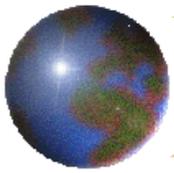


GIS Minimum Metadata Standards

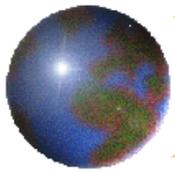
Minimum Metadata Standards for GIS Data



GIS Minimum Metadata Standards

Goals & Objectives

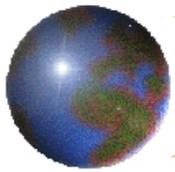
- Why?
 - GIS Licensure and Data Classification
 - AZ BTR
 - Growing use of GIS data
 - Emergence of Open Data initiatives
- What?
 - Guidelines for providing metadata with all geospatial data
- How?
 - Review by professionals
 - Review by customers
 - AGIC/APLS/BTR
 - **Education**



GIS Minimum Metadata Standards

Why?

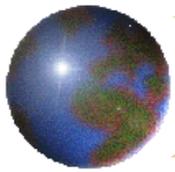
- GIS Licensure and Data Classification
 - A group of GISers and Surveyors started an effort in 2002 to bring the professions closer together and to cooperatively work on common goals.
- AZ BTR
 - The Legislation & Rules Committee has taken up this item and is working towards redefining the definition of the Practice of Surveying for this state.
- Growing use of GIS data
 - Especially by non-GIS government staff, and the general public.
- Emergence of Open Data movements
 - Could make geospatial data much more accessible and available.



GIS Minimum Metadata Standards

What?

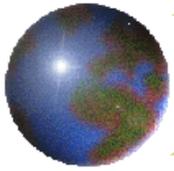
- Develop minimum metadata standards for geospatial data that provide quality indicators to the end-user.
- Metadata standards would include the specification of required metadata fields for any geospatial dataset that is to be used externally to an organization.
- Include standards for geospatial attribute data.
- The adoption of standards for assessing and reporting quality indicators of geospatial data would provide a tool that could effectively inform and guide data end-users in the proper use of and limitations in using a given dataset.



GIS Minimum Metadata Standards

What?

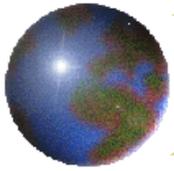
- Key data quality indicators include:
 - Intended use of the data
 - Data creation methodologies
 - Data processing
 - Personnel expertise
 - Known errors and qualifications
 - Limitations of use
- Including the intended use of the data in metadata would go a long ways towards providing a good understanding to the end-user of appropriates and inappropriate uses of the data.
- Including limitations of use would augment the intended use by stating additional use limitations.



GIS Minimum Metadata Standards

What?

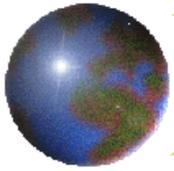
- Metadata fields:
 - Descriptive name/description/abstract: General overview of what the data set encompasses.
 - Purpose of the data and intended uses: Why was the data created?
 - Feature type: Geometry type, e.g. point, line, polygon, raster, etc.
 - File name: Name of the digital file(s), as delivered.
 - Distribution restrictions: Sensitive data, critical infrastructure, internal-only.
 - Known errors and qualifications: Indicator of usability and constraints.
 - Projection/coordinate system: Georeferencing info.
 - Dates – creation, update, maintenance frequency: Temporal information.



GIS Minimum Metadata Standards

What?

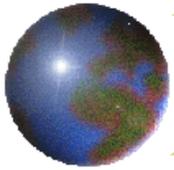
- Metadata fields: (cont.)
 - Maintenance Organization: The group who maintains the data.
 - Contacts – general, maintenance: References for acquiring additional information.
 - Data creation methodologies, including equipment: Quality indicator.
 - Completeness: Geometry AND attribute status in terms of what is missing.
 - Attribute information, including a list of field descriptions, statements of completeness and accuracy, etc. For GIS use, this is just as important as geometry.
 - Field metadata: Explanation of each field's content, and domain of values if applicable, especially for encoded values.
 - Limitations of use: Augments the intended use with specific use restrictions.



