| 7 | S2M | | Mid-Rise | 4 - 7 | 5 | 60 |
| 8 | S2H | | High-Rise | 8+ | 13 | 156 |
| 9 | S3 | Steel Light Frame | | All | 1 | 15 |
| 10 | S4L | Steel Frame with Cast-in-Place | Low-Rise | 1 - 3 | 2 | 24 |
| 11 | S4M | Concrete Shear Walls | Mid-Rise | 4 - 7 | 5 | 60 |
| 12 | S4H | | High-Rise | 8+ | 13 | 156 |
| 13 | S5L | Steel Frame with Unreinforced | Low-Rise | 1 - 3 | 2 | 24 |
| 14 | S5M | Masonry Infill Walls | Mid-Rise | 4 - 7 | 5 | 60 |
| 15 | S5H | | High-Rise | 8+ | 13 | 156 |
| 16 | C1L | Concrete Moment Frame | Low-Rise | 1 - 3 | 2 | 20 |
| 17 | C1M | | Mid-Rise | 4 - 7 | 5 | 50 |
| 18 | C1H | | High-Rise | 8+ | 12 | 120 |
| 19 | C2L | Concrete Shear Walls | Low-Rise | 1 - 3 | 2 | 20 |
| 20 | C2M | | Mid-Rise | 4 - 7 | 5 | 50 |
| 21 | С2Н | | High-Rise | 8+ | 12 | 120 |
| 22 | C3L | Concrete Frame with Unreinforced | Low-Rise | 1 - 3 | 2 | 20 |
| 23 | C3M | Masonry Infill Walls | Mid-Rise | 4 - 7 | 5 | 50 |
| 24 | СЗН | | High-Rise | 8+ | 12 | 120 |
| 25 | PC1 | Precast Concrete Tilt-Up Walls | | All | 1 | 15 |
| 26 | PC2L | Precast Concrete Frames with | Low-Rise | 1 - 3 | 2 | 20 |

| 27 | PC2M | Concrete Shear Walls | Mid-Rise | 4 - 7 | 5 | 50 |
|----|------|------------------------------------|-----------|-------|----|-----|
| 28 | PC2H | | High-Rise | 8+ | 12 | 120 |
| 29 | RM1L | Reinforced Masonry Bearing Wall s | Low-Rise | 1-3 | 2 | 20 |
| 30 | RM2M | with Wood or Metal Deck Diaphragms | Mid-Rise | 4+ | 5 | 50 |
| 31 | RM2L | Reinforced Masonry Bearing Wall s | Low-Rise | 1 - 3 | 2 | 20 |
| 32 | RM2M | with Precast Concrete Diaphragms | Mid-Rise | 4 - 7 | 5 | 50 |
| 33 | RM2H | | High-Rise | 8+ | 12 | 120 |
| 34 | URML | Unreinforced Masonry Bearing Walls | Low-Rise | 1 - 2 | 1 | 15 |
| 35 | URMM | | Mid-Rise | 3+ | 3 | 35 |
| 36 | МН | Mobile Homes | | All | 1 | 10 |

Table F.14.3 Building Occupancy Classes

| Label | Occupancy Class | Example Descriptions |
|-------|---------------------------------|--|
| | Residential | |
| RES1 | Single Family Dwelling | House |
| RES2 | Mobile Home | Mobile Home |
| RES3 | Multi Family Dwelling | Apartment/Condominium |
| | RES3A Duplex | |
| | RES3B 3-4 Units | |
| | RES3C 5-9 Units | |
| | RES3D 10-19 Units | |
| | RES3E 20-49 Units | |
| | RES3F 50+ Units | |
| RES4 | Temporary Lodging | Hotel/Motel |
| RES5 | Institutional Dormitory | Group Housing (military, college), Jails |
| RES6 | Nursing Home | |
| | Commercial | |
| COM1 | Retail Trade | Store |
| COM2 | Wholesale Trade | Warehouse |
| COM3 | Personal and Repair Services | Service Station/Shop |
| COM4 | Professional/Technical Services | Offices |
| COM5 | Banks | |
| COM6 | Hospital | |
| COM7 | Medical Office/Clinic | |
| COM8 | Entertainment & Recreation | Restaurants/Bars |
| COM9 | Theaters | Theaters |
| COM10 | Parking | Garages |
| | Industrial | |
| IND1 | Heavy | Factory |
| IND2 | Light | Factory |

