



Resilient Florida Planning Grants

GIS Data Standards

Pursuant to [section 380.093 \(3\)\(c\), Florida Statutes](#), grantees who receive funding to complete a vulnerability assessment shall submit to the Florida Department of Environmental Protection (DEP) all electronic mapping data used to illustrate the flooding and sea level rise impacts identified in the assessment. The grantees shall also submit the associated metadata for each geospatial item. These items must be compatible with DEP's Geographic Information System (GIS) infrastructure and tools and mapping coordinate reference systems. To aid in the compliance with this requirement, the following list has been compiled of acceptable digital data formats, metadata standards and required mapping datums.

Digital File Formats:

- **Vector Data Formats:**
 - File Geodatabase Feature Class – Feature classes are homogeneous collections of common features, each having the same spatial representation, and containing both the geometric shape of each feature as well as descriptive attributes. Feature classes can only be stored inside a geodatabase. This is an Esri proprietary format.
 - Shapefile – A shapefile is a vector data storage format that stores the location, shape, and attributes of geographic features with the same geometry type and the same spatial reference. This is an Esri proprietary format.
 - KML – is an XML notation for expressing geographic annotation and visualization within two-dimensional maps and three-dimensional Earth browsers, initially developed for use with Google Earth. This is an open standard format.
 - GeoJSON – GeoJSON is a geospatial data interchange format designed to represent simple geographic features and their nonspatial attributes, based on JavaScript Object Notation (JSON). This is an open standard format.
- **Raster Data Formats:**
 - File Geodatabase Raster – Native data model for storing raster datasets inside a geodatabase. This is an Esri proprietary format.
 - TIFF/GeoTIFF – A TIFF is an image file format for storing raster graphic images. GeoTIFF is a metadata standard which allows georeferencing information to be embedded within a TIFF raster file. These are open standard formats.
 - Other – For a more detailed list of acceptable raster formats, please see *Supported Raster Formats* reference link.
- **Data Package Formats:**
 - Esri Project Package – A project package is a file that contains all maps and the data referenced by its layers, as well as folder connections, toolboxes, geoprocessing history, and attachments. This is an Esri proprietary format.

- OGC GeoPackage – A GeoPackage is a platform-independent and standards-based data format for transferring geospatial information, implemented as an SQLite database container. This in an open standard format.

Datums and Coordinate Reference Systems:

- Geospatial data shall be delivered projected into the appropriate Florida State Plane Coordinate System.
- Horizontal Datum: North American Datum of 1983 with 1990 Adjustments (NAD83/90), or later.
- Vertical Datum: North American Vertical Datum of 1988 (NAVD88).

Metadata Standards:

- Metadata shall be compliant with the *Content Standard for Digital Geospatial Metadata* (CSDGM) developed by the Federal Geographic Data Committee (FGDC). Acceptable formats are:
 - File Geodatabase FGDC-CSDGM Metadata – format for creating and editing the metadata of Esri items. The metadata is embedded in the item it describes. This is an Esri proprietary format.
 - XML – Extensible Markup Language (XML) is a markup language and file format for storing, transmitting, and reconstructing arbitrary data. This in an open standard format.
- The Department encourages metadata to include the following information, as applicable:
 - Title – Name for the dataset.
 - Summary – Short summary of what the dataset represents.
 - Description – Basic information about the dataset and its purpose.
 - Process Summary – Steps in creating the dataset or layer.
 - Dates of Data Collection – Collection date of the dataset.
 - Date of Publication – Date of publishing or last update of the dataset.
 - Contact Person – Person responsible of the maintenance of the dataset.
 - Credits – Person or entity responsible for the compiling the dataset.
 - Use Limitation – Restrictions or legal prerequisites to using the dataset.

Critical Assets Attributes

- To standardize information for all the critical assets across the state, delivered critical asset datasets should have following attributes, as applicable:
 - Entity Name – Name of entity (i.e., County, city, local government, etc).
 - Asset Name – Asset label or description (i.e., hydrant, stormwater pipe, cell tower, etc).
 - Asset Type – Statutory asset type (i.e., airports, bridges, roadways, marinas, etc).
 - Asset Class – Statutory asset group (i.e., transportation and evacuation route, critical infrastructure, critical community and emergency facilities, etc).
 - Asset Owner/Operator – The owner or maintainer of the asset.

