City of Cayce

Spatial Standards

The City of Cayce's Spatial Standards has been updated. While most of the requirements have not been modified, additional clarifications needed to be identified. Most of the clarifications reflect the delivery of the spatial data to the City of Cayce when as-built drawings contain utility data. Following these standards ensure that the City of Cayce will be able to incorporate new data into our GIS system without spending too much time converting data to match our current system.

Coordinate System:

All data of record submitted to the City of Cayce containing geographic information (hereby referred to as *Geographic Data*), including GIS data, CAD drawing files, record drawings, as-builts, and any other related digital products, shall conform to the *South Carolina Coordinate System*. This coordinate system is defined by SC Code of Laws Title 27 Chapter 2 and includes the following:

- **Projection**: NAD 1983 South Carolina State Plane FIPS 3900 (EPSG 2273)[1]
- **Horizontal Datum**: NAD83 (North American Datum of 1983)
- **Vertical Datum**: NAVD88 (North American Vertical Datum of 1988)
- **Datum Conversion**: NADCON
- **Unit of Measure**: International Foot (**Note:** the US Foot Unit of Measure is no longer accepted)

[1] All federal installations must maintain data in the Universal Transverse Mercator (UTM) projection, Zone 17 North based on NAD27.

Data Formats:

All Geographic Data shall be provided to the City of Cayce in the following formats:

- **Vector Data Formats**: Esri-compliant georelational model (i.e, Geodatabases, ArcGIS Online Hosted Feature Layers, Shapefiles, and Spatial Database Engine layers), as well as SQL Server feature data or AutoCAD .dwg or .dxf files.
- **Raster Data Formats**: ERDAS, .bmp, .lan, .jpg, .gif, .tiff, GeoTIF, or Geodatabase Raster.
- **Tabular Data Formats**: INFO, ASCHII text delimited, ODBC compliant RDBMS tables, or Microsoft SQL Server and/or PostgreSQL databases.
- **Metadata Format**: Federal Geographic Data Committee (FGDC) compliant metadata for all data submitted.

CAD-to-GIS Conversion:

CAD layers may be imported from AutoCAD products as GIS feature classes into an Esri-compliant geodatabase management system using one of two methods:

- Using a CAD-to-GIS application or extension such as *ArcGIS for AutoCAD*.
- Importing information as isolated drawing layers within an instance of ArcGIS software.
- (**Note:** It is preferred that any point features, that have coordinates described in as-built drawings, are provided in an Esri-compliant format (geodatabase, ArcGIS online Hosted Feature Layer or shapefile).

Required Tabular Data:

Tabular data must be provided for each identified discrete point on the drawing to includes the feature's Northing, Easting, Elevation at Surface, and Unique Identifier. Definitions of these fields is as follows:

- Northing: The northing coordinates of the points to 4 decimal places.
- Easting: The northing coordinates of the points to 4 decimal places.
- Elevation at Surface: Elevation in feet above MSL (Mean Sea Level).
- Unique Identifier: An identifier (of any type) tying the geometry and tabular data.

Field Mapping and Schema:

Unless otherwise specified, field mapping and schema requirements may be defined by the City of Cayce on a project-by-project basis. Such requirements may include:

- The naming and content of CAD layers to facilitate their import into GIS.

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- Necessary fields, attributes, and domains for GIS data.
- Field maps indicating what CAD data will be imported into associated GIS feature classes and in what manner.
- Other schema definitions as appropriate.

The City of Cayce reserves the right to produce and implement a minimum schema requirement for all Geographic Data. Said requirement will be made public as an amendment to these standards.

These spatial standards are effective as of 06/13/2023. All questions may be directed to the following:

Todd Shafer
City of Cayce GIS Manager
Phone: (803) 739-5363
Email: tshafer@caycesc.gov