GIS Minimum Metadata Standards

What?

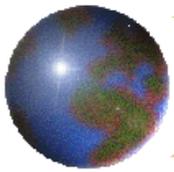
- Example – GIS parcel layer:
 - Description: GIS parcel boundaries.
 - Purpose of the data: This GIS layer was created for general reference purposes, along with providing a graphical interface into parcel data that is maintained by the Assessor's Office.
 - Feature type: polygon
 - File name: paregion
 - Distribution restrictions: Not to be distributed for commercial use.
 - Known errors and qualifications: This layer contains duplicate taxcodes for parcels, e.g. undeveloped subdivisions in which all lots are assigned the same taxcode, until the lots are developed. Further, a relatively small number of other parcels have more than one polygon per parcel resulting in duplicate taxcodes. Subdivision common areas are typical examples. Parcels with duplicate taxcodes in paregion duplicate parcel valuation data. Summing valuations for these duplicated taxcode parcels from paregion will result in inflated totals. Users should normalize their analysis results based on the frequency of duplicate taxcodes.



GIS Minimum Metadata Standards

What?

- Example – GIS parcel layer:
 - Projection/coordinate system: NAD83-92 (HARN), State Plane, Arizona Central Zone (FIPS Zone 0202), International Feet.
 - Dates:
 - Creation: 01/07/1997
 - Maintenance: Updated daily
 - Maintenance Organization: Pima County ITD GIS
 - Contact(s): Steve Whitney, steve.whitney@pima.gov, (520) 724-6729.
 - Data creation methodologies: The majority of the parcel boundaries were tablet digitized from Subdivision Plats and Assessor Record Maps. In 2007 the parcel boundaries in the metropolitan area were rubber sheeted to digital orthophotography. Over time as new subdivision data has been acquired in digital format from development firms, this higher accuracy data has been incorporated into this layer and existing boundaries have been adjusted to this new data.



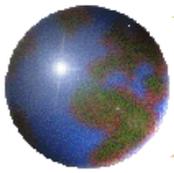
GIS Minimum Metadata Standards

What?

- **Example – GIS parcel layer:**
 - **Completeness:** The GIS parcel layer is always incomplete in that there is lag time between the time that parcel data is recorded and the time that it takes to make its way through the recordation and assessment processes then into the GIS layer. The parcel geometry and Assessor's data is synchronized once a year at the close of the tax roll, producing a one-to-one match between parcel geometry and Assessor attributes.
 - **Attribute information:** The attribute data for the layer primarily is supplied from the Assessor's parcel data, along with some GIS overlays for other fields. The attribute data is complete, although it may not be totally up-to-date due to lag times the parceling process.
 - **Field metadata:**

<u>Field Name</u>	<u>Description</u>	<u>Domain</u>	<u>Enumerated Values</u>
ACRES	Area in acres	Calculated	N/A
PARCEL	Parcel tax code	Range	N/A
PARCEL_USE	ADOR parcel use code	Enumerated	ADOR Property Use Code Manual

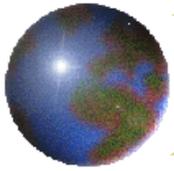
- **Limitations of use:** This layer should not be used for determining legal boundary locations, surveying, engineering, or uses other than general reference.



GIS Minimum Metadata Standards

How?

- Professional review of the standards:
 - Geospatial expertise
 - What we can and can't live with
 - Will it be feasible? (e.g. will professionals actually follow the practice?)
- Customer review of the standards:
 - Do they understand the concept?
 - Do they get the message that we're trying to convey? (e.g. can they form a solid judgment of what and what not to use the data for?)
- AGIC/APLS/BTR:
 - Promote the adoption of the final standards to these organizations.
- Education!!!



GIS Minimum Metadata Standards

Questions?

Contact Info

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(520) 724-6670