- Asset Elevation – Elevation of the asset.
- Asset Size/Capacity Data (i.e., capacity for wastewater facilities, acres, etc.)
- Asset Unique ID – Unique identifier of the asset.
- Pursuant to 380.093(2) Definitions, **Asset Type** refers to the individual asset, and **Asset Class** refers to the broader asset category. See classification table below:

Asset Type	Asset Class
Airports	Transportation and Evacuation Routes
Bridges	Transportation and Evacuation Routes
Bus Terminals	Transportation and Evacuation Routes
Ports	Transportation and Evacuation Routes
Major Roadways	Transportation and Evacuation Routes
Marinas	Transportation and Evacuation Routes
Rail Facilities	Transportation and Evacuation Routes
Railroad Bridges	Transportation and Evacuation Routes
Wastewater Treatment Facilities and Lift Stations	Critical Infrastructure
Stormwater Treatment Facilities and Pump Stations	Critical Infrastructure
Drinking Water Facilities	Critical Infrastructure
Water Utility Conveyance Systems	Critical Infrastructure
Electric Production and Supply Facilities	Critical Infrastructure
Solid and Hazardous Waste Facilities	Critical Infrastructure
Military Installations	Critical Infrastructure
Communications Facilities	Critical Infrastructure
Disaster Debris Management Sites	Critical Infrastructure
Schools	Critical Community and Emergency Facilities
Colleges and Universities	Critical Community and Emergency Facilities
Community Centers	Critical Community and Emergency Facilities
Correctional Facilities	Critical Community and Emergency Facilities
Disaster Recovery Centers	Critical Community and Emergency Facilities
Emergency Medical Service Facilities	Critical Community and Emergency Facilities
Emergency Operation Centers	Critical Community and Emergency Facilities
Fire Stations	Critical Community and Emergency Facilities
Health Care Facilities	Critical Community and Emergency Facilities
Hospitals	Critical Community and Emergency Facilities
Law Enforcement Facilities	Critical Community and Emergency Facilities
Local Government Facilities	Critical Community and Emergency Facilities
Logistical Staging Areas	Critical Community and Emergency Facilities
Affordable Public Housing	Critical Community and Emergency Facilities
Risk Shelter Inventory	Critical Community and Emergency Facilities
State Government Facilities	Critical Community and Emergency Facilities
Conservation Lands	Natural, Cultural, and Historical Resource
Parks	Natural, Cultural, and Historical Resource

Shorelines	Natural, Cultural, and Historical Resource
Surface Waters	Natural, Cultural, and Historical Resource
Wetlands	Natural, Cultural, and Historical Resource
Historical and Cultural Assets	Natural, Cultural, and Historical Resource

References:

- Esri, *File Geodatabases*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/data/geodatabases/manage-file-gdb/file-geodatabases.htm>.
- Esri, *Feature Classes*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/data/feature-classes/feature-classes.htm>.
- Esri, *Shapefiles in ArcGIS Pro*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/data/shapefiles/working-with-shapefiles-in-arcgis-pro.htm>.
- Open Geospatial Consortium, *OGC KML Standard*:
 - <https://www.ogc.org/standards/kml>
- GeoJSON, *GeoJSON*:
 - <https://geojson.org/>.
- Esri, *Supported Raster Formats*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/data/imagery/supported-raster-dataset-file-formats.htm>.
- Open Geospatial Consortium, *OGC GeoTIFF Standard*:
 - <https://www.ogc.org/standards/geotiff>.
- Esri, *Share a Project Package*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/sharing/overview/project-package.htm>.
- Open Geospatial Consortium, *OGC GeoPackage Encoding Standard*:
 - <https://www.ogc.org/standards/geopackage>.
- Federal Geographic Data Committee, *Content Standard for Digital Geospatial Metadata*:
 - <https://www.fgdc.gov/metadata/csdgm-standard>.
- Esri, *Create FGDC CSDGM Metadata*:
 - <https://pro.arcgis.com/en/pro-app/latest/help/metadata/create-fgdc-csdgm-metadata.htm>.

For questions regarding this information, please email: Resilience@FloridaDEP.gov