

How to Use the Maryland Statewide LiDAR Download Tool

What is the MD iMAP Statewide LiDAR Download Tool?

The Maryland State LiDAR Download Tool is a web application that enables users to perform custom downloads from LiDAR collections in Maryland.



What LiDAR is Available from MD iMAP?

MD iMAP hosts the most recent LiDAR data for each county in Maryland. This consists of a variety of LiDAR collections that have been acquired over the years through various project partners including FEMA, USGS, NRCS and county governments.

Maryland LiDAR is available as image services on the MD iMAP [Topography Server](#), and Countywide DEMs are available on the [Pre-Defined Download Page](#). In addition, users can access products through the [Maryland Topography Viewer](#) web application and [ArcGIS Online](#).

For those users who require point cloud data, we offer the LiDAR collections for download as part of the [Maryland Statewide LiDAR Download Tool](#).

Note: If you cannot access the application, check with your organization's IT support to determine if the firewall is blocking port 8080. Access through this port is required to view the Download Tool.

The following instructions provide details on the available functionality and guidelines on how to get the most out of using the tool.

Obtaining LiDAR data through the Maryland Statewide LiDAR Download Tool is a four-step process:

[STEP 1: Select Collection – Display, Explore and Select Collection for Download](#)

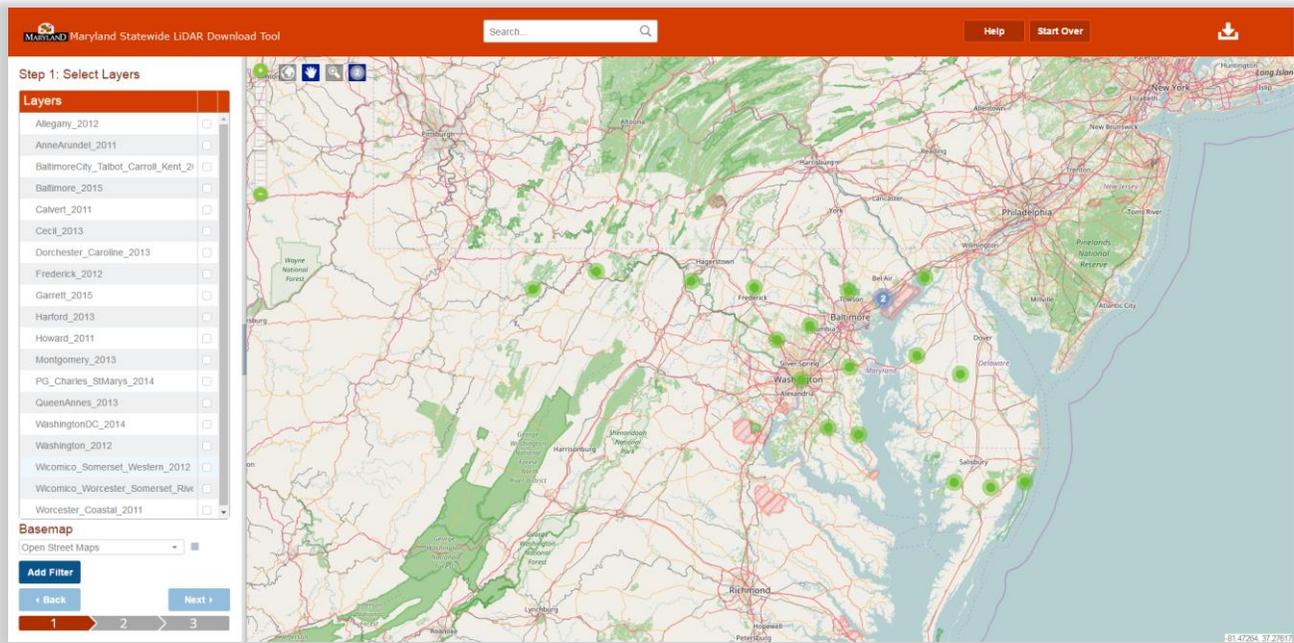
[STEP 2: Select Export Region – Define Area of Interest and Select a Projection for Download](#)

[STEP 3: Configure Export Options – Set Output Parameters](#)

[STEP 4: Access Downloaded LiDAR– Receive Notification and Retrieve Completed Jobs](#)



STEP 1: Select Collection – Display, Explore and Select Collection for Download



Layers Panel: The layers panel displays the LiDAR collections available for download. The data is organized by collection catalogs, some of these catalogs may contain multiple counties depending on how the data was delivered from the vendor.

a. **Turn On/Off LiDAR:** Click the checkbox next to the collection name to turn the layer on and off.

Layers	
Allegany_2012	<input type="checkbox"/>
AnneArundel_2011	<input type="checkbox"/>
BaltimoreCity_Talbot_Carroll_Kent_2	<input type="checkbox"/>
Baltimore_2015	<input checked="" type="checkbox"/>
Calvert_2011	<input type="checkbox"/>

b. **View Layer Boundary:** Single Click the collection name to view the layer boundary without turning the layer on or off. Indicated by the green bar on the left of the collection name.

Layers	
Allegany_2012	<input type="checkbox"/>
AnneArundel_2011	<input type="checkbox"/>
BaltimoreCity_Talbot_Carroll_Kent_2	<input type="checkbox"/>
Baltimore_2015	<input checked="" type="checkbox"/>
Calvert_2011	<input type="checkbox"/>

c. **Identify Available Projections:** Hover over a collection name to view the projections available for download.

Layers	
Allegany_2012	<input type="checkbox"/>
AnneArundel_2011	<input type="checkbox"/>
BaltimoreCity_Talbot_Carroll_Kent_2	<input type="checkbox"/>
Baltimore_2015	<input checked="" type="checkbox"/>
Click to view layer boundary. Right-click for options.	
Baltimore_2015	
<ul style="list-style-type: none"> • EPSG:3857 • EPSG:4326 • EPSG:2893 	

d. **Access Quick Functions:** Right click on any collection to 'Zoom To', 'Export All', 'Export None', 'Select All' or 'Clear Selection'

Layers	
Allegany_2012	<input type="checkbox"/>
AnneArundel_2011	<input type="checkbox"/>
BaltimoreCity_Talbot_Carroll_Kent_2	<input type="checkbox"/>
Baltimore_2015	<input checked="" type="checkbox"/>
Calvert_2011	<input type="checkbox"/>
Cecil_2013	<input type="checkbox"/>
Dorchester_Carroll	<input type="checkbox"/>

Zoom to

- Export all
- Export none
- Select All
- Clear selection

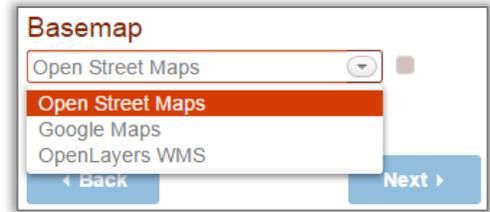
e. **Collection Selected for Download:** Once the desired layer is turned on, the collection is ready for download. Check the box next to the desired collection name.

Layers	
Allegany_2012	<input type="checkbox"/>
AnneArundel_2011	<input type="checkbox"/>
BaltimoreCity_Talbot_Carroll_Kent_2	<input type="checkbox"/>
Baltimore_2015	<input checked="" type="checkbox"/>
Calvert_2011	<input type="checkbox"/>

Note: Only one layer should be checked for download! Collections are downloaded in their native projection; to avoid data degradation please do not try to download multiple collections in a single submission!



Basemap Dropdown: The basemap dropdown switches the underlying basemap from a select group of basemaps. Use the dropdown to select from the available basemaps, which are: 'Open Street Map', 'Google Maps' and 'Open Layers WMS'.



Add Filter Button: The add filter button searches for collections based on related keywords.

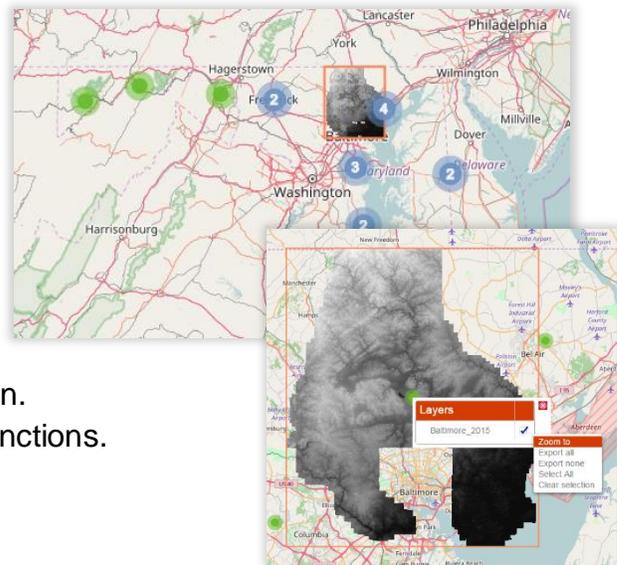


Note: This tool is not currently applicable.

Step Navigator Buttons: The step navigator buttons allow for moving back and forth within the LiDAR download steps.



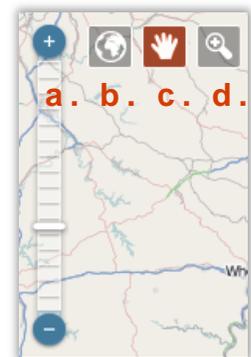
Map: The map displays an initial basemap, the number of LiDAR datasets available in an area and the actual LiDAR collection indicated as turned on in the layers panel.



Collections: The blue dots with numbers indicate how many collections are available in that region. The green dots indicate the geographic center of an individual LiDAR collection. Left click on any of these dots to access Quick Functions.

Navigation Tools: The navigation tools provide basic pan and zoom functionality.

- a. **Fixed Zoom:** Zooms in and out at regular intervals
- b. **Global Zoom:** Zooms out to the maximum extent
Note: Using this will zoom to the entire globe, not the extent of Maryland
- c. **Pan Tool:** Move in any direction at the same scale
- d. **Zoom to Extent Tool:** Zoom in to a defined extent by drawing a box.
Note: There is no zoom out function with this tool



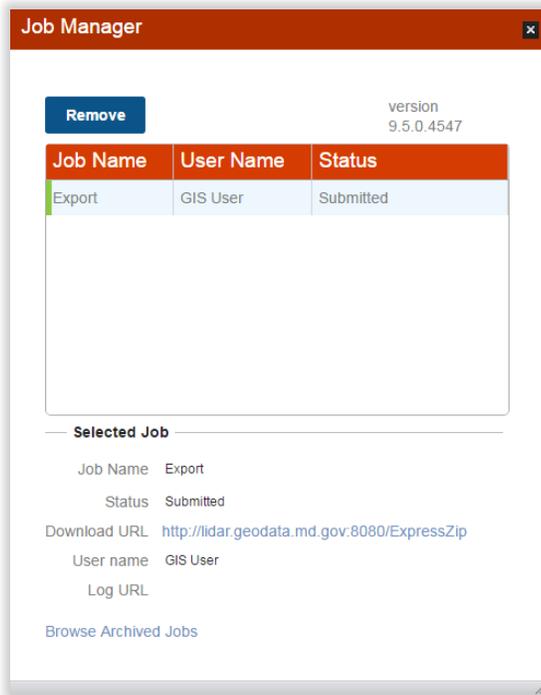
Search Tool: The location search tool is used to enter an address or location and zoom directly to that location.

Note: The search is powered by Open Street Map, not the Maryland Composite Locator.

Help Button: The help button provides quick access to application specific help documents.

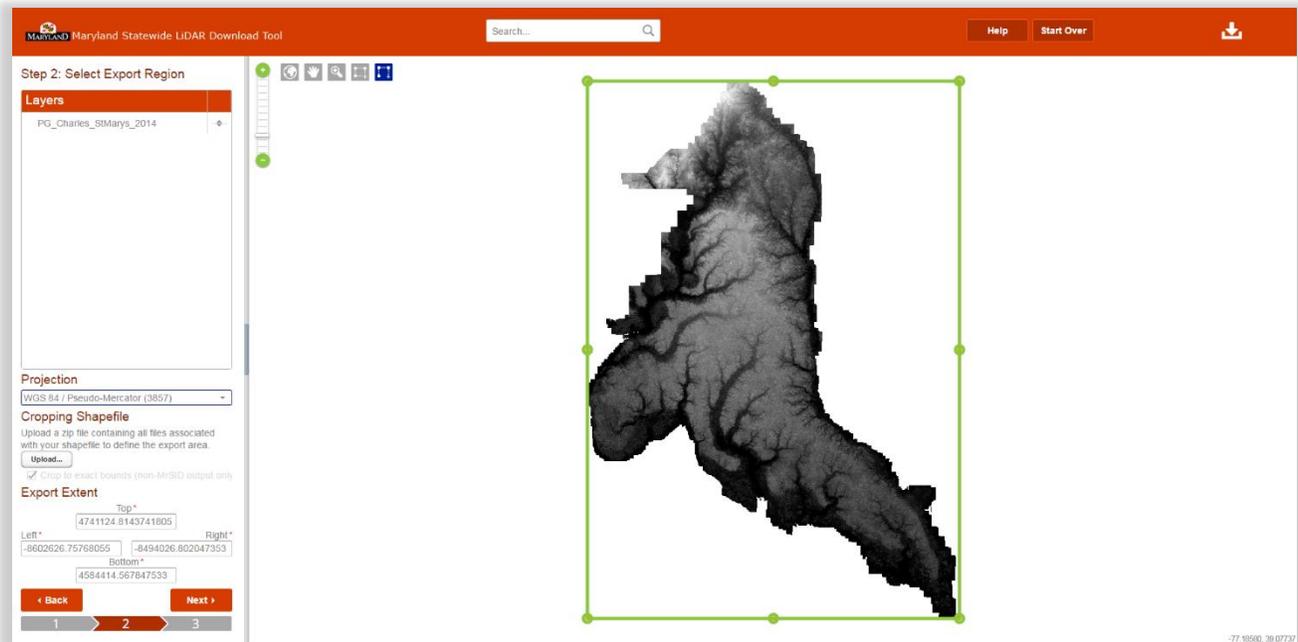
Start Over Button: The start over button erases all selected options and starts a new session.

Job Manager Button: The job manager button opens the Job Manager panel. The panel displays the status of download requests and supplies a link to the download once complete.



Click  to move to **STEP 2** of the process.

STEP 2: Select Export Region – Define Area of Interest and Select a Projection for Download



Layers Panel: The layers panel displays the LiDAR collection selected. Layers panel tools are used to define an area of interest for download.

Projection Dropdown: The projection dropdown assigns the projection to be used for the download. The application will automatically transform and re-project the LiDAR data and output files into the projection selected.

Projection



Note: The values in parentheses are EPSG values, a coordinate system identified by the European Petroleum Survey Group.

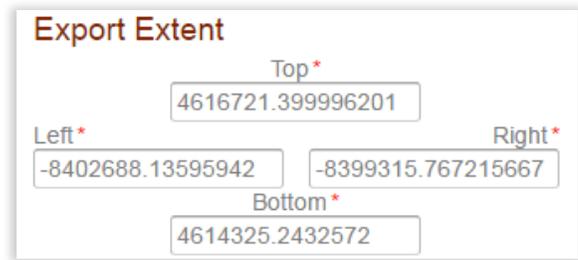
Cropping Shapefile Button: The cropping shapefile button opens Windows Explorer and allows you to select a zipped file to define the area for exporting.

Cropping Shapefile

Upload a zip file containing all files associated with your shapefile to define the export area.

Upload...

Export Extent Tool: The export extent tool is used to enter a specific set of bounding box coordinates to define as the area of interest for download.



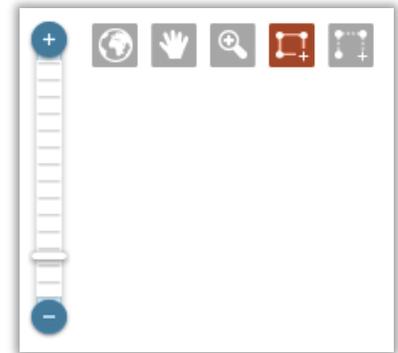
Export Extent

Top*
4616721.399996201

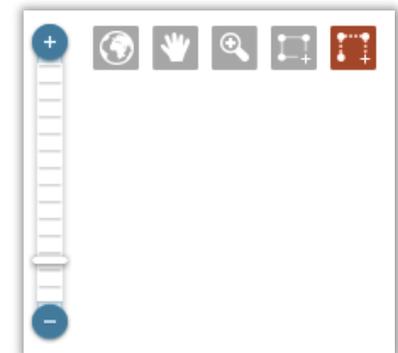
Left* -8402688.13595942 Right* -8399315.767215667

Bottom*
4614325.2432572

Polygon Selection Tool: The polygon selection tool draws a unique rectangle over the collection to define the area interest for download. Click and drag the mouse on the map to complete the process.



Polygon Adjustment Tool: The polygon adjustment tool moves or resizes the created polygon selection.



Click [Next >](#) to move the **STEP 3** of the process.

STEP 3: Configure Export Options – Set Output Parameters



Job Details Panel: The job details panel provides the ability to enter information specific to identify the job later through the Job Manager window. Through this panel, setup the application to send out an email notification once the job is complete. An export summary indicates the number of tiles that will be generated and an estimate on how large the file will be.

Note: The provided email address will receive an email from ExpressZip@lidar.geodata.md.gov, with “Job <Defined Job Name> has finished processing” in the subject line. A link to the download will be included in the body of the email.

Job details

Job name*

User name

Email address

Export summary
Number of tiles: 1
Disk usage estimate: 292 KB

Format Options Panel: The format options panel allows the user to modify output settings for their request.

The most critical component to the Format Options is the Thinning Factor.

The Thinning Factor is the percentage of points returned upon request; where 1.0 = 100%

We HIGHLY recommend leaving the Thinning Factor set to 1.0

Reducing the value below 1.0 will degrade the output data by removing points from the point cloud.

Recommended Settings:

- Packaging Format: ZIP
- Output format: LAS
- Thinning Factor: 1.0
- Output Format: None
- Data Type: FLOAT32

The Maryland Statewide LiDAR Download Tool is not designed for generating DEMs from the Point Cloud data.

The screenshot shows a web interface titled "Format options" with a dark red header. It contains several sections of settings:

- Packaging Format:** A dropdown menu set to "ZIP".
- LiDAR Point Cloud Options:** Includes "Output format" (dropdown set to "LAS") and "Thinning factor" (input field set to "1.0").
- DEM Options:** Includes "Output format" (dropdown set to "None") and "Data type" (dropdown set to "FLOAT32").
- General LiDAR Options:** Two empty input fields for "Minimum Z" and "Maximum Z".
- Classifications:** A scrollable list containing "bridge deck", "ground", "noise", "rail", and "road surface".

Countywide DEMs are available for download from the [MD iMAP DEM Download](#) page.

However, if you do choose to generate a DEM using the LiDAR Download Tool, please refer to the [LiDAR Metadata page](#) before proceeding with caution.

If you are looking to generate surface models from your point cloud data, you may also be interested in reading [How to Build LAS Datasets and Render in 3D Using ArcGIS for Desktop](#).



Export Resolution Panel: The export resolution panel allows the user to set resolution settings and tiling preferences. The Maryland Statewide LiDAR Download Tool is designed for point cloud extraction. This tool is not optimized for surface modeling or DEM products, leaving the Export Resolution settings as default will suffice for point cloud downloads as these settings only apply to raster data types.

Dimensions: This setting only applies to raster data. Leave as default.

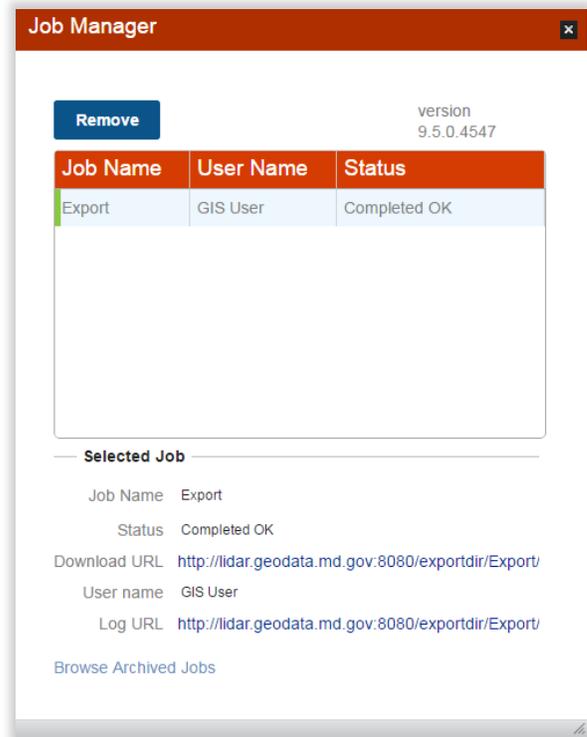
Tiling: This will default to the recommended number of tiles based on total area and number of points. Leave as default.

Click  to run the download process.

STEP 4: Access Downloaded LiDAR – Receive Notification and Retrieve Completed Jobs

- a. **Via Job Manager Panel:** Once submitted, each job will appear in the Job Manager Panel with the status of “Submitted”, “Completed OK” or “Error”. If the download has completed successfully, click on the job name and a Download URL will appear at the bottom of the panel. Click this URL to access the downloaded LiDAR.

- b. **Via Email:** If an email address was submitted with the request, that email address will be notified once the download is complete. A link will be provided in the email with access to the downloaded LiDAR.



Note: This is a public facing application. We cannot prevent other users from accessing submitted requests, downloading or removing the results of submitted requests. This includes access to the Log URL which contains the user’s email address used to make the request.

ADDITIONAL RESOURCES

For more information about Maryland LiDAR, please visit the Maryland LiDAR Overview page

Supplementary LiDAR training modules can be found on the [MD iMAP Training Documents page](#)

For additional MD iMAP datasets, please visit the [GIS Data Catalog](#)

For all other inquiries related to Maryland LiDAR, please contact the GIO Office at service.desk@maryland.gov

