

Indiana 3DEP Lidar Data Products, Data Accuracy, and Data Access (Updated 8/11/2020)

In 2016 NRCS contracted with USGS and Woolpert Inc. to develop new statewide Lidar data as part of the USGS's 3D Elevation Program (3DEP). The map below shows the current status of this effort.



Indiana Deliverable Base Products Include:

1. Lidar Tiles – individual tiles in LAS 1.4 Format (QL2 Lidar data consists of 2 laser pulses per meter spacing)
2. DEM Tiles – individual tiles in IMG Format (Bare-Earth Hydro-Flattened Digital Elevation Model)
3. Breaklines – GIS hydrography features (rivers and lake polygons) used to create Bare-Earth Hydro-Flattened DEM
4. Intensity Data Tiles – individual tiles in TIF Format (2.5-foot pixel intensity image generated from the First Return Lidar Pulse recording of surface reflectance)
5. DEM Mosaic – Merged countywide DEM mosaic file in IMG Format generated from #2 above
6. County Delivery Tile Grid – GIS Shapefile showing all delivery tiles and their file names
7. FGDC Metadata*

USGS QL2 Lidar Absolute Vertical Accuracy (3DEP Specifications)

Absolute accuracy is the closeness of a computed value [Lidar point elevation] to its true value [Surveyed GPS Point elevation]. [\[REF\]](#)

RMSEZ (non-vegetated)	NVA at 95-percent confidence level	VVA at the 95 th percentile
≤ 0.100 (m) / .328 (ft)	≤ 0.196 (m) / .643 (ft)	≤ 0.300 (m) / .984 (ft)

Based on the table above, you should expect that any elevation you observe in a final QL2 3DEP Lidar or DEM product should be within one (1) foot of its true elevation as measured on the ground, but to assure the absolute vertical accuracy of Indiana's 3DEP data, a vertical accuracy assessment was performed.

Indiana QL2 Lidar Absolute Vertical Accuracy (Assessment)

Vertical accuracy assessment of the final delivered Lidar data and the derived DEM is a well-established statistical assessment performed following the National Standard for Spatial Data Accuracy (NSSDA) [\[LINK\]](#). This assessment is performed using well distributed ground surveyed [GPS] check points

collected across the entire project area (State of Indiana) in the following major land cover types defined by 3DEP:

- Nonvegetated Areas (NVA) - open terrain, bare earth, urban areas
- Vegetated Vertical Accuracy (VVA) - tall grass, tall weeds, and crops, brush lands and short trees, forested areas and areas covered by trees

*After Indiana's 3DEP project is 100% complete (est. Fall 2020) final project data Accuracy Assessments will be performed and the final project statewide Metadata reports will be produced by Woolpert and provided by USGS.

QL2 Lidar Vertical Accuracy Assessment for you Area of Interest (AOI)

Indiana's 3DEP Lidar vertical accuracy assessment is based on a statistical sampling and test performed across the entire State of Indiana. Before you use this data for your project AOI, you need to do your own due-diligence to ensure that the specific data you are using is suitable for your own purposes by performing a NSSDA Vertical Accuracy Assessment of the source Lidar data or DEM in your AOI. The requirements can be found [HERE](#), and an overview of this process can be found [HERE](#), and [HERE](#), with a spreadsheet template to calculate your test results [HERE](#).

Indiana Statewide Lidar Data Distribution Resources

- Public - Download Indiana 2016-2019 Statewide Ortho & Lidar Mosaics from IGIC - <https://legacy.igic.org/indiana-orthophotography-and-dem-download-story-app/>
- Public - Download Indiana 2016-2019 Statewide Lidar & DEM Tiles from Purdue University – <http://lidar.jinha.org/>
- Public - Download Indiana 2011-2013 Statewide Lidar & DEM data by Area of Interest from OpenTopography – <http://bit.ly/Xwy86P>
- Public – From IndianaMap (Hosted by IGIC and IGWS at <http://www.indianamap.org/>)
 - To view the 2011-2013 Lidar Color Hillshade layer on IndianaMap click [HERE](#)
 - To access the 2011-2013 Lidar Color Hillshade layer REST service click [HERE](#)
 - To access the IndianaMap Open Data HUB click [HERE](#)
- Public – From the USGS National Map - Data Delivery Home Page click [HERE](#)
- Academic [only] Access – Download Nationwide 3DEP Lidar & DEM data from USGS AWS repository by Area of Interest from OpenTopography - <https://opentopography.org/news/new-usgs-3dep-datasets-available-opentopography>
- County & State Government - IGIC delivered Hard Drives containing all new 3DEP data products to each County and to Indiana 's GIO.
- IGIC Members – IGIC delivered Hard Drives containing all new 3DEP data products to our IndianaMap Partner and our Sponsors. Additionally, IGIC Travel Drives containing all current data by county can be checked out by contacting lidar@igic.org
- Additional Indiana Lidar information from IGIC
 - Indiana Statewide Lidar Planning and Status Story Map click [HERE](#)
 - IGIC Elevation Workgroup blog posts click [HERE](#)