**Buffalo County 2016 LiDAR Products**

**About 2016 LiDAR Products**

The process for acquiring LiDAR in Buffalo County began in late 2014 with the announcement of the USGS 3DEP LiDAR Matching Grant Program. In 2015, in coordination with the State of Wisconsin and Ayres Associates the Buffalo County Land Information Office was successfully awarded a USGS 3DEP LiDAR Matching Grant for the collection and processing of LiDAR in the spring in 2016. All LiDAR deliverable products are available in 4,500-foot by 4,500-foot tiles across the county

**Specifications**

LiDAR data and derivative products to conform to specifications defined in the USGS “National Geospatial Program LiDAR Base Specification Version 1.2”. LiDAR data and meets USGS definition of Quality Level 2 (QL2) and are reference to WISCRS, Buffalo County Coordinates, NAD 83 (11), NAVD 88 (12A), US Survey Feet.

The calibrated LiDAR point cloud used to develop the bare earth surface model (DEM) meets the following vertical accuracy requirements:

1.RMSEz (non-vegetated) ≤ 10 cm (Point Cloud and DEM)

2.NVA ≤ 19.6 cm at 95% confidence level according to NSSDA standards (Point Cloud and DEM)

3.VVA ≤ 29.4 cm at 95th percentile level according to ASPRS guidelines (DEM only)

**View Vertical Accuracy Report**

This report details the absolute vertical accuracy of the LiDAR point cloud and derived DEM as tested against independent survey control points.

**LiDAR Products Details**

**Classified Point Cloud, LAS 1.4 format**

The calibrated LiDAR point cloud is classified to the following base classification scheme:

Class 1: Processed, but unclassified

Class 2: Bare-earth ground

class 5: High Vegetation

class 6: Buildings

Class 7: Low Noise

Class 9: Water

Class 10: Ignored ground (breakline proximity)

Class 17: Bridge Decks

Class 18: High Noise

**Digital Elevation Model (DEM)**

Generated from classified bare earth points (Class 2) and breaklines. Water bodies and streams are hydro-flattened within the DEM. The cell size is 2-foot pixels. Formatted to 32-bit floating grid tiles (.flt).

**Topographic improved 2-foot contours**

Generated at 2-foot contour intervals from the bare earth surface and breaklines. Formatted in ESRI shapefile tiles. Attributed with four types of contours, which are index, index depression, intermediate, and intermediate depression.Buffalo County 2016 LiDAR Products

Instructions to download data

1. Pan and zoom to the area of interest and click on the section you wish to download.
2. Select the link in the popup box to start the download.
   * Classified Point Cloud, LAS format
   * Topographic improved 2-foot contours
   * Digital Elevation Model (DEM)

**About 2016 LiDAR Products**

The process for acquiring LiDAR in Buffalo County began in late 2014 with the announcement of the USGS 3DEP LiDAR Matching Grant Program. In 2015, in coordination with the State of Wisconsin and Ayres Associates the Buffalo County Land Information Office was successfully awarded a USGS 3DEP LiDAR Matching Grant for the collection and processing of LiDAR in the spring in 2016. All LiDAR deliverable products are available in 4,500-foot by 4,500-foot tiles across the county

**Specifications**

LiDAR data and derivative products to conform to specifications defined in the USGS “National Geospatial Program LiDAR Base Specification Version 1.2”. LiDAR data and meets USGS definition of Quality Level 2 (QL2) and are reference to WISCRS, Buffalo County Coordinates, NAD 83 (11), NAVD 88 (12A), US Survey Feet.

The calibrated LiDAR point cloud used to develop the bare earth surface model (DEM) meets the following vertical accuracy requirements:

1. RMSEz (non-vegetated) ≤ 10 cm (Point Cloud and DEM)
2. NVA ≤ 19.6 cm at 95% confidence level according to NSSDA standards (Point Cloud and DEM)
3. VVA ≤ 29.4 cm at 95th percentile level according to ASPRS guidelines (DEM only)

[**View Vertical Accuracy Report**](http://gis.buffalocounty.com/downloads/LiDAR/Buffalo%20County_Vertical%20Accuracy%20Report_.pdf)

This report details the absolute vertical accuracy of the LiDAR point cloud and derived DEM as tested against independent survey control points.

**LiDAR Products Details**

***Classified Point Cloud, LAS 1.4 format***

The calibrated LiDAR point cloud is classified to the following base classification scheme:

Class 1: Processed, but unclassified

Class 2: Bare-earth ground

class 5: High Vegetation

class 6: Buildings

Class 7: Low Noise

Class 9: Water

Class 10: Ignored ground (breakline proximity)

Class 17: Bridge Decks

Class 18: High Noise

***Digital Elevation Model (DEM)***

Generated from classified bare earth points (Class 2) and breaklines. Water bodies and streams are hydro-flattened within the DEM. The cell size is 2-foot pixels. Formatted to 32-bit floating grid tiles (.flt).

***Topographic improved 2-foot contours***

Generated at 2-foot contour intervals from the bare earth surface and breaklines. Formatted in ESRI shapefile tiles. Attributed with four types of contours, which are index, index depression, intermediate, and intermediate depression.