The Power of LandXML

The ability to import and export to LandXML has been around for quite awhile, but I still get a lot of curious looks when I mention it in my training classes. So, what is it? And why should you be using it?

Why Should We Be Using It?

We've all become accustomed to saving archive copies of our drawings for various purposes but saving the corresponding project data is often overlooked. Retrieving the drawing file may allow you to recover proposed contours and profile grid, but the underlying "surface" is lost unless the project was also archived.

Importing and exporting using XML files is the most convenient way to convert, transfer and archive data created in Carlson Software, Land Desktop, Civil 3D, Eagle Point, TerraModel and, I'm sure, other programs.

But, What Is LandXML?

LandXML refers to a file format (.xml) containing data created in a civil/survey program. My recommendation is that ALL civil and survey data should be archived – progress, submittal and final archive – using LandXML.

The way I like to explain it is that we use XML files in the same way we used to rely on DXF files. They're mostly outdated now, but DXF files are a generic file format that, for example, we used to convert MicroStation DGN files to AutoCAD DWG files. At that time, AutoCAD couldn't read DGN files and Microstation couldn't read DWG files; but both could read DXF files. So, we had to convert our drawing files to the generic DXF format that could then be read into the other program.

Similarly, Carlson Software, Land Desktop, Civil 3D and the other programs create their own unique files for civil/survey project data such as points, point groups, surfaces, centerlines, profiles, etc. When we have to pass that data onto someone using a different civil/survey program – it's a nightmare!

That's where LandXML files prove their value.

Exporting your civil/survey data to an XML file breaks it all down into, basically, a text file. Specifically, it's an HTML file that can be viewed through a web browser such as Internet Explorer or Firefox. For instance, when a surface model (TIN) is exported to XML, the X, Y, Z values of each point on the TIN is assigned a number, and then each "face" (triangle) of the TIN is defined by specifying the 3 corners. See the examples below:

```
- <Surfaces>
  - <Surface name="EG">
    - <Definition surfType="TIN" area2DSurf="20450222.7849" area3DSu
      - <Pnts>
          <P id="1">380922.103615 2506607.732735 41.2000</P>
          <P id="2">380958.246247 2506310.293473 41.8000</P>
          <P id="3">380859.633631 2506378.192599 41.5000</P>
          <P id="4">380838.498931 2506251.881151 41.9000</P>
          <P id="5">380882.693158 2505926.626756 39.1000</P>
          <P id="6">380718.271495 2505653.604033 40.5000</P>


        <P id="718">378567.822385 2507508.683806 43.4271</P>
        <P id="719">378259.641925 2508097.744016 24.9615</P>
        <P id="720">378275.784642 2507466.855049 41.5605</P>
        <P id="721">378330.412304 2507452.367010 42.2912</P>
        <P id="722">378736.948749 2507695.651850 41.7908</P>
      </Pnts>
    - <Faces>
        <F>21 20 19</F>
        <F>713 104 106</F>
        <F>132 107 106</F>
        <F>12 11 10</F>
```

Note that one type of data that is currently not supported in XML files is typical cross-sections or template files.

Another benefit of using LandXML to transfer or archive project

data is that any combination or all of your project data can be saved in a single XML file. This is valuable because exporting ALL of the data for a project can create a massive XML file.

Even if you archive your project data in its native format, you should consider additional archiving in XML format. No one knows what kind data files we'll be using 10 or 20 years down the road so saving your data in such a generic, text-based format such as XML files allows for easier retrieval down the road.

Originally posted on **Carlson Connection** by Jennifer Dibona