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Myth #4: Getting Historic Surveying Information into a GIS Takes Too Long

Now that you have a GIS System that is managing all of your current activities you need to create a way to get your Historic Surveying Information into your GIS. In order to tackle this task we will need to divide your Historic Data into two different categories: “Before GIS” and “After GIS,” as the way that each category will be handled is different, but both methods will involve a process known as hyper linking.

What is Hyper Linking?

Hyper linking is a powerful concept in GIS, it allows for the attribute of a GIS entity to be a file location on a different place on your computer. This allows you to attach any file type to a polygon, line or point in a GIS. For example, if you have a GIS system of Fire Hydrants, files that could be hyperlinked to the actual point represented one hydrant could include all of the following: a picture of that hydrant, a scanned service report, a copy of the invoice from when it was purchased, a folder on a computer where all inspections are stored, or any other document that you could imagine.

The process to perform a hyperlink is quite straight forward. All that is needed is the File Location of the file that you wish to hyperlink, and a blank field in the attribute table of the entity that you wish to hyperlink to. For example, in order to create a hyperlink to a file located on your computer at “C:/Documents/2012/test.doc”, you simply

EXAMPLE PROJECT FOLDER	
12-0001	
Final Document	PDF scans of every deliverable
Drawings	CAD drawings
Elevations	Word documents of elevation certificates
Field Notes	PDF scans of field notes
Metes and Bounds	Word documents of metes and bounds descriptions
Correspondance	Any client instrustions sent by fax or e-mail
Pictures	.jpg images of project
Points	All survey point data for project
Other	Miscellaneous project docs

have to have “C:/Documents/2012/test.doc” typed into a field in the entity’s attribute table; it is as simple as that. Of course, typing each one of the file locations into every GIS entity could be an enormous task, but with intelligent file organization this can be automated.

Getting your “After GIS” Data into your GIS System

This type of Historic GIS data has an entry in your Job Database with a linkage already created (See Myth #3 for the discussion on creating linkages) and the method to get this data on

to your map will be straight forward. But before we can do this we need to decide what data we want to put into the map, as a surveying project creates many different data sources, Field Notes, Client Correspondence, Finished Surveys, Elevation Certificates, Title Reports, Drawings, and Metes and Bounds descriptions. The way to handle this is to decide to sort this data while the project is being completed, or while it is being added to the GIS.

Both ways have advantages, obviously if the data is being sorted during the archiving process you will have to have someone actually look at the document and put it into the proper category, while doing as the project is being done means that the person dealing with the document is the same person sorting the document, so it costs you time while the project is being done, or after it is completed. I find, it is quite easy to deal with it while doing the project, when a Title Commitment comes in my e-mail, I immediately put it in its spot on the server, which takes away any chance I have in losing it.

quite simple. You must simply have a hyperlink to the Project folder as an entry into the attribute data of each job entry. And since the only unique piece of the hyperlink is the Job Number it can be easily done as a calculated field in your JOB DATABASE we created back in Myth #2 (LINK = "Y:/Jobs/"[JOB_NUMBER]). Now every time you complete a project, all of the information associated with that project is readily accessible from within your GIS. This method has also given you the blueprint to follow for document archiving from now on.

Getting your "Before GIS" Data into your GIS System

Accomplishing this task is quite an undertaking, as it involves someone scanning, sorting, appropriately naming, and saving each document into the correct location on a computer. This task took our company just over 4 years to complete, and took quite a bit of effort to work through.

You must ask yourself if this is something you really want to dedicate

of a GIS system is to make you more efficient, and therefore more profitable. In the rare case you need the old file, you may have to go and dig it out.

But just in case you still want to bring your "Before GIS" data into your GIS system, it is simple to do. The best way I have found to deal with historic documents is to sort them by type and deal with each type as a table in a spreadsheet, such as Excel. This will also require the use of the linkage type you are using for your Job Database, as selected in Myth #3. The spreadsheet will have a row representing each document with a file location in the first column, and the linkage fields in different columns on the same row. Then performing a join table routine into your GIS System will bring all of these links into the GIS System and make them usable.

Conclusion

I hope that I have dispelled many of the myths associated with implementing GIS into a Land Surveying Business, but remember that this is just an intro into the technology. There are many other tasks that added into the GIS system. Coastal Surveying of Texas, Inc. has added Credit Card Billing, Client e-mail notifications, frequent client lists to quickly fill in Job Order Information, and many other subroutines to make my life easier. I keep a legal pad next to my keyboard and if I catch myself doing the same mundane task over and over again I add it to my legal pad and then figure out a way to make the GIS do this for me.

Another big leap you can realize with you GIS system is taking it online, having access to all of your records from anywhere can make it easy to handle problems from any web connected device, taking orders while at the job site, creating invoices on the way back to the office, and getting that phone number for a client you left on your desk can save you time and money.

When we took our GIS system to a web managed system we looked at another company to help with the custom programming and web hosting, as it gets a bit more complex when you take things to this level. You can look at their website at <http://mapandmanage.com> to see what is being done there. 

"I keep a legal pad next to my desk..."

The way I have dealt with this issue is every job in my GIS system has a corresponding folder that is assigned by job number (Y:/Jobs/12-0001 for example) which is created by the GIS when the job is first entered. Within this folder are subfolders for each type of project document, which gives me a place to put all of my project data as I am working the project, as well as, an easy to follow organization method to make all projects work the same way. When a Field Crew comes in with Field Notes, they are immediately scanned and put into a FIELD NOTES folder within the Project folder, CAD drawings go into a DRAWINGS folder, and you see where I am going.

This method makes the hyper linking process for "After GIS" projects

the energy and resources to do this task. There are advantages of having a scanned and sorted image of every piece of paper in your file cabinet, obviously the biggest advantage is protection from a disaster, but how important is a house survey completed in 1947 of a house than has been gone for 40 years to maintain?

What I have found is that the further in time I move from when I implemented my GIS system and have immediate access to my "After GIS" files, the less frequently I am looking at my "Before GIS" data. Obviously there have been instances where having the old survey has saved me quite a bit of effort and time, but those are the exceptions, and I still have the paper copies to look at. That may sound like blasphemy to some Land Surveyors, but the purpose