

Tools, Tips, and Workflows

LP360 Has a Set of Four Tools Accessed Via ArcToolbox

LP360



Support

April 2013

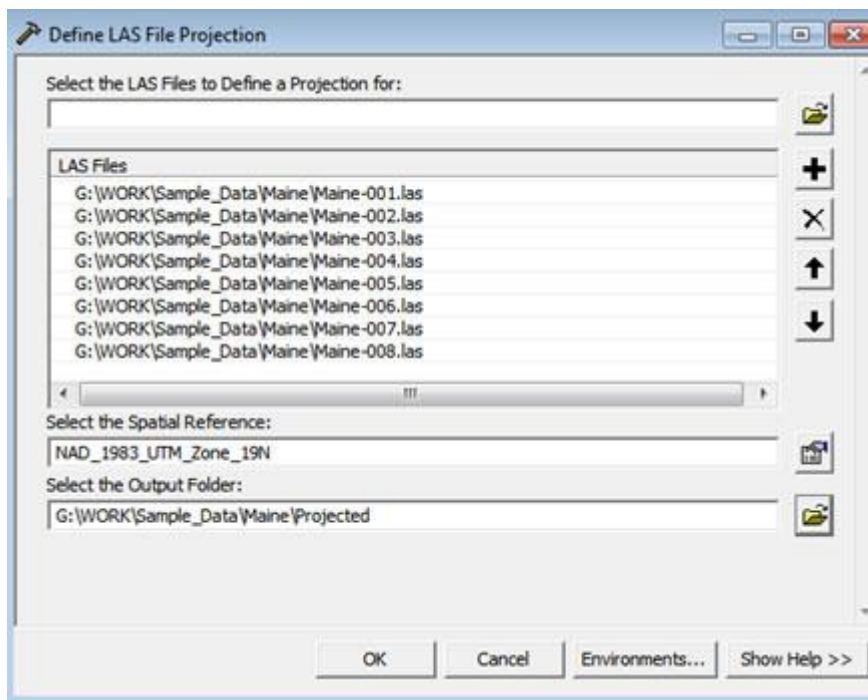
Revision 1.0



LP360 has a set of four tools that can be accessed via ArcToolbox. Detailed instructions for adding the LP360 toolbox can be found in the *LP360 Installation Guide* under “Adding LP360 Tools to ArcGIS Toolbox”. The *LP360 Installation Guide* can be found at www.qcoherent.com/support/updates.html under “Software Installation Instructions”. These tools are available with LP360 for ArcGIS and require an LP360 License to run. The four tools are: Define LAS File Projection, Re-project LAS Files, Scale LAS Files, and Shift LAS Files. Each tool creates a new set of LAS files and preserves the original files.

Define LAS File Projection is used to define or assign a projection for one or more LAS files. Having projection information assigned to LIDAR data is helpful in two ways. First, it is an easy way to determine where the data is located – you just examine the coordinate information stored in the header of the LAS file. This information can be viewed using the LP360 Point Cloud Statistics Extractor Task. Second, it allows LP360 to specify the coordinate system and units for the map display. Units are particularly important when performing QA/QC work or using the Advanced LP360 Classification routines.

There are three parameters for the tool: selected LAS Files, the specified coordinate system, and the output location.



LP360 Basic Edition
 LP360 Standard Edition
 LP360 sUAS Edition
 LP360 Advanced Edition

ArcGIS
 Windows
 GeoCue

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Figure 1: Define LAS Files Projection

Re-project LAS Files is used to re-project the points in LAS files into a desired coordinate system. This tool is particularly helpful when creating breaklines or producing output products that need to be created in a different coordinate system than that of the LAS files. There are four parameters for the tool: selected LAS files, the incoming coordinate system, the outgoing coordinate system, and the output location.

