Sneak Preview – Mass Haul Analysis in Carlson 2014

July 11, 2013

Todd Carlson helped me out with a demonstration of Carlson Takeoff a couple months ago and the company we were presenting to was looking for some particular features in a mass haul analysis routine. They had looked at several other programs as well as Takeoff and had yet to find a solution to their particular issue.

Fast-forward about a month and Todd followed up to let us know that the new functionality had been incorporated into the software and would be available in **Carlson Civil** and **Carlson Construction/Takeoff 2014**. This is a perfect illustration of how responsive Carlson is to their customers (or even prospects, in this case).

I asked Todd to write up a little preview of the new Mass Haul Analysis routine we'll see in Carlson 2014:

Mass Haul Analysis in a nutshell:

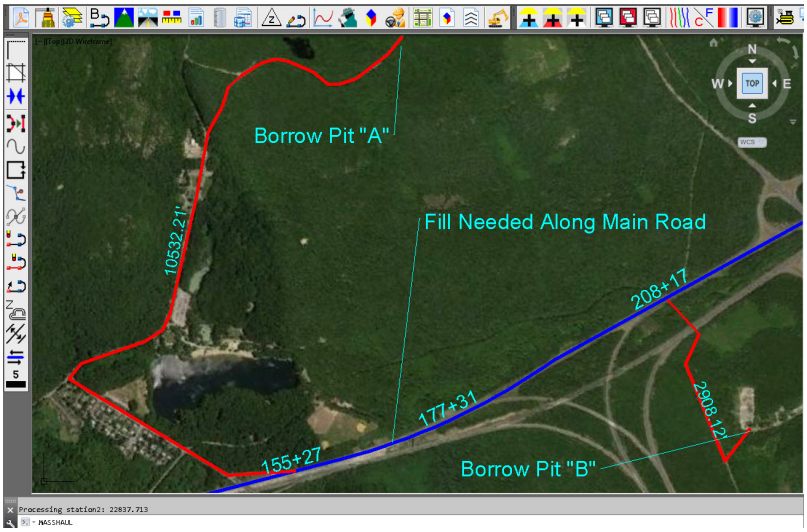
That CAD Girl

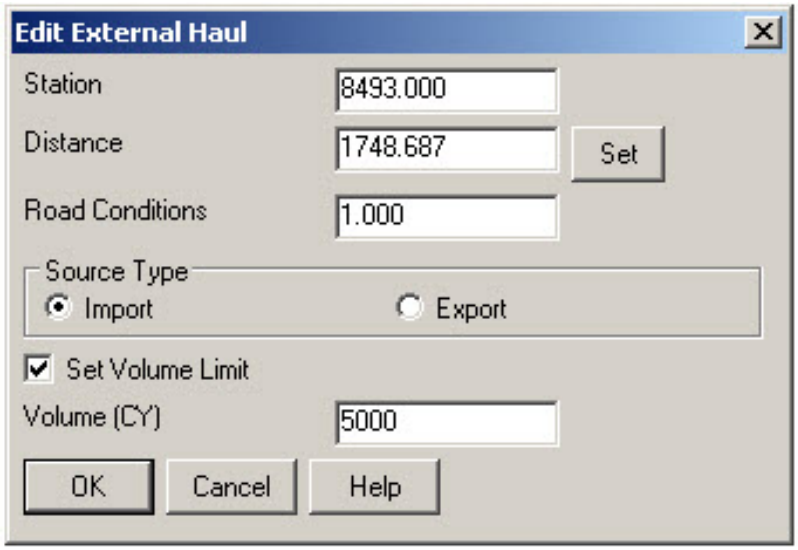
Mass Haul Analysis determines the volume and haul distance for groups of net cut and net fill station ranges along a road. The program calculates the optimized cut to fill movements so that the total volume-distance moved is minimized.