| IND3 | Food/Drugs/Chemicals | Factory |
|------|----------------------------|--------------------------------|
| IND4 | Metals/Minerals Processing | Factory |
| IND5 | High Technology | Factory |
| IND6 | Construction | Office |
| | Agriculture | |
| AGR1 | Agriculture | |
| | Religion/Non/Profit | |
| REL1 | Church/Non-Profit | |
| | Government | |
| GOV1 | General Services | Office |
| GOV2 | Emergency Response | Police/Fire Station/EOC |
| | Education | |
| EDU1 | Grade Schools | |
| EDU2 | Colleges/Universities | Does not include group housing |

Table F.14.4 Essential Facilities Classification

| Label | Occupancy Class | Description |
|-------|-----------------------------|-------------------------------------|
| | Medical Care Facilities | |
| EFHS | Small Hospital | Hospital with less than 50 Beds |
| EFHM | Medium Hospital | Hospital with beds between 50 & 150 |
| EFHL | Large Hospital | Hospital with greater than 150 Beds |
| EFMC | Medical Clinics | Clinics, Labs, Blood Banks |
| | Emergency Response | |
| EFFS | Fire Station | |
| EFPS | Police Station | |
| EFEO | Emergency Operation Centers | |
| | Schools | |
| EFS1 | Grade Schools | Primary/ High Schools |
| EFS2 | Colleges/Universities | |

Table F.14.5 High Potential Loss Facilities Classification

| Label | Description |
|-------|--------------------------|
| | Dams |
| HPDE | Earth |
| HPDR | Rock fill |
| HPDG | Gravity |
| HPDB | Buttress |
| HPDA | Arch |
| HPDU | Multi-Arch |
| HPDC | Concrete |
| HPDM | Masonry |
| HPDS | Stone |
| HPDT | Timber Crib |
| HPDZ | Miscellaneous |
| | Nuclear Power Facilities |
| HPNP | Nuclear Power Facilities |
| | Military Installations |
| HPMI | Military Installations |

Table F.14.6 Highway System Classification

| Label | Description |
|-------|--|
| | Highway Roads |
| HRD1 | Major Roads |
| HRD2 | Urban Roads |
| | Highway Bridges |
| HWB1 | Major Bridge - Length > 150m (Conventional Design) |
| HWB2 | Major Bridge - Length > 150m (Seismic Design) |
| HWB3 | Single Span – (Not HWB1 or HWB2) (Conventional Design) |
| HWB4 | Single Span – (Not HWB1 or HWB2) (Seismic Design) |
| HWB5 | Concrete, Multi-Column Bent, Simple Support (Conventional Design), Non-California (Non-CA) |
| HWB6 | Concrete, Multi-Column Bent, Simple Support (Conventional Design), California (CA) |
| HWB7 | Concrete, Multi-Column Bent, Simple Support (Seismic Design) |
| HWB8 | Continuous Concrete, Single Column, Box Girder (Conventional Design) |
| HWB9 | Continuous Concrete, Single Column, Box Girder (Seismic Design) |
| HWB10 | Continuous Concrete, (Not HWB8 or HWB9) (Conventional Design) |
| HWB11 | Continuous Concrete, (Not HWB8 or HWB9) (Seismic Design) |
| HWB12 | Steel, Multi-Column Bent, Simple Support (Conventional Design), Non-California (Non-CA) |
| HWB13 | Steel, Multi-Column Bent, Simple Support (Conventional Design), California (CA) |
| HWB14 | Steel, Multi-Column Bent, Simple Support (Seismic Design) |
| HWB15 | Continuous Steel (Conventional Design) |
| HWB16 | Continuous Steel (Seismic Design) |
| HWB17 | PS Concrete Multi-Column Bent, Simple Support - (Conventional Design), Non-California |
| HWB18 | PS Concrete, Multi-Column Bent, Simple Support (Conventional Design), California (CA) |
| HWB19 | PS Concrete, Multi-Column Bent, Simple Support (Seismic Design) |
| HWB20 | PS Concrete, Single Column, Box Girder (Conventional Design) |
| HWB21 | PS Concrete, Single Column, Box Girder (Seismic Design) |
| HWB22 | Continuous Concrete, (Not HWB20/HWB21) (Conventional Design) |

