

GIS Data: Files, Folders and Projects

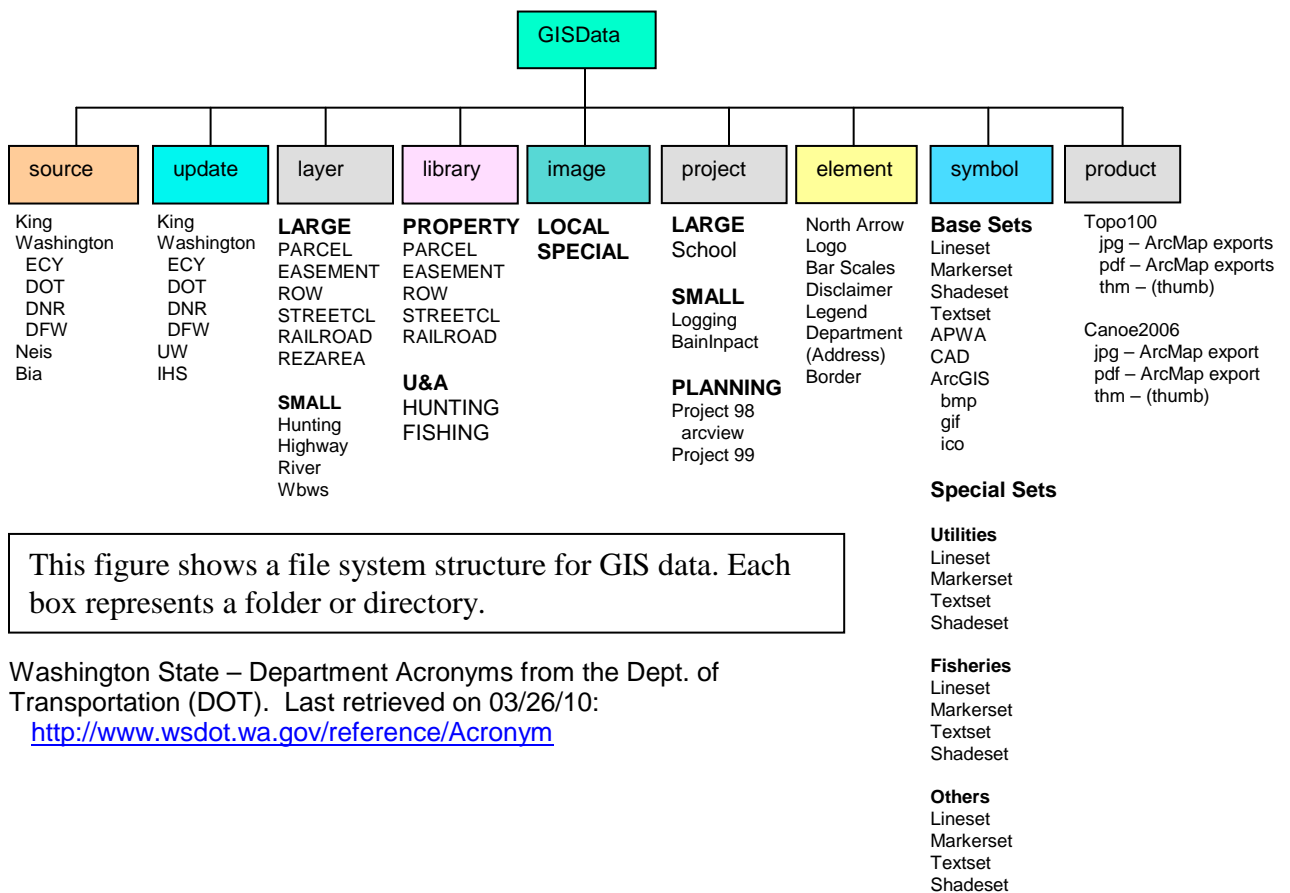
Software Data

Software data will be defined as the data that is necessary for software applications to execute. This data may not be geographically referenced. This type of data will logically be stored within software folders to be compiled and archived along with the software that requires it. This is not data that is needed for a user's ArcMap project. It is the data that ESRI made (icons, graphics) used by the ArcMap application.

GIS Data

This is geographically related data that may be gathered and processed from various sources including local jurisdictions, contractors, surveyors, or others. An intricate file structure to organize, store, and access this data is outlined below. Pathnames to the data should be implemented using relative pathing. The file structure has been designed so that it can be moved or archived in whole or in part.