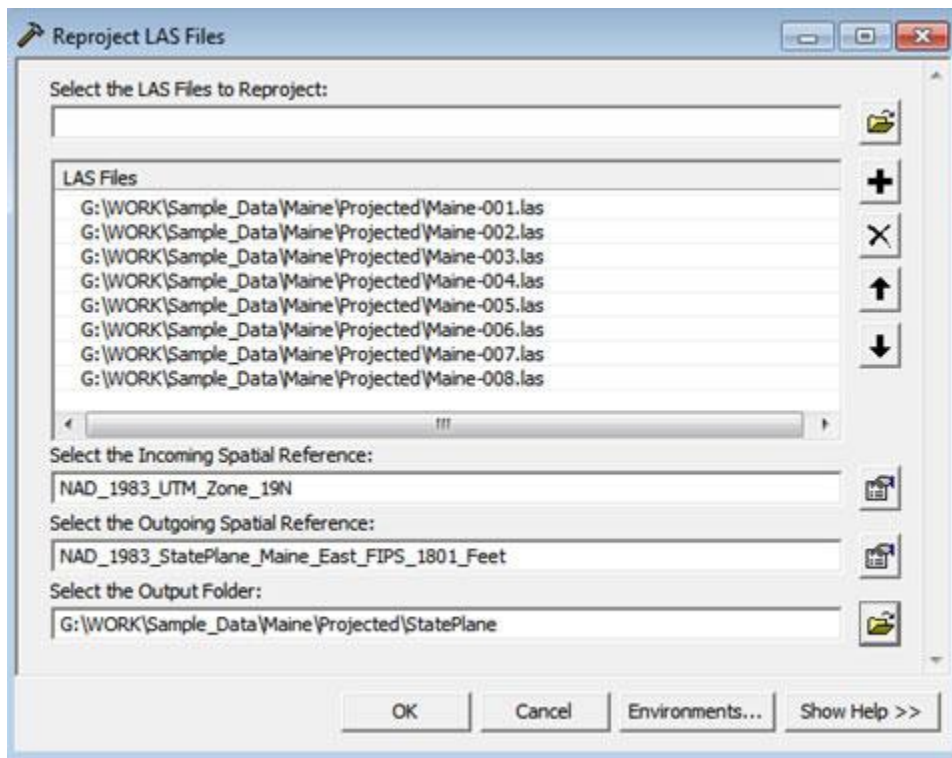


Figure 2: Re-project LAS Files

Scale LAS Files offers the ability to scale the x, y, and/or z components of the points within LAS files. Scaling the points within LAS files will multiply each point component by the specified factor. Common conversion factors might be Feet to Meters or Meters to Feet. There are five parameters for the tool: selected LAS Files, the X Factor value, the Y Factor Value, the Z Factor Value, and the output location.

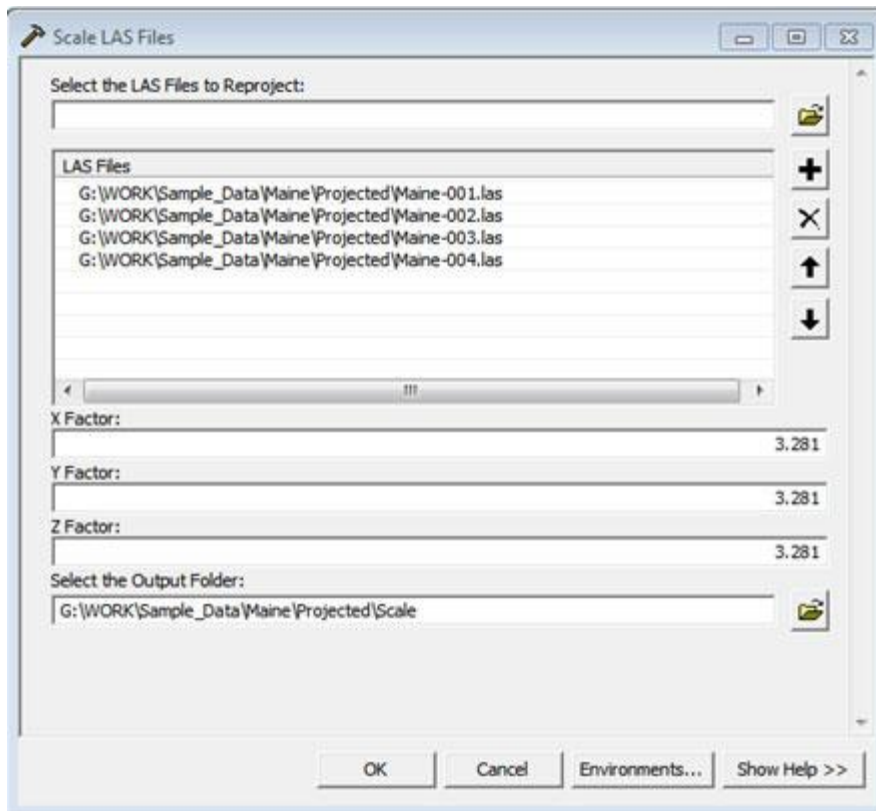


Figure 3: Scale LAS Files

Shift LAS Files offers the ability to shift the x, y, and/or z components of the points within LAS files. Shifting the points within a LAS file will add (positive values) or subtract (negative values) to or from each point component by the specified factor. There are five parameters for the tool: selected LAS files, the X Factor value, the Y Factor Value, the Z Factor Value, and the output location.