| HWB23 | Continuous Concrete, (Not HWB20/HWB21) (Seismic Design) |
|-------|--|
| HWB24 | Same definition as HWB12 except that the bridge length is less than 20 meters |
| HWB25 | Same definition as HWB13 except that the bridge length is less than 20 meters |
| HWB26 | Same definition as HWB15 except that the bridge length is less than 20 meters and Non-CA |
| HWB27 | Same definition as HWB15 except that the bridge length is less than 20 meters and in CA |
| HWB28 | All other bridges that are not classified (including wooden bridges) |
| | Highway Tunnels |
| HTU1 | Highway Bored/Drilled Tunnel |
| HTU2 | Highway Cut and Cover Tunnel |

Table F.14.7 Railway System Classification

| Label | Description |
|-------|--|
| | Railway Tracks |
| RTR1 | Railway Tracks |
| | Railway Bridges |
| | Steel, Multi-Column Bent, Simple Support (Conventional Design), Non- |
| RLB1 | California (Non-CA) |
| | Steel, Multi-Column Bent, Simple Support (Conventional Design), California |
| RLB2 | (CA) |
| RLB3 | Steel, Multi-Column Bent, Simple Support (Seismic Design) |
| RLB4 | Continuous Steel (Conventional Design) |
| RLB5 | Continuous Steel (Seismic Design) |
| RLB6 | Same definition as HWB1 except that the bridge length is less than 20 meters |
| RLB7 | Same definition as HWB2 except that the bridge length is less than 20 meters |
| | Same definition as HWB4 except that the bridge length is less than 20 meters |
| RLB8 | and Non-CA |
| | Same definition as HWB5 except that the bridge length is less than 20 meters |
| RLB9 | and in CA |
| RLB10 | All other bridges that are not classified |
| | Railway Urban Station |
| RST | Rail Urban Station (with all building type options enabled) |
| | Railway Tunnels |
| RTU1 | Rail Bored/Drilled Tunnel |
| RTU2 | Rail Cut and Cover Tunnel |
| | Railway Fuel Facility |
| RFF | Rail Fuel Facility (different combinations for with or without anchored |
| | components and/or with or without backup power) |
| | Railway Dispatch Facility |
| RDF | Rail Dispatch Facility (different combinations for with or without anchored |
| | components and/or with or without backup power) |
| | Railway Maintenance Facility |
| RMF | Rail Maintenance Facility (with all building type options enabled) |

Table F.14.8 Light Rail System Classification

| Label | Description |
|-------|---|
| | Light Rail Tracks |
| LTR1 | Light Rail Track |
| | Light Rail Bridges |
| | Steel, Multi-Column Bent, Simple Support (Conventional Design), Non-California |
| LRB1 | (Non-CA) |
| LRB2 | Steel, Multi-Column Bent, Simple Support (Conventional Design), California (CA) |
| LRB3 | Steel, Multi-Column Bent, Simple Support (Seismic Design) |
| LRB4 | Continuous Steel (Conventional Design) |
| LRB5 | Continuous Steel (Seismic Design) |
| LRB6 | Same definition as HWB1 except that the bridge length is less than 20 meters |
| LRB7 | Same definition as HWB2 except that the bridge length is less than 20 meters |
| | Same definition as HWB4 except that the bridge length is less than 20 meters and |
| LRB8 | Non-CA |
| _ | Same definition as HWB5 except that the bridge length is less than 20 meters and |
| LRB9 | in CA |
| LRB10 | All other bridges that are not classified |
| | Light Rail Tunnels |
| LTU1 | Light Rail Bored/Drilled Tunnel |
| LTU2 | Light Rail Cut and Cover Tunnel |
| | DC Substation |
| LDC1 | Light Rail DC Substation w/ Anchored Sub-Components |
| LDC2 | Light Rail DC Substation w/ Unanchored Sub-Components |
| | Dispatch Facility |
| LDF | Light Rail Dispatch Facility (different combinations for with or without anchored |
| | components and/or with or without backup power) |
| | Maintenance Facility |
| LMF | Maintenance Facility (with all building type options enabled) |
| | |