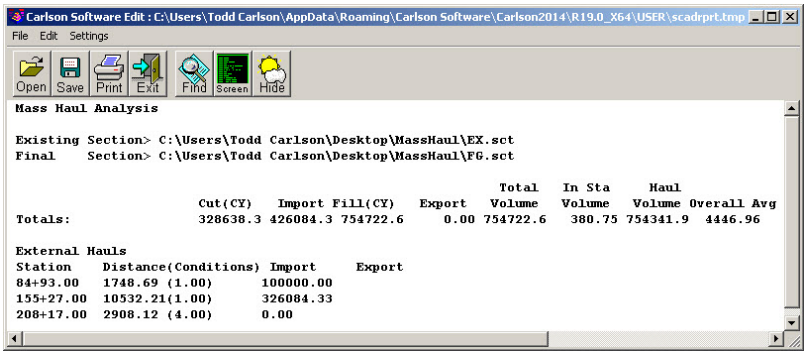
New Feature:
When dealing with multiple external hauls, users can now input the distance (and a "road conditions" factor) a borrow pit or dump pile is from its entry station. The program will then use this information when minimizing earth movement along the road.

For example, as shown in the first graphic below, an image of the area was inserted into the drawing from ***Google Earth*** *or the* ***Esri Mapping Service****. CAD polylines were sketched along the travel paths from multiple pit locations to the project site.*

Then, purely based off stationing, borrow pit (A) may be closer to a fill area than borrow pit (B). However, if the distance from borrow pit (B) to its entry station is closer than borrow pit (A)'s, the program may determine to use (B) as the borrow pit over (A) to optimize the earth movement.


Borrow Pit "A"
Fill Needed Along Main Road
10532.21'
208+17
177+31
155+27
Borrow Pit "B"
N
W
TOP
E
S


Edit External Haul
Station
8493.000
Distance
1748.687
Set
Road Conditions
1.000
Source Type
Import
Export
Set Volume Limit
Volume (CY)
5000
OK
Cancel
Help



Learn more about [Carlson Civil] and [Carlson Takeoff]

Carlson Software End of Year Specials

July 11, 2013
Last week Carlson announced their end-of-year specials for 2012. This year's offerings include steep discounts on Carlson Civil Suite, Survey with embedded AutoCAD, Takeoff

and Survey.

All discounts will end at noon on 12/31/2012.

As with all of my pricing, I'm prohibited from advertising my actual lowest prices **so call or email for Coupon Codes** for further discounts.

$2,795 for Carlson Civil Suite (includes one year of maintenance) – Retail price is $3,954.50

$2,295 for Carlson Survey 2013 with embedded AutoCAD – Retail price is $2,995

$5,000 for Carlson Takeoff 2013 with IntelliCAD – Retail price is $9,000

$6,500 for Carlson Takeoff T6 (2013) with embedded AutoCAD – Retail price is $9,000

$875 for Carlson Survey 2013 with IntelliCAD and one-year Maintenance for anyone who already owns SurvCE, Fast Survey or Triton. A valid serial number is required prior to purchase. Retail price is $1,754.50.

Carlson Software Self-Study Manuals

July 11, 2013

In order to reduce the amount of time I've been spending in online training, I'd been considering putting together Carlson Software training manuals. But, in order to truly offset the majority of the training I do, the first book had to be more than a standard software training manual that covers a broad range of topics.

So, I've just completed and started shipping the first 2 books that I'm calling **Self-Study Manuals**. They will be a great substitute for training for beginning users of Carlson Software and also as "fill-in-the-blanks" training for more

experienced users. The lessons are very detailed, down to every pick and click. You do not even need to know AutoCAD or IntelliCAD to complete them. I think you will find them very beneficial if you're new to Carlson or even to help bring your field crew up to speed as office help.

At this time, there are 3 lessons available: **Carlson Configuration and CAD Settings** (about 0.5 hours of instruction), **Getting Started with Points for Survey or Civil** (about 4.5 hours of instruction) and **Field to Finish** (about 6.5 hours of instruction). I've combined the **Carlson Configuration and CAD Settings** **and** **Getting Started with Points for Survey or Civil** into the first book and the **Field to Finish** is a separate book. Additional books are on the way… some will be detailed, self-study manuals and others won't. I will be focusing on the ones that most closely follow the demand for training.