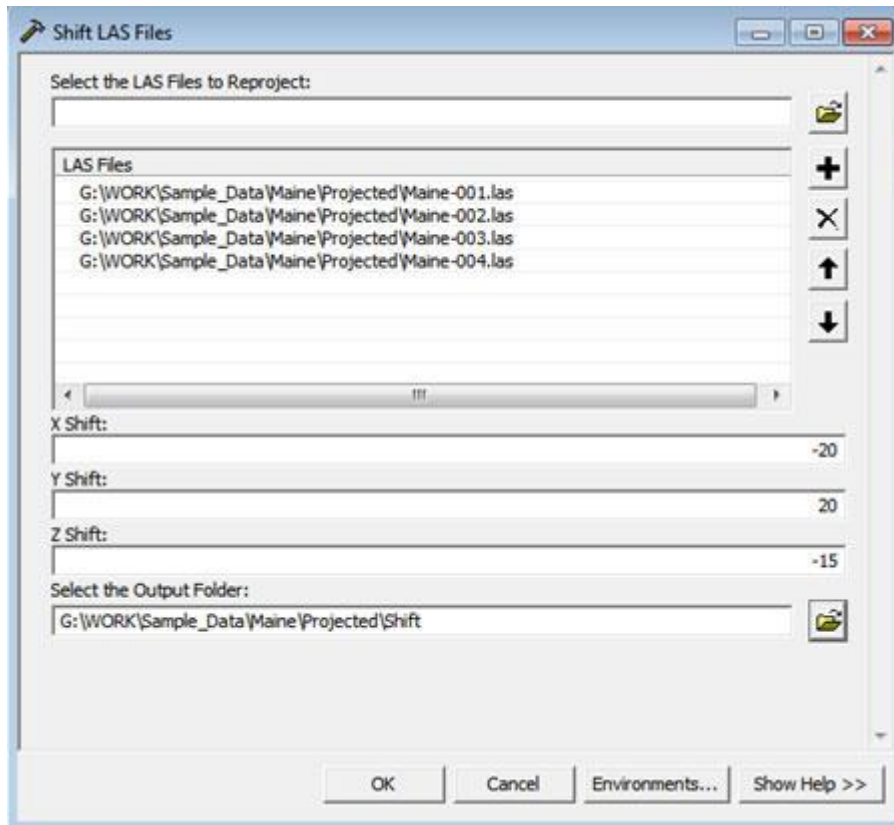



Figure 4: Shift LAS Files

LP360 tools in ArcGIS ModelBuilder

Allowing the tools to reside within ArcToolbox, as opposed to a toolbar, allows the ability to manage the LIDAR workflow. The LP360 toolbox tools may be used in ModelBuilder, which is accessible from ArcMap or ArcCatalog. "ModelBuilder is an application you use to create, edit and manage models. Models are workflows that string together sequences of geoprocessing tools, feeding the output of one tool into another tool as input."

Using LP360 tools in ModelBuilder:

1. Click the ModelBuilder Window tool  from the ArcMap Standard toolbar to access ModelBuilder.
2. To start the model process, first add one of the LP360 tools, either via the Add Data button or by selecting the Tool from the Toolbox and dragging it into the model.

