

# Tools, Tips, and Workflows

## Available LIDAR Datasets



LP360



Support

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LIDAR datasets freely available from multiple providers via the Internet make an excellent source for working with LIDAR data in LP360? In addition, with the new volumetric analysis tools and some additional analysis tools already found in LP360, these free source datasets can make for a convenient means of performing change detection in project areas.

Thanks in large part to federal government agencies, such as the United States Geological Survey (USGS), National Oceanic and Atmospheric Administration (NOAA), and the Federal Emergency Management Agency (FEMA), LIDAR datasets for large portions of the United States, particularly along the coastline, are available for free. The data is typically available tiled and has generally already been classified to some level of classification. The extent and reliability of this classification may vary greatly, depending upon the source, as some of the data may just be classified for bare earth, while other data has had additional classification of features performed.

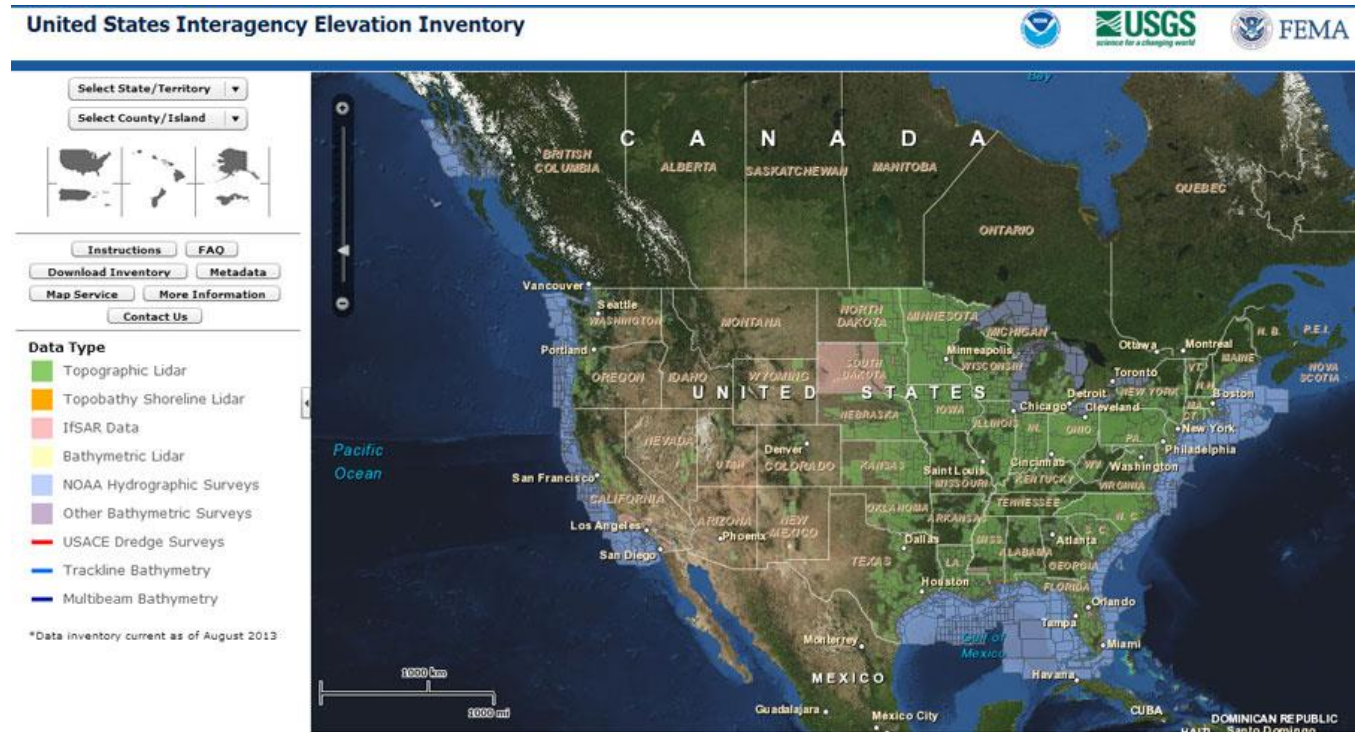


Figure 1: Interagency Elevation Inventory Website

International LIDAR datasets are a bit more difficult to come by, although they do exist. One may need to register on the site before being able to download the data files. The list below is a sample of links to free LIDAR data:

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

- ArcGIS
- Windows
- GeoCue

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### United States of America (USA)

- United States Interagency Elevation Inventory (Information only): <http://www.csc.noaa.gov/inventory/#>
- USGS Earth Explorer: <http://earthexplorer.usgs.gov/>
- NOAA Data Access Viewer: <http://www.csc.noaa.gov/dataviewer>
- Illinois Natural Resources Geospatial Data Clearinghouse: <http://www.isgs.uiuc.edu>
- Pennsylvania Spatial Data Access: <http://www.pasda.psu.edu>
- North Carolina Floodplain Mapping Information Systems: <http://floodmaps.nc.gov>
- William & Mary Center for Geospatial Analysis: <http://www.wm.edu>
- New Jersey Geographic Information Network: <https://njgin.state.nj.us>