The books can be purchased separately or as a **bundle from my online store**. Introductory pricing is available through the end of 2012.

View a sample of the Getting Started with Point Self-Study Manual here

[View a sample of the Field to Finish Self-Study Manual here]

Carlson Configuration and Settings

Approximately 0.5 hours of instruction

When first launching Carlson Software, you can make changes to the configuration and options that will apply to the current and future drawing sessions. Some of the settings and options are specific to Carlson Software and some are specific to AutoCAD® or IntelliCAD®.

Part 1 of this lesson contains Carlson Software-specific settings and is applicable to anyone using Carlson with either an AutoCAD or IntelliCAD platform.

Part 2 contains AutoCAD-specific settings.

Part 3 contains IntelliCAD-specific settings.

Appendix A explains how to use the Project Folder method of

Project/Data File Setup as an alternative to the Drawing Folder method.

Appendix B explains the use of Carlson Quick Keys and how they interact with AutoCAD and IntelliCAD command Aliases.

Carlson Survey Getting Started with Points

Approximately 4.5 hours of instruction

This lesson starts by loading a configuration file with recommended settings and options for the program. We will also open a few toolbars that may be needed for the exercises.

We will then start a new project and new drawing from a text/ascii file and will draw the points with the Draw-Locate Points command. Various point editing and reporting commands and features will be used. Some of these features include: Point Groups, Tag Non-Surface Points, Translate Points and Rotate Points. In wrapping up Part 1, we will export points to a new text/ascii file and also export the point data to a LandXML (.xml) file. Please note that Carlson's Field to

Finish is covered in a separate lesson.

Appendix A covers, as a separate exercise, the new Esri-powered command Search Published Control that allows you to search published control data that is freely available on the National Geodetic Survey (NGS) website and then store the retrieved information to the active Coordinate File.

Appendix B provides a separate, in-depth, explanation of the Carlson Point Block entity and how its Symbols and Point Attributes (Point Number, Elevation and Description) are controlled with respect to Layers.

Carlson Field to Finish

Approximately 6.5 hours of instruction

This lesson starts by loading a configuration file that contains recommended settings and options for the program. We will also open a few toolbars that may be needed for the exercises.

That CAD Girl

Part 1 provides an overview of the Field to Finish feature of Carlson® Survey. We will start a new project and new drawing from a text/ascii file. The text file is very similar to the one used in Lesson 2a – Getting Started with Points except that it has been slightly modified to include special linework coding. We will use Field to Finish so that the points, symbols and linework are automatically generated and drawn on their proper Layers. Field to Finish will also create Point Groups and tag some points as Non-Surface so they can be easily excluded when we build a surface model.

In Part 2 we will create a new Field to Finish Code Table that includes a variety of Codes that can be used to create Symbols, 3d and 2d Linework.

In Part 3 we will simulate collecting more than 70 survey points in the field and then processing them with the Field to Finish Code Table created in Part 2. With this Code Table, we will collect points for features such as roadways, buildings, trees and property corners. We will also demonstrate the use of Special Codes for labeling descriptive information such as ½” Iron Pipe
and 12” Oak Tree.

In Part 4 we will use the Separate Attribute Layers functionality within Field to Finish so that Symbols and Descriptions for points we process can be used to label features on printed plans.

In Part 5 we will go through the steps required take some of your existing point files to make a new Field to Finish Code Table for your company.

Carlson 2013 Has Been Released

July 11, 2013
Carlson released the 2013 version of their desktop products

today. This includes: Civil Suite, Civil, Survey, Hydrology, GIS, Takeoff, Construction, Point Cloud, Geology, Surface/Underground Mining and Natural Regrade.

The 2013 embedded-AutoCAD versions of Takeoff and Survey have not yet been released.