Table F.14.9 Bus System Classification

| Label | Description |
|-------|--|
| | Bus Urban Station |
| BPT | Bus Urban Station (with all building type options enabled) |
| | Bus Fuel Facility |
| BFF | Bus Fuel Facility (different combinations for with or without anchored components and/or with or without backup power) |
| | Bus Dispatch Facility |
| BDF | Bus Dispatch Facility (different combinations for with or without anchored components and/or with or without backup power) |
| | Bus Maintenance Facility |
| BMF | Bus Maintenance Facilities (with all building type options enabled) |

Table F.14.10 Port and Harbor System Classification

| Label | Description |
|-------|---|
| | Waterfront Structures |
| PWS | Waterfront Structures |
| | Cranes/Cargo Handling Equipment |
| PEQ1 | Stationary Port Handling Equipment |
| PEQ2 | Rail Mounted Port Handling Equipment |
| | Warehouses |
| PWH | Port Warehouses (with all building type options enabled) |
| | Fuel Facility |
| PFF | Port Fuel Facility (different combinations for with or without anchored components and/or with or without backup power) |

Table F.14.11 Ferry System Classification

| Label | Description |
|-------|--|
| | Water Front Structures |
| FWS | Ferry Waterfront Structures |
| | Ferry Passenger Terminals |
| FPT | Passenger Terminals (with all building type options enabled) |
| | Ferry Fuel Facility |
| FFF | Ferry Fuel Facility (different combinations for with or without anchored |
| | components and/or with or without backup power) |
| | Ferry Dispatch Facility |
| FDF | Ferry Dispatch Facility (different combinations for with or without |
| | anchored components and/or with or without backup power) |
| | Ferry Maintenance Facility |
| FMF | Piers and Dock Facilities (with all building type options enabled) |

Table F.14.12 Airport System Classification

| Label | Description |
|-------|--|
| | Airport Control Towers |
| ACT | Airport Control Tower (with all building type options enabled) |
| | Airport Terminal Buildings |
| ATB | Airport Terminal Building (with all building type options enabled) |
| | Airport Parking Structures |
| APS | Airport Parking Structure (with all building type options enabled) |
| | Fuel Facilities |
| AFF | Airport Fuel Facility (different combinations for with or without anchored |
| | components and/or with or without backup power) |
| | Airport Maintenance & Hangar Facility |
| AMF | Airport Maintenance & Hangar Facility (with all building type options enabled) |
| ARW | Airport Runway |
| | Airport Facilities - Others |
| AFO | Gliderport, Seaport, Stolport, Ultralight or Balloonport Facilities |
| AFH | Heliport Facilities |

Table F.14.13 Potable Water System Classification

| Label | Description |
|-------|--|
| | Pipelines |
| PWP1 | Brittle Pipe |
| PWP2 | Ductile Pipe |
| | Pumping Plants |
| PPPL | Large Pumping Plant (> 50 MGD) [different combinations for with or without anchored components] |
| PPPM | Medium Pumping Plant (10 to 50 MGD) [different combinations for with or without anchored components] |
| PPPS | Small Pumping Plant (< 10 MGD) [different combinations for with or without anchored components] |
| | Wells |
| PWE | Wells |
| | Water Storage Tanks (Typically, 0.5 MGD to 2 MGD) |
| PSTAS | Above Ground Steel Tank |
| PSTBC | Buried Concrete Tank |
| PSTGC | On Ground Concrete Tank |
| PSTGS | On Ground Steel Tank |
| PSTGW | On Ground Wood Tank |
| | Water Treatment Plants |
| PWTL | Large WTP (> 200 MGD) [different combinations for with or without anchored components] |
| PWTM | Medium WTP (50-200 MGD) [different combinations for with or without anchored components] |
| PWTS | Small WTP (< 50 MGD) [different combinations for with or without anchored components] |

Table F.14.14 Waste Water System Classification

| Label | Description |
|-------|--|
| | Buried Pipelines |
| WWP1 | Brittle Pipe |
| WWP2 | Ductile Pipe |
| | Waste Water Treatment Plants |
| WWTL | Large WWTP (> 200 MGD) [different combinations for with or without anchored components] |
| WWTM | Medium WWTP (50-200 MGD) [different combinations for with or without anchored components] |
| WWTS | Small WWTP (< 50 MGD) [different combinations for with or without anchored components] |
| | Lift Stations |
| WLSL | Large Lift Stations (> 50 MGD) [different combinations for with or without anchored components] |
| WLSM | Medium Lift Stations (10 MGD - 50 MGD) [different combinations for with or without anchored components] |
| WLSS | Small Lift Stations (< 10 MGD) [different combinations for with or without anchored components] |

Table F.14.15 Oil System Classification

| Label | Description | | | | |
|-------|--|--|--|--|--|
| | Pipelines | | | | |
| OIP1 | Welded Steel Pipe with Gas Welded Joints | | | | |
| OIP2 | Welded Steel Pipe with Arc Welded Joints | | | | |
| | Refineries | | | | |
| ORFL | Large Refinery (> 500,000 lb./day) [different combinations for with or without anchored components] | | | | |
| ORFM | Medium Refinery (100,000 - 500,000 lb./ day) [different combinations for with or without anchored components] | | | | |
| ORFS | Small Refinery (< 100,000 lb./day) [different combinations for with or without anchored components] | | | | |
| | Pumping Plants | | | | |
| OPP | Pumping Plant [different combinations for with or without anchored components] | | | | |
| | Tank Farms | | | | |
| OTF | Tank Farms with Anchored Tanks [different combinations for with or without anchored components] | | | | |

Table F.14.16 Natural Gas System Classification

| Label | Description |
|-------|--|
| | Buried Pipelines |
| NGP1 | Welded Steel Pipe with Gas Welded Joints |
| NGP2 | Welded Steel Pipe with Arc Welded Joints |
| | Compressor Stations |
| NGC | Compressor Stations [different combinations for with or without anchored components] |

Table F.14.17 Electric Power System Classification

| Label | Description | | | |
|-------|---|--|--|--|
| | Transmission Substations | | | |
| ESSL | Low Voltage (115 KV) Substation [different combinations for with or without anchored components] | | | |
| ESSM | Medium Voltage (230 KV) Substation [different combinations for with or without anchored components] | | | |
| ESSH | High Voltage (500 KV) Substation [different combinations for with or without anchored components] | | | |
| | Distribution Circuits | | | |
| EDC | Distribution Circuits (either Seismically Designed Components or Standard Components) | | | |
| | Generation Plants | | | |
| EPPL | Large Power Plants (> 500 MW) [different combinations for with or without anchored components] | | | |
| ЕРРМ | Medium Power Plants (100 - 500 MW) [different combinations for with or without anchored components] | | | |
| EPPS | Small Power Plants (< 100 MW) [different combinations for with or without anchored components] | | | |

Table F.14.18 Communication Classification

| Label | Description |
|-------|--|
| | Central Offices |
| CCO | Central Offices (different combinations for with or without anchored components and/or with or without backup power) |
| | Stations or Transmitters |
| CBR | AM or FM radio stations or transmitters |
| CBT | TV stations or transmitters |
| CBW | Weather stations or transmitters |

| CBO | Other stations or transmitters |
|-----|--------------------------------|
| | |

15. New Design Level

Design level is a combination of Seismic Design Level and Building Quality and is explicitly considered in the earthquake model. The table below shows how Seismic Design Level and Building Quality are combined to obtain the seven design levels used by the methodology.

| | | Old Code Combination | |
|----------|-------------------------|----------------------|-------------|
| New Code | Description | BldgQuality | DesignLevel |
| НС | High – Code | Code | High |
| MC | Moderate - Code | Code | Moderate |
| LC | Low – Code | Code | Low |
| PC | Pre – Code | Inferior | Low |
| HS | Special High – Code | Superior | High |
| MS | Special Moderate – Code | Superior | Moderate |
| MS | Special Moderate – Code | Inferior | High |
| LS | Special Low – Code | Superior | Low |
| LS | Special Low – Code | Inferior | Moderate |