

## **Background - KYGEONET**

The Commonwealth's statewide geospatial data holdings are one of the most impressive in the nation. Over two decades of effort by countless stakeholders are the basis of these holdings. For many years these datasets were distributed in agencies across the Commonwealth and their internal business needs dictated how they preserved their GIS data. In 2002, the Kentucky Geography Network (KYGEONET) came into being and its usage skyrocketed. This was important because stakeholders had to create metadata in order to publish to the KYGEONET. Having metadata for each and every layer added a whole new dimension and level of value to the agencies' holdings.

## **Enterprise GIS – KyRaster/KyVector**

Up until 2005, all of the KYGEONET resources were still distributed across many agencies with master datasets held within that entity. In early 2005 all of the downloadable data resources on the KYGEONET were assimilated in mirror instances of ESRI's SDE database. One is called KyVector and the other KyRaster. They are "fed" by stakeholders as they publish their information to the KYGEONET. Thus, the resources are still distributed, but they are also consolidated at one point within the enterprise. This allows for unparalleled access across the Commonwealth's WAN where hundreds of users a day connect and consume these geospatial data resources. KyVector and KyRaster also drive most all of Kentucky's Internet Map Services. This true enterprise implementation allows agencies that are just getting into GIS to enter this exciting field without having to buy a server to store needed base data. Thus, it is driving down the cost of implementing GIS at the ground level. An important thing to note about KyVector and KyRaster is that if a dataset doesn't have metadata it doesn't go into these repositories. This ensures that all data is documented accordingly.

## **National Map Contributor**

Kentucky was one of the early contributors to the USGS National Map. The Commonwealth has published more "statewide" layers than another other state in the nation. This linkage was very straightforward in that Kentucky already had an active metadata service (KYGEONET) and an Internet Map Service (The Commonwealth Map) which are both required by USGS. Having Kentucky data accessible via the National Map allows other (adjoining) States to view our data when interstate events occur.

## **Geospatial One Stop Contributor**

The Commonwealth is recognized as having one of the most active nodes on the Geospatial One Stop (GOS). Metadata records are harvested every weekend by the GOS staff. This regularly schedule synchronization of metadata services insures that Kentucky's holdings are always current on the GOS site.

## **Archival Framework for Kentucky Geospatial Data**

An important benefit of having the geospatial data centralized is that it can be backed up and preserved at one point as a reflection of the holdings as they existed at that time. Agencies can certainly maintain their own in-house backup and business continuity procedures but there are efficiencies to be gained by archiving the data at one point. First of all, as stated above, it allows for the capture of a snapshot of the entire holdings at one point in time, quarterly in the case of Kentucky. This snapshot will also be inclusive of embedded metadata records and timestamps for all features. Placing these snapshots in an appropriate directory structure will allow for future review of archived geospatial data in a logical and intuitive manner. The snapshots will take the form of ESRI's file-based geodatabase (fGDB).

**Timeframe** – The Commonwealth's geospatial data assets are changing continuously. Roads, boundaries, infrastructure, inventories, and so forth are changed on a daily basis. This information is written into KyVector and KyRaster on a schedule as dictated by the business process responsible for the data's creation. In most instances data is normally

updated on a weekly or monthly basis. Taking all of this into consideration, Kentucky has decided to proceed with a quarterly schedule of archiving its geospatial datasets. This initial archive will occur at the end of June, 2008.

**Snapshot Contents** – The initial snapshot obtained will be of KyVector. This will be accompanied by a PDF report that contains a complete listing of the contents of KyVector (See Attached Listing).

**Snapshot File Format** – Kentucky has chosen to archive its data in the form of an ESRI's file-based geodatabase (fGDB). This file-based relational database format will allow the entire archive set to exist within it's own container with groupings of data based upon the FGDC Metadata model (same as groupings on KYGEONET and GOS). This file format is appropriate for the storage of both raster and vector data and allows for compression. Additionally, the fGDB allows for vector topology, the inclusions of route data, and other advanced relationships that cannot be supported with the old Shapefile format.

**Archival Categories** – There were three categories of data identified by Library and Archive staff: Open, Conditional, and Closed. The vast majority of the data in KyVector will fall into the "Open" category, however there are a limited number that will fall into "Conditional". No secure, or "Closed" data is stored in KyVector. The proposed directory structure will accommodate the archiving of data into these categories.

**Directory Structure** – Three root directories will be created for archiving geospatial data based on the categories outlined above: Open, Conditional, and Closed. Management of the archived data under this root directory structure will allow for a more straightforward administration of permissions. Sub-directories named based on the year will reside just below the root directories. Sub-directories named based on a quarterly timeframe will exist within those yearly directories (March, June, September, December). The quarterly directories will contain three subfolders. Two of the three will be utilized for storing the snapshots, one for vector data, and the other for raster. The third directory will be dedicated for storage of the quarterly report.