Unlike previous versions of Carlson that support running on top of IntelliCAD or AutoCAD products 2000-2012, **Carlson 2013 can only be run on IntelliCAD or AutoCAD products 2004-2013**. This includes AutoCAD, Map, Land Desktop and Civil 3d. Also, anyone using the FREE IntelliCAD that comes with Carlson is eligible for a FREE GIS Starter Kit from Esri which includes ArcMap.

You can download Carlson 2013 here.

If you are using 2012 and are current on your annual maintenance contract, you can click here to look up your new 2013 serial number online. You will need to enter your contact information and your 2012 serial number in order to generate the 2013 serial number. You can find your serial number by opening Carlson Software and going to Help > About Carlson Software > Change Registration.

That CAD Girl

If you have trouble finding your serial number or would like to know the cost to upgrade to 2013, please email me with your request.

Click here for the full list of improvements to Carlson 2013

Click here for improvements to the General commands in 2013

Click here for the additional data file & conversion support in Carlson 2013

Click here for improvements to Survey commands in 2013

Click here for improvements to Civil commands in 2013

Click here for improvements to Hydrology commands in 2013

Click here for improvements to GIS commands in 2013

Click here for improvements to Takeoff commands in 2013

Click here for improvements to Point Cloud commands in 2013

Click here for improvements to Geology commands in 2013

Click here for improvements to Surface/Underground Mining

commands in 2013

Click here for improvements to Natural Regrade commands in 2013

IntelliCAD Webinar – Do Over

July 11, 2013
Last week I presented a webinar sponsored by Carlson Software on the topic "Updates and Overview of IntelliCAD 7". Unfortunately we had some technical difficulties and didn't get a complete recording to post to the Movies collection on Carlson's website.

For those who are interested, we will be re-doing the webinar on Thursday, March 29th. By that time we expect to have additional updates and improvements to announce.

Keep an eye on this site to register for the next IntelliCAD webinar

You can register for these future webinars by clicking the link below:

- Tips and Tricks for Setting Points
- Debunking the “Carlson Isn’t Dynamic” Myth
- Carlson Annotation and Labeling

New Carlson Build – 120219

July 11, 2013
Carlson released a new build of their desktop software earlier this week. This includes updates to the IntelliCAD/for AutoCAD versions of Survey, Civil, Hydrology, GIS, Basic Mining, Geology, Underground Mining, Surface Mining, Natural Regrade, Field, Takeoff, Construction and Point Clouds.

To confirm your current build number, go to Help > About Carlson. You’ll see the build number on the top line of the text box.

You can download the latest full version or updates to your current installation here.

If you would like to try out any of the Carlson Software products for 30-days, email me here.

For those anxious to try out the very latest and greatest updates in the testing versions of IntelliCAD 7.1, you can also send me an email to gain access to a new blog, “The Little CAD Engine That Could”, administered by Leonid Entov of Carlson Software.

Participation in the testing and access to the blog is by invitation only, so email me and I’ll pass along your request.

Carlson 2012 Updates

July 11, 2013
You can download the most recent updates to Carlson’s 2012

desktop software HERE

End of Year Workshops – Statesville, Asheville, Wilmington and Raleigh NC

July 11, 2013
We are finally able to announce our end of year workshops for 2011. With the weather problems we encountered last year we decided to hold the events in the western end of North Carolina in November and toward the coast in December.

The cost to attend each event is $99 and lunch is included. See below for early bird registration details for each event. NC Licensed Surveyors and Engineers will receive 8 PDH credits and all attendees will receive a certificate confirming their attendance. We will have door prizes, software giveaways and **special software or hardware pricing**

that is available the day of the show only.

We will be in Statesville on Tuesday, November 15th and Asheville on Thursday November 17th. Early bird registration is $89 through September 30th.

We will be in Wilmington on Tuesday, December 13th and Raleigh on Thursday December 15th. Early bird registration is $89 through October 31st.

