Boundary Maps For Data Organization in Farm Works 2010

This blog begins the discussion about Farm Works data organization using the TRAC (record keeping), SITE (mapping) and PRO (analysis) modules. This combo is the central mapping program that I will just call Farm Works in this blog, being the most common set operated by my clients. I think the best designed software programs have 4 primary attributes in common:

1. They offer a logically organized framework, like a file drawer with all the right folder labels ready for you to place your information.
2. They offer a comprehensive set of tools to fine tune your data.Think of that dream workbench that has all the right wrenches, every drill bit and every nail and screw all lined up and labelled, ready for you to pluck up and use to build whatever it is you need to build.
3. They are flexible and do not limit what you can bring into it or create with it. Your operation isn't like your neighbours or your competitors and you need to be able to work with your data in your way.
4. They are efficient to operate. A reasonable number of mouse clicks are required for every operation and some automated services are offered for repetitive tasks.

Easy Logic

In-office software designed for precision ag users has developed a fairly standard hierarchy of organization that is adaptable to either farm or industry. Open Farm Works for the first time and you will be compelled to add a client (called grower in some other programs), then add a farm name (and this can be just a repeat of the grower's name) and then add field names to the farm. In spite of it being the third entity added, it is the field which is the lynch pin of the entire organization. When we import or create a boundary to this field name, we start building the farm.

Each subsequent addition of a field grows the farm organization.
Each record and map we import is associated with the field. In Farm Works we can create this list of the fields before we have any maps to bring to the field name. The other lists that are ready for use to populate with our own data are: Resources such as crops, supplies, machinery and people to be associated with each job or data to be recorded. Farm Works provides the framework, but the program is empty without data.

Varied Tools

Once we are ready to bring mapped data into this framework by any one of the methods described below, we will simply be matching the incoming data to our chosen framework. If a data file that is incoming does not have an exact spelling match so that the computer can recognize it as a match (and rarely does this happen), Farm Works gives us a three click matching window to assign incoming to the list. So how do we organize the maps that correspond to this list?

1. The most common method in Ontario is to import a file, mapped using GPS. There is any number of service provider s who create field maps as part of their soil sampling or other custom services. The universal language for digital maps has become the "shapefile" which is a three file set in FW (other programs use a 4 file shapefile set) containing the mapped data. The user receives this file set, perhaps via email or downloaded from a mapping program such as Farm Works Mobile, stores it in a "maps incoming" directory, for ease of finding it when needed. The import process is to highlight the destination Field Name, right

click to reveal the Import Boundaries menu item. The user navigates to the "Maps Incoming" directory, selects the boundary file confirms the import and selects SAVE from the import window.

2. Another convenient method is to use background maps to navigate to a field location, then digitize or draw the field boundary using these maps to trace the perimeter. Farm Works provides two very easy to access background map sources- the one click roads and streets map, and the "get aerial imagery" function to import satelite imagery from Google(TM). Once these sources are in view, again the user will highlight the field name right click to select EDIT boundaries. The extensive drawing tools menu appears for the user to draw the perimeter definition of the field and SAVE the results. While this method is an efficient method for creating boundaries without the expense of in-field data collection including manpower, equipment and time, the downside is that the accuracy level of a drawn boundary is less than maps created with GPS mapping methods.

3. The advent of guidance and monitoring equipment has a side benefit of creating map-based data that are imported into Farm Works using the FILE/Import Job Data menu command. This extensive import is brand dependent, with some slight operational differences depending on the source file. In this import interface the user selects Raven "rbin" file or AgLeader "ilf" for example. These files may have a coverage map from application or tillage operations, or be as-applied rate information or yield mapping data. In this import the data has meaning as a recorded job and this map can serve as a detailed background for digitizing the boundary as in method 2. In this digitizing scenario the drawn boundary will be a much more accurate measurement.

These three boundary creation methods used in any combination allow us to create the map visualisation for our operation. The boundary map or what I call "THE Boundary" is a key to all of the subsequent functions. Once the boundary map has been imported or drawn to a field name, one click on the fields list (Management Tree of all Grower/Farm/Field listings) automatically navigates the user to that field and displays the field in the map window. Instant gratification!

This boundary map creation is the basis to build the yearly crop changes, here called Crop Enterprises. So even though the Home Farm may be 100 Acres from fenceline to fenceline, you may have one crop planted this year and plan two crops side by side or a double cropped soybeans after peas in the following year with different acre breakdowns over time. No matter what the crop rotation over time within this field, we can still maintain our records based on the field name. The flexibility that this framework presents is a perfect answer to the common confusion that results from bringing data and maps into the office from multiple sources and the conundrum of tracking multiple within-field boundaries year after year.
In Farm Works THE Field Boundary is the anchor and the Crop Enterprise is the flexible flourish that makes this a best of breed for many levels of user.

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