GISData File System Configuration



Washington State – Department Acronyms from the Dept. of Transportation (DOT). Last retrieved on 03/26/10:
<http://www.wsdot.wa.gov/reference/Acronym>



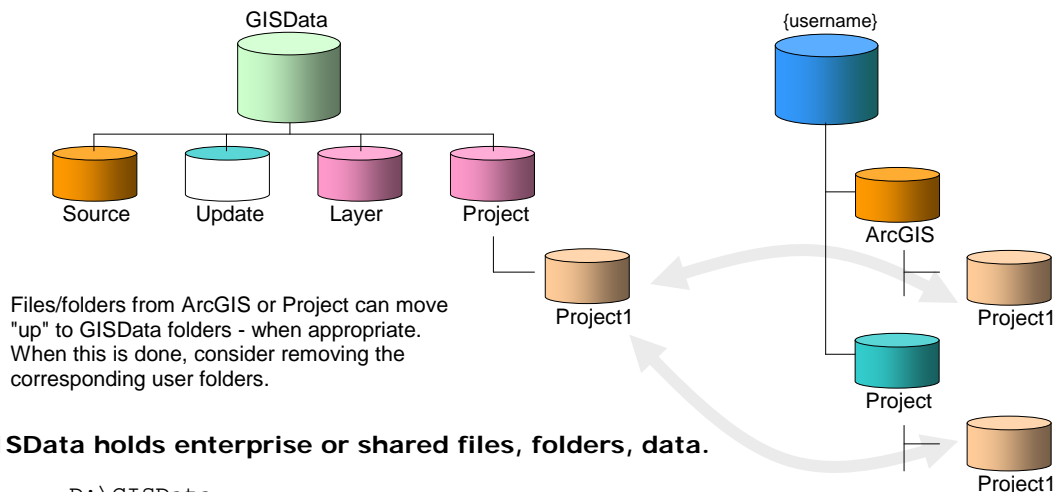
GISData File System Descriptions

<p>This table describes directories or folders used to store GIS data. Parts of the directory structure defined within this table may be adapted specifically for a particular enterprise¹. This structure is designed to allow data to be stored with respect to the processing state. For example, data that is received from an outside source is stored within "source". If processing is done to a copy of this data for the enterprise, the data is stored within "update". Other processing can occur and new folders can be added as needed. During incremental back-ups data can be selectively chosen by these folders or directories. Archived data can also be selectively retrieved. This table can be changed at any time to accommodate other or better data storage arrangements.</p>	
Directory Name	Content Description
source	This area is for data received from an outside source after downloading. This is a copy of data that exists at the source. It represents a "snapshot" of the delivery. This data should not be modified or processed in any way, other than downloading.
update	Often, after data is downloaded from a source it is processed in some way for the specific purposes or requirements. Inconsistent data may be initialized or changed to meet the database design standards imposed by the Enterprise representing a modification of the source.
layer	Layer data has a spatial component and is georeferenced. The georeferenced data defined here combines updated data and the topological; arcs, points, nodes, polygons etc. that create an ARC/INFO coverage or an ArcGIS dataset. (ArcGIS contains something called a "layer" which is the equivalent of a pointer to a dataset – perhaps not the best choice of names.)
library	Currently, this represents the area where small or large scale ARC/INFO ArcStorm or Librarian libraries are stored. This represents a further compilation of the layer data. This may change depending on SDE or other data organization schemas. Libraries remain useful for file based conversion projects (tiled by quarter section, section, or quadrangle).
image	This represents an area of storage that is associated with the original images from cameras, video, etc. prior to their inclusion into projects.
project	This represents an area where project folders or directories can be stored. For example a user from a planning department may be working on a specific area. Documents, pictures, and other data that relate to this specific project are located in this area through various stages of completion. Other users of the system can access the project through this location.
element	Graphic elements used in map products and screen displays are stored within this area. This includes but is not limited to data like; disclaimers, address blocks, map borders, bar scales, north arrows, vicinity maps, etc. This allows users of the system to access standardized elements in the creation of displays and map products.
symbol	This area is used to store various symbol sets used for specific applications of the GIS. Symbols can be compiled by theme or scale created at the tribe or imported from other sources.
product	This area is used to store saved map products of dated information. These products are archived but are also resident until updated maps are published. For example, if we have maps that show properties (like assessor's maps) this area is used to store the current map. Maps can be printed or viewed utilizing data from this directory – as opposed to generating "on the fly". As new maps are published, they replace the older version by overwriting here. This allows access to product data to users that may not have the appropriate software licenses to allow generating products on the fly.
other	This is not a category in the current file system definition. This line has been added to the table to emphasize that any new folders or directories that are required can be added.