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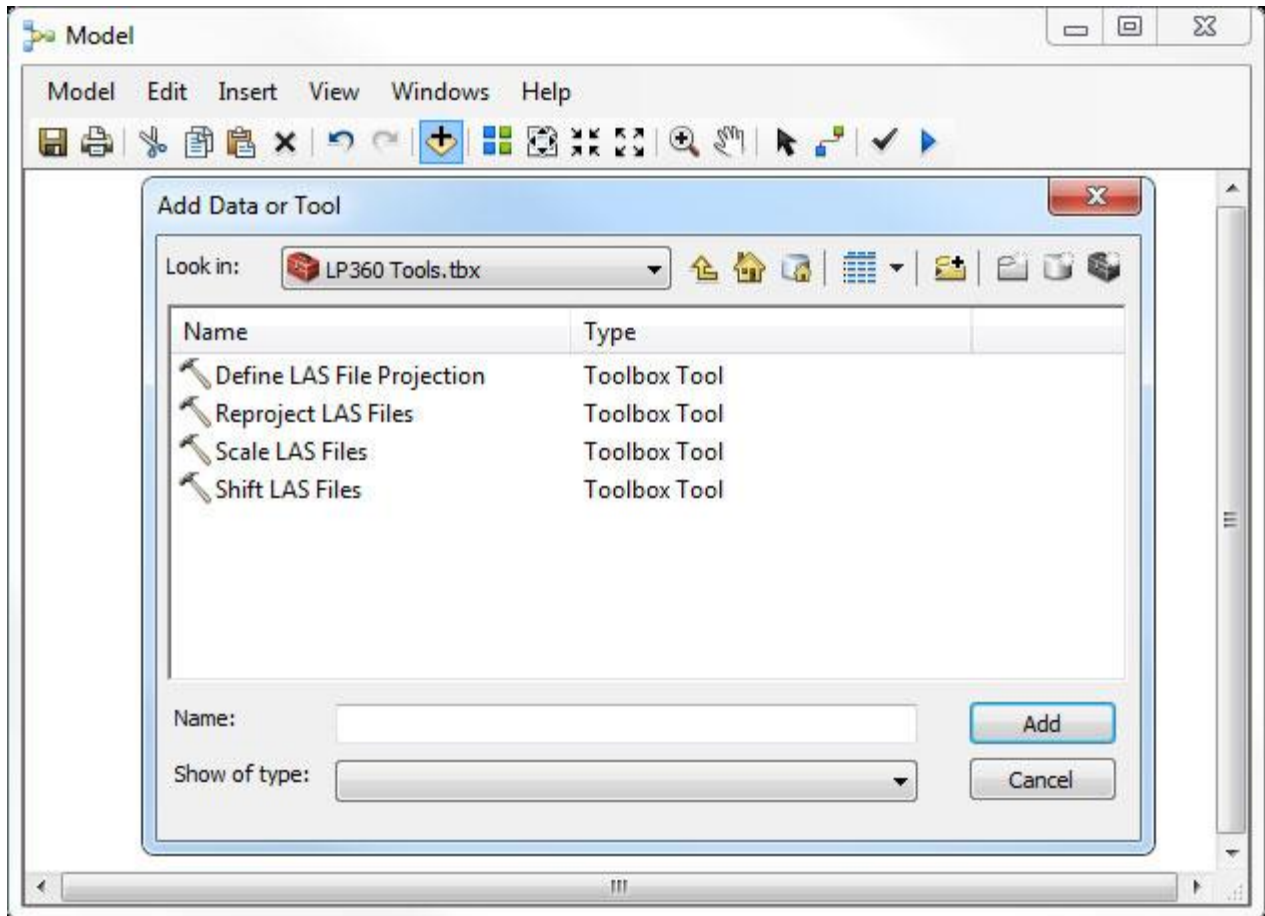