You will be able to choose the sessions you wish to attend. This year's sessions include:

- **GIS from A to Z** and **Responding to GIS-related RFPs**
  presented by Janet Jackson (GIS Janet) of Intersect
- **Overview of Carlson Takeoff & Preparing Machine Control Data**
  presented by Todd Carlson of Carlson Software
- **Intro to SurvNet & Least Squares**
  presented by Donnie Stallings, the original developer of the product
- **CAD Standards Roundtable & Discussion**

presented by Jennifer DiBona, That CAD Girl

- **CAD Tips & Tricks** and hints for sharing data with others
  presented by Jennifer DiBona, That CAD Girl
- **Overview of Carlson Software 2012** (Survey, Civil, Hydro, GIS, Point Clouds)
  presented by Scott Griffin of Carlson Software
- **Field to Finish with Carlson Survey & SurvCE and the Surveyor+ GPS System**
  presented by Butch Herter of Carlson Software and Jeremy Taylor
- **Preview of future Carlson hardware**
  presented by Butch Herter of Carlson Software and Jeremy Taylor
- **Road Design and Site Design with Carlson Civil & Hydrology**
  presented by Scott Griffin of Carlson Software

Note that all classes are not scheduled at all events and locations. See each workshop announcement for specifics. Seats are limited so register online, call 919.417.8351 or email us to register.

What is LandXML?

July 11, 2013

This article originally appeared in the April 2011 issue of Professional Surveyor magazine.

The ability to import and export LandXML data has been around for quite a while, 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?

What Is LandXML?

LandXML refers to a file format (.xml) containing data that has been generated from a civil engineering or land surveying software program.

If you're hearing about it for the first time and want to learn more about the uses and acceptance of the LandXML initiative, visit www.landxml.org. According to their page LandXML.org in a Nutshell, "… LandXML.org is committed to

providing a non-proprietary data standard (LandXML), driven by an industry consortium of partners."

Simply put, the easiest way to convert, transfer, and archive data between Civil 3D, Carlson Software, Land Desktop, Eagle Point, TerraModel, and many other programs is to use the Import from LandXML and Export to LandXML functions available in these programs. Additionally, many machine control systems allow you to import LandXML files. I am most familiar with the Carlson and Autodesk families of civil/survey programs, so most examples in this article refer to them.

This may not be current by the time you read this article, but the list of members and participating organizations is at www.landxml.org/org.htm.

Why You Should Use It To Transfer Data

The two key words in the mission statement above are "non-proprietary." Just as we have multiple proprietary drawing file formats such as .dwg (from Autodesk's AutoCAD-based programs) and .dgn (from Bentley's Microstation), the files that store survey and civil data such as points, surfaces, centerlines, and profiles are unique and proprietary to their

manufacturer.

For instance, Civil 3D is the survey/civil product for Autodesk. Points and surfaces created in that program are stored inside the .dwg file. If you have Civil 3D and need to share a surface with a consultant or other team member who owns the same version of Civil 3D, you can just send them the .dwg file and they will have full access to the point and surface data. However, if you have Civil 3D and your consultant uses an earlier version of Civil 3D, Land Desktop, or Carlson Software or needs the surface data for machine control, it will not be as simple as just sharing the .dwg file.

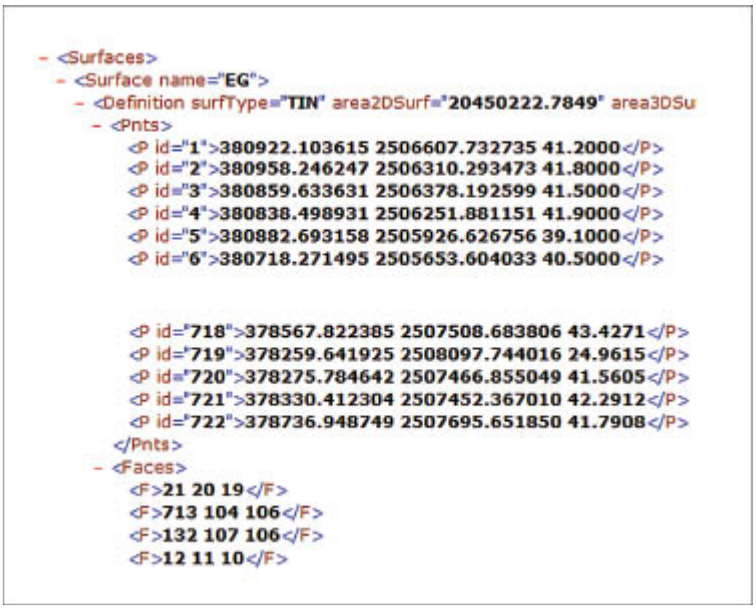
Similarly, surfaces created in Carlson Software are saved in a .tin file and points are stored in a .crd (coordinate) file. Anyone using Carlson Software or SurvCE data collectors can load these files in their native format. But, Civil 3D or other survey/civil programs can’t access them directly.

As you probably already know, when you have to pass this data onto someone using a different program, it’s a nightmare! This is where LandXML is a lifesaver.

That CAD Girl

I like to explain that you use Land-XML files in the same way you used to rely on .dxf files. It's mostly outdated now, but a .dxf file is a generic drawing file (DXF = Drawing Interchange File) that can be exported from and imported into various CAD programs. Back in the day, AutoCAD wasn't able to read or import Microstation's .dgn files and Microstation wasn't able to read or import AutoCAD .dwg files, but both could export and read .dxf files. To get a Microstation file into AutoCAD, we had to export a .dxf file from Microstation and import it into AutoCAD and vice versa.

When you export your civil/survey data to an .xml file, it can be opened and read like a text file. Specifically, an .xml file is an .html file that is best viewed through a web browser such as Internet Explorer or Firefox. For instance, when a surface model (TIN) is exported



to an .xml file, the X, Y, Z values of each point on the TIN are assigned a number, and then each “face” (triangle) of the TIN is defined by specifying the three corners (**Figure 1**).

Another benefit of using LandXML to transfer project data is that you can be selective in choosing what project data to include in your .xml file. For instance, in the course of a design project, you may create an existing ground surface, a proposed ground surface for phase one of your project, and a proposed ground surface for phase two. You may have a consultant who needs only your proposed ground surfaces. When you export the .xml file, you have the ability to select only those surfaces that you’d like to add to the file; it’s not necessary to export them all.

For Project Archiving

We’ve all become accustomed to saving archive copies of our drawing files for various purposes, but saving the corresponding project data such as points, point groups, surfaces, centerlines, and profiles is often overlooked. Retrieving the drawing file (.dwg or .dgn) may allow you to recover the linework that represents contours or a profile, but the underlying “surface” is lost unless the project data

was also archived.

When archiving your projects at completion or even at submittal time, it is not enough to simply save a copy of the drawing file(s) for the project; you must also save a copy of the project data. At a minimum, the archive should contain the project data in its native format. In the case of Civil 3D, saving your project data in its native format means saving a copy of all .dwg files that store points, surfaces, or other data relating to your project. Saving this project data in its native format is sometimes the easiest method, but it can also create a problem with file storage because the files can become enormous.

This won’t be a surprise, but even if you archive your project data in its native format, I recommend that you consider additional archiving in .xml format. This is the case whether you need to save a progress, submittal, or final archive of your data. No one knows what kind of 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 regardless of when you need it.

Note that, like archiving in native format, archiving to an

.xml file can also produce very large files. I still believe using the .xml format is advantageous because of the generic nature of the data and having the ability to pick and choose the data you need to archive.

I hope you've gotten some clarification on this fantastic tool we've all had for years but many of us have not taken advantage of. If you have questions, please don't hesitate to follow up.

This article originally appeared in the April 2011 issue of Professional Surveyor magazine.

What is Carlson up to?

July 11, 2013
This is a good article about Bruce Carlson and where Carlson Software is planning to go in the future…

Independence All the Way

That CAD Girl

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