¹ The directory structure described was invented by Tim Leach and can be shared for use by others.

Following describes folder structures used for organizational reasons or puposes:

1. **GISData** is a main folder that stores sharable, global, data. This directory structure is described within the attached document.
2. Secondly, two user folder structures are described: **ArcGIS** and **Project**. **ArcGIS** holds ArcGIS projects that a user is working on. Using the described structure with relative pathing makes for very portable projects. **Project** holds information not related to ArcGIS.



GISData holds enterprise or shared files, folders, data.

```
D:\GISData
Source
Update
Product
Project
Image
Layer
```

More detail:

```
D:\GISData
  Source - GIS data as acquired from source
    Washington
      ECY
      DNR
      DOT
      DFW
  Project - project folders copied up from user workarea or shared
    at this level the enterprise project folder contains a
    copy of all related project files. ArcGIS related files
    exist in an ArcGIS folder:
    Project1
      ArcGIS (from {username}\ArcGIS\Project1)
      Correspondence (from {username}\Project\Project1)
      Plan (from {username}\Project\Project1)
      Budget (from {username}\Project\Project1)
      ...etc...
  Product
    Topo100 - map series
      jpg
      pdf
      thm
  Update - GIS data processed (projected, converted to gdb, etc.) many
    of the same folders as Source
```



```

Washington
  ECY
  DNR
  DOT
  DFW
Element
  NorthArrow
  Logo

```

General example of a user's partition with ArcGIS project folders, and non-ArcGIS project folders.

```

F:\{Username}
  ArcGIS
    Antelope
      gdb
      mxd
    Canoe
    Council
  Project
    Antelope
    Council

```

More detailed example of user's partition: ArcGIS and Project folders. As long as relative pathing is used in ArcMap and you "pull down" referenced data from GISData, you can "pick-up" the project by the folder name and move it anywhere.

```

F:\{Username}
ArcGIS
  {project1}
    bmp - bitmaps
    cov - coverages
    doc - word documents (I use word documents to hold text that is on the
      map then copy it into ArcMap text boxes).
    dem - digital elevation model
    e00 - ArcInfo export files
    gdb - geodatabases
      {project1}.gdb - main geodatabase (name same as project folder
      conversion.gdb - other gdb's are possible
    gif - graphics file
    grd - Grids
    gz - compressed files (usually from Linux/Unix)
    ico - icons
    jpg - graphics file or map export
    lnk - link vectors from georeferencing (I always turn off the auto
      function) and save the link's from and to coordinate files. This
      way you can edit them and reproduce the "warp".
    mdb - personal geodatabase
    mxd - {project1}.mxd - main project map doc. name same as project folder
      Editor.mxd - "skinny" ArcMap mxd to edit feature layers
    pdf - usually pdf's from map export
    ppt - MS Power Point presentation/slides (place to put screen shots from
      ArcMap)
    prj - projection files
    py - Python scripts referenced
    rtf - MS WordPad rich text files
    shp - shape files
    sxd - scenes (ArcScene)
    tbx - toolboxes
    tif - graphics file
    tin - Triangular Irregular Network
    txt - text files (coordinate listings, etc.)
    xls - spreadsheet files

  {project2}
  .....

```



```
Project
  {project1}
    Mail
      In
      Out
    Contact
    Document
    Presentation
    ....
```

KISS PRINCIPLES

Partitions

- My preference is to use partitions which helps with archive processing. It was the way things were before everyone simply dumped to "C:". There are many other advantages for programmers or scripters as well.
- A handy tool is GParted. I used it on my University of Redlands laptop - several times. It allows for the creation of partitions while leaving your existing operating system and other software intact.
- Of course, you can use the structures above under C: as well.

File and Folder naming and creation rules:

- don't use spaces - yeah we can use long file names with spaces - but it usually isn't necessary and remains problematic with: systems, software, etc.
- don't start names with numbers or special characters - use letters
- try CamelCase, it seems to be okay for now (eliminates need for spaces)
- don't make anything plural ("s" at the end). Then you don't have to try and remember how it was named.
- don't bury things way down deep (common sense - no long file path's)
- names should not share a prefix: CanoeMap, CanoeProject, CanoeOars, etc. instead make a folder "Canoe", with Map, Project, Oars. Similar rule for database fields.