

# MAG GIS Standards for Consultant Delivery of Data

## *Delivery Format*

All GIS data deliverables to MAG shall be in an Esri compatible format. Data, analyses, maps, code, and any other products developed as a part of a project with MAG shall become the property of MAG and must be delivered at the conclusion of the project.

Data submitted to MAG shall be submitted within one of the following formats, in order of preference

- File geodatabase
- ArcGIS Pro Layer Package
- ArcGIS Pro Map Package
- ArcGIS Pro Project Package

All File Geodatabases or Packages must be compatible with ArcGIS Pro 3.3.

Data formats that are not acceptable unless otherwise indicated by the needs of the project and will be rejected as a form of delivery include shapefiles, KML/KMZ, CSV, Excel files, Personal geodatabases, or JSON/GeoJSON.

*MAG GIS Environment (we will provide specific version information separately)*

- Desktop GIS: ArcGIS Pro
- Server: ArcGIS Enterprise
- RDBMS: SQL Server

## *Coordinate Systems*

- NAD 1983 HARN StatePlane Arizona Central FIPS 0202 (Intl Feet) [WKID: 2868]
- For map services: WGS 1984 Web Mercator (auxiliary sphere) [WKID: 3857]

## *Metadata*

Formal metadata shall be provided with all delivered GIS data. The following must be included with every submitted dataset. Metadata must conform to the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata (CSDGM).

## *Data Standards*

All final data delivered to MAG must conform to the guidance outlined in *MAG GIS Standards and Best Practices*. A summary of these standards is presented below; the full documentation is available upon request.

Feature dataset, feature class, and attribute field names must meet the following requirements:

- All feature classes must have a defined primary key other than OBJECTID
- Where applicable, geodatabase feature classes should contain editor tracking fields (i.e. created\_user, created\_date, last\_edited\_user, last\_edited\_date) if ongoing maintenance of the data are planned
- Naming conventions

- Names should be descriptive of the data contained
- Common abbreviations are acceptable (e.g. ADOT, FIPS). Other abbreviations should be avoided unless defined in the metadata
- Special characters, other than underscores and dashes, should be avoided. SQL reserved words should be avoided.
- Names containing dates should follow the YYYYMMDD convention
- Feature class, table, and field aliases are encouraged
- For enterprise geodatabase feature classes, names will be all caps in screaming snake case (e.g. NEW\_DATA).
  - Field names will also follow this convention.
- For file geodatabase feature classes, names may be in snake case with first letters capitalized (e.g. New\_Data) or camel case (e.g. NewData), so long as a consistent format is followed.
  - Field names will also follow these conventions.

### *Reference Data*

Existing enterprise geodatabase layers for which the spatial accuracy is known and/or orthoimagery should be used as references for the development of new data layers when practicable. These include the following, in order of preference:

- Street centerlines acquired from Arizona Department of Transportation a.k.a. ATIS or All Roads Network (Horizontal accuracy is not stated by varies throughout the dataset)
- Digital orthoimagery from Maricopa County Office of Enterprise Technology (Horizontal accuracy for 2023 is +/- 2.5ft.)
- Parcels acquired from Maricopa County Assessor's Office or Pinal County Assessor's Office (Horizontal accuracy is not stated by varies throughout the dataset)
- Public Land Ownership from Bureau of Land Management (Horizontal accuracy +/- 100 ft.)
- Public Land Survey System lines from Bureau of Land Management (Horizontal accuracy varies across Arizona but is generally better in urban areas)

Attributes that store feature coordinates should be in decimal degrees, preferably NAD 1983 or NAD 1983 HARN. Include which is used in the metadata.

### *Cartography*

A template will be provided, along with required true type fonts for rendering highway shields.

### *Exceptions*

Deviations from the above standards must be mutually agreed upon between MAG and the Consultant.