

Geospatial Metadata

February 2005

WHAT ARE METADATA?

Nutrition Facts	
Serving Size ½ cup (114g)	
Servings Per Container 4	
Amount Per Serving	
Calories 90	Calories from Fat 30
% Daily Value*	
Total Fat 3g	5%
Saturated Fat 0g	0%
Cholesterol 0mg	0%
Sodium 300mg	13%
Total Carbohydrate 13g	4%
Dietary Fiber 3g	12%
Sugars 3g	
Protein 3g	
Vitamin A 80%	Vitamin C 60%
Calcium 4%	Iron 4%
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs:	
Calories: 2,000 2,500	
Total Fat	Less than 65g 80g
Sat Fat	Less than 20g 25g
Cholesterol	Less than 300mg 300mg
Sodium	Less than 2,400mg 2,400mg
Total Carbohydrate	300g 375g
Dietary Fiber	25g 30g
Calories per gram:	
Fat 9 • Carbohydrate 4 • Protein 4	

Recognize this? It's the nutrition label required by the U.S. Food and Drug Administration on all food packaged for retail sale. As a nation, we have been putting some form of labels on our food since 1913. Today, this label with its mandatory and voluntary components, tells the consumer everything they need to know to make an informed decision about the food's ingredients and nutritional content.

Sound familiar? Just as food is our body's fuel, spatial data is the GIS's fuel. How do you determine the "really good stuff"

from the "junk food"? How do you know if the spatial data is "good" for your system? How do you know how to read the ingredient list and what the terms mean?

In 1994, and with a subsequent revision in 1998, the Federal Geographic Data Committee, FGDC, adopted

the Content Standard for Digital Geospatial Metadata to label or document geospatial datasets. Like the nutrition label for a company whose product is food, the metadata standard documents the characteristics of data to allow consumers to determine the data's fitness for their use.

WHY METADATA?

The major uses of metadata are:

- organize and maintain an organization's internal investment in spatial data,
- provide information about an organization's data holdings to data catalogues, clearinghouses, and brokerages, and
- provide information to process and interpret data received through a transfer from an external source.

THE STANDARD

What do we need to know about our datasets? The standard provides a common set of terminology and definitions for the documentation of geospatial data, including data elements for the following topics:

Identification Information – the basic information about the data set. Examples include title, geographic area covered, currentness, and rules for acquiring or using the data.

Data Quality Information – assessment of the quality of the data set. Examples include positional and attribute accuracy, completeness, consistency, sources of information, and methods used to produce the data.

Spatial Data Organization Information – the mechanism used to represent spatial information in the data set. Examples include the method used to represent spatial positions directly (such as raster or vector) and indirectly (such as street addresses or county codes) and the number of spatial objects in the data set.

Spatial Reference Information – description of the reference frame for, and means of encoding, coordinates in the data set. Examples include the name of and parameters for map projections or grid coordinate systems, horizontal and vertical datums, and the coordinate system resolution.

Entity and Attribute Information – information about the content of the data set, including the entity types and their attributes and the domains from which attribute values may be assigned. Examples include the names and definitions of features, attributes, and attribute values.

Distribution Information – information about obtaining the data set. Examples include contact information for the distributor, available formats, information about

how to obtain data sets online or on physical media (such as cartridge tape or CD-ROM), and fees for the data.

Multi-use Sections - the standard has multi-use sections, or templates, that allow one to “re-use” metadata elements in various sections of the standard. For example: contact information for organizations or individuals that developed the data, in Identification Information, and distribute the data set, in Distribution Information, provide for the entry of the same type of information in two distinct sections of the standard.

Note: - The metadata standard does not specify how the dataset is to be organized in a computer system, or in data transfer, or the means by which the data is transmitted or communicated to the user. The metadata standard provides information structure and content to describe the characteristics of the dataset.

Extensibility - the standard provides a methodology and process for data producers or the user community to profile and extend the metadata standard beyond the base standard to meet individual organizations and discipline metadata requirements.

FGDC/ISO METADATA STANDARD DEVELOPMENT AND HARMONIZATION

Since 1996, the FGDC has been actively involved with the International Organization for Standardization Technical Committee 211 in the development of an International Metadata Standard. In 2003, the American National Standards Institute formally adopted ISO 19115 Metadata Standard. ISO Technical

Specification 19139, XML implementation of ISO 19115, is expected in 2005. The FGDC will then follow with the U.S. National Profile based on the Final Technical Specification 19139. FGDC plans to develop a workbook and graphic depiction of the U.S. National Profile to assist ISO metadata implementation.

ADDITIONAL INFORMATION

The standard and other metadata information are online at <http://www.fgdc.gov/metadata/metadata.html> or contact Sharon Shin, FGDC Metadata Coordinator at 303-202-4230 or sharon_shin@fgdc.gov