### Multiple Countries

- LIDAR Online: <http://www.lidar-online.com/tools/maps/>

### Australia

- Remote Sensing Data Sets at UQ and QDERM: <http://tern-auscover.science.uq.edu.au/>

### Spain

- Pais Vasco LIDAR: <ftp://ftp.geo.euskadi.net/lidar/>

### United Kingdom (UK)

- Landmap Kaia Portal: <http://www.landmap.ac.uk/index.php/Interactive-Mapping/Landmap-Kaia/Landmap-Kaia-Portal>

Irrespective of how data is obtained, one should always subject it to a rigorous Quality Assurance and Quality Control (QA/QC) process to ensure that the data will be suitable for your needs or to reveal the potential limitations. In the case of LIDAR data, this process should include, at a minimum, the determination of coordinate reference systems, data classification, and file formats. Additional information about the QA/QC process can be found in [previous versions of LP360 Newsletter](#).

File	Folder	Size (MB)	Date	Msg Layer	Message	Coordinate System	Version	PDRF	GPS Time	Compatibility Group	File Signature	File Source ID	Waveform Data Internal	Waveform Data External	Synthetic Return Numbers	CRS is WKT	Project ID (GSD)
20120418_191DK770320.las	E:\Sample_Data\...	52.24	Wed Dec 18 08:00:53 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770325.las	E:\Sample_Data\...	105.51	Wed Dec 18 08:05:07 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770320.las	E:\Sample_Data\...	87.62	Wed Dec 18 08:05:17 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770365.las	E:\Sample_Data\...	103.82	Wed Dec 18 08:02:29 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770380.las	E:\Sample_Data\...	102.89	Wed Dec 18 08:02:40 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770395.las	E:\Sample_Data\...	101.59	Wed Dec 18 08:02:53 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK770410.las	E:\Sample_Data\...	109.80	Wed Dec 18 08:02:06 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...
20120418_191DK785365.las	E:\Sample_Data\...	106.38	Wed Dec 18 08:02:19 2013	LAS Layer_1		EPSG: 26909	1.2	1	GPS-Week-Seconds	D	LASF		0	false	false	false	{c02614d1-85cb-4b69-8...

Figure 2: File Statistics available when loading LIDAR data into LP360

A common problem that is encountered with unfamiliar datasets is the lack of associated metadata information. This is one of many reasons that we stress an effective QA/QC process for all incoming, and

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of course outgoing, data, as it can provide insight into potential issues. For example, if during QA/QC, it is determined that the LIDAR data is in a Geographic Coordinate System, then it will be known that the data will need to be re-projected before it may be used in LP360. The reprojection can be easily accomplished using the [ReProject](#) tool available in the ArcToolbox toolset that is delivered with LP360 for ArcGIS.

LP360 can display geographic data in the main view, however, other functionality, such as the profile or 3D views, and the Point Cloud Tasks (PCT) will not function with geographic data.

Another example is that there are some freely available LIDAR data sets that are in a compressed LIDAR file format known as LAZ. This is not an LAS compatible format, so these files would need to be decompressed into one of the official LAS file formats before they can be loaded into LP360. LP360 does not have a tool for making this conversion, however, the LP360 Import utilities can be used to decompress Lizard Tech's MrSID (MG4) compressed LIDAR files.

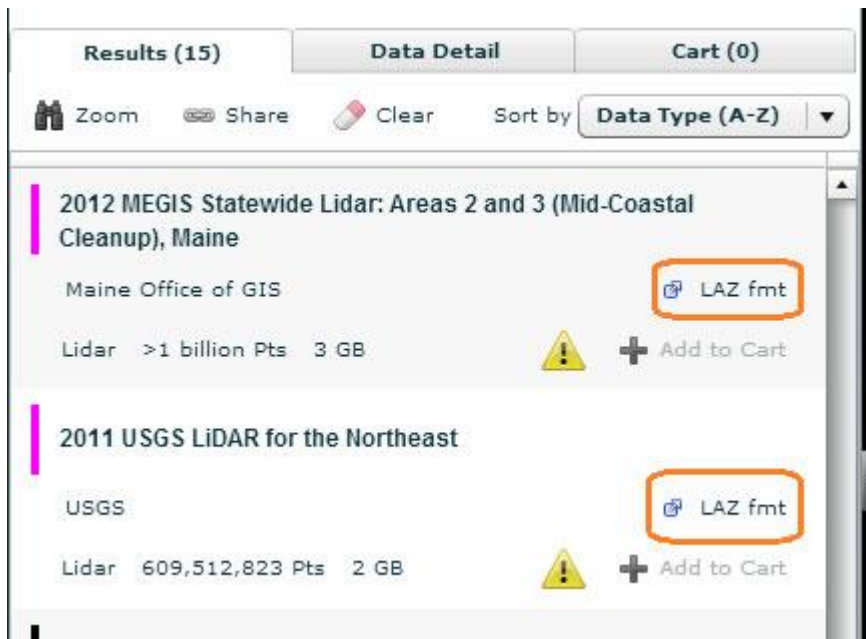


Figure 3: LAZ File Format

The list of sites above is by no means exhaustive and we strive to maintain these links on our website, <http://qcoherent.com/support/data.html>, to help users get the necessary data for utilizing the tools within LP360. If you're aware of additional free LIDAR data repositories, please let us know and we'll add them to our list.