Figure 5: Add Data or Tool Dialog Box

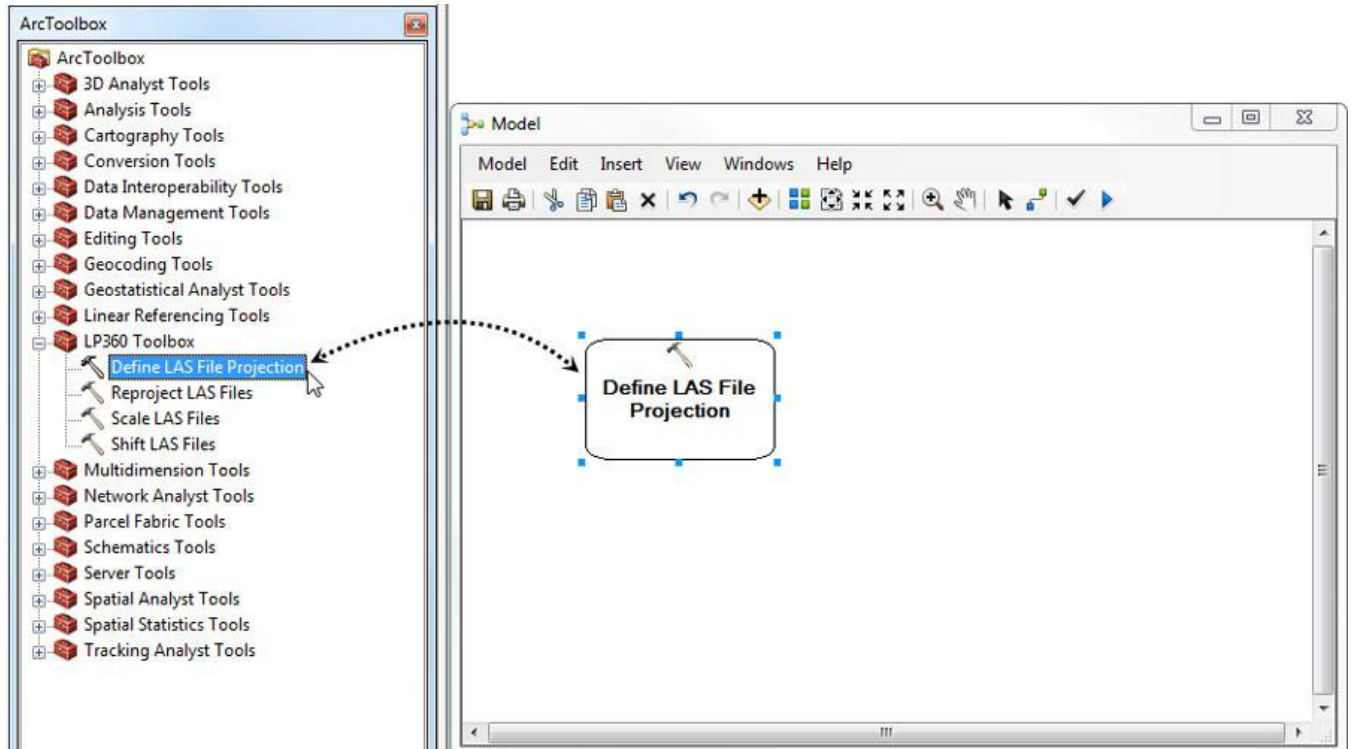


Figure 6: Drag Tool to Model Window

3. Double-click on the tool to define the parameters.

The model should show the LAS files pointing toward the tool and the Output Folder Name. Hovering over the name of the folder will provide the output location.

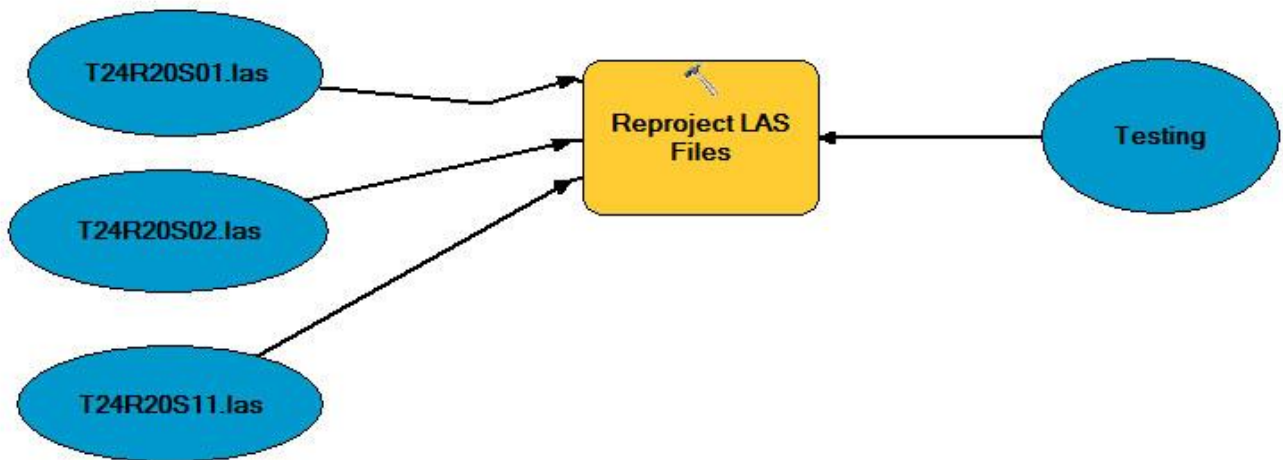


Figure 7: Re-project LAS Files within ModelBuilder

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Once the model has been completed, it can be run directly within ModelBuilder (using the Run Model command on the Model toolbar) on the machine it was created on, or the model can be saved and moved to another machine that also has LP360 installed.



Figure 8 - Run Model from within ModelBuilder