

**Project Definition:** The entire collection for a contracted area.

**Work Unit Definition:** A production block of data defined by the National Geospatial Technical Operations Center due to expediency, priority or resource allocation. There can be one or many work units per project.

## Project Information

<b>Lidar Base Specification:</b> 1.3	<b>Primary Contractor:</b> The Sanborn Map Company, Inc. (Sanborn)
<b>Las Version:</b> 1.4	<b>Contract Mechanism:</b> Contributed
<b>P Method:</b> 7 - Linear-Mode Lidar	
<b>Collection Start Date:</b> 05-07-2019	<b>Collection End Date:</b> 06-07-2021
<b>The National Map Email:</b> tnm_help@usgs.gov	

## Vertical Accuracy Results

The U.S. Geological Survey evaluates absolute vertical accuracy of the lidar and lidar-derived bare earth DEM data at the project level

Lidar Point Cloud	Required NVA RMSEz (cm)	Tested NVA RMSEz (cm)	Required NVA at 95% confidence level (cm)	Tested NVA at 95% confidence level (cm)	Required VVA at 95th percentile (cm)	Tested VVA at 95th percentile (cm)
	10.0	<b>5.64</b>	19.6	<b>11.06</b>	N/A	<b>16.11</b>

Digital Elevation Model	Required NVA RMSEz (cm)	Tested NVA RMSEz (cm)	Required NVA at 95% confidence level (cm)	Tested NVA at 95% confidence level (cm)	Required VVA at 95th percentile (cm)	Tested VVA at 95th percentile (cm)
	10.0	<b>5.53</b>	19.6	<b>10.83</b>	30.0	<b>14.05</b>

Please see the vertical\_accuracy folder within the project metadata for more information.

## Classifications Used

Classification verification is limited to the minimum required by applicable Lidar Base Specification. Classifications beyond the minimum are not verified by USGS.	
Classification ID	Classification Type
1	Processed, But Unclassified
2	Bare Earth
7	Low Noise
9	Water
17	Bridge Decks
18	High Noise
20	Ignored Ground

## Sensor(s) Used

Sensor
Leica ALS80 - Aerