**List of H3 hexagon layer reference inputs and their attributes.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Field Name | Alias | Type | Input Layer name | Description |
| OBJECTID | OBJECTID | Object ID | Automatically generated | Automatically generated |
| SHAPE | SHAPE | Geometry | Automatically generated | Automatically generated |
| GRID\_ID | GRID\_ID | Text | Automatically generated | Automatically generated |
| STATE\_FP | STATE\_FP | Text (2) | tl\_2021\_us\_county | Current State FIPS code |
| STATE\_AB | STATE\_AB | Text (2) | tl\_2021\_us\_county | State abbreviation calculated from STATEFP |
| STATE\_NM | STATE\_NM | Text (15) | tl\_2021\_us\_ county | State name calculated from STATEFP |
| COUNTY\_FP | COUNTY\_FP | Text (3) | tl\_2021\_us\_county | Current County FIPS code |
| CNTY\_NAME | CNTY\_NAME | Text (25) | tl\_2021\_us\_county | Current county name |
| GEO\_ID | GEO\_ID | Text (5) | tl\_2021\_us\_county | County Identifier, a concatenation of current state and county FIPS codes |
| EDA\_ID | EDA\_ID | Text (3) | ConUS\_EstuarineDrainageAreas | GeoID from EDA layer |
| EDA\_NAME | EDA\_NAME | Text (100) | ConUS\_EstuarineDrainageAreas | Name of estuarine drainage area |
| HUC\_8 | HUC\_8 | Text (8) | ds573\_wbd\_huc8 | The HUC8 field is a unique 8-digit hydrologic unit code |
| HUC\_12 | HUC\_12 | Text (12) | WBDHU12 | The HUC12 field is a unique 12-digit hydrologic unit code |
| POP\_SQMI | POP\_SQMI | Long | dtl\_cnty\_Census\_ESRI  tl\_2021\_us\_county | County based population density by square miles (2020) for FIPS\_Land only |
| FIPS\_Lnd\_Wtr | FIPS\_Lnd\_Wtr | Text (15) | dtl\_cnty\_Census\_ESRI  tl\_2021\_us\_county | GEOID\_Land, GEOID\_Water (inside the US counties), Water (outside of the counties) |
| Shape\_Length | Shape\_Length | Double | Automatically generated | Automatically generated, in meters |
| Shape\_Area | Shape\_Area | Double | Automatically generated | Automatically generated, in sq. meters |

The hex layer reference inputs were calculated based on Spatial Join with the "Have their center in" match option.

The grid input layers: "K:\projects\rgmg\MSGeoProject\Projects\Grid\_Effort\H3Grid\_Inputs.gdb\Grid\_layers"

**Key fields/Input data sources/file paths**

**State and County input fields**

<https://www2.census.gov/geo/tiger/TIGER2021/COUNTY/>

K:\projects\rgmg\MSGeoProject\Projects\Grid\_Effort\H3Grid\_Inputs.gdb\Inputs\tj\_2021\_us\_state

**EDA:**<https://www.sciencebase.gov/catalog/item/61df0e7fd34ed79294021ebe>  
K:\projects\rgmg\MSGeoProject\Projects\Resiliency\Resiliency\_Data\ConUS\_EstuarineDrainageAreas.shp

**Watershed data:**<https://datagateway.nrcs.usda.gov/catalog/productdescription/wbd.html>  
<https://hydro.nationalmap.gov/arcgis/rest/services/wbd/MapServer>  
K:\projects\rgmg\MSGeoProject\Projects\Resiliency\Resiliency\_Data\USGS\_Watershed

**State and County input fields**

<https://www2.census.gov/geo/tiger/TIGER2021/COUNTY/>

K:\projects\rgmg\MSGeoProject\Projects\Grid\_Effort\H3Grid\_Inputs.gdb\Inputs\tj\_2021\_us\_state

**Land and Water, Population Density (detailed county boundaries)**

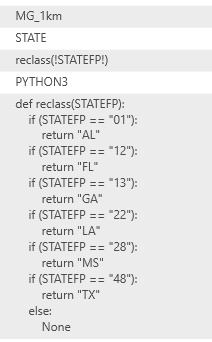
https://services.arcgis.com/P3ePLMYs2RVChkJx/arcgis/rest/services/USA\_Census\_Counties/FeatureServer

K:\projects\rgmg\MSGeoProject\Projects\Grid\_Effort\H3Grid\_Inputs.gdb\Inputs\dtl\_cnty\_Census\_ESRI

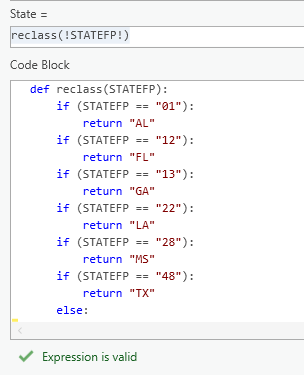
The State field calculation (expression saved here: "K:\projects\rgmg\MSGeoProject\Projects\Resiliency\Grid\MGrid\StateAbbr.cal")

Note\*:

# The DeleteField function is used to remove the extra fields created during the join.

else:

None

(\*this will calculate Null values for cells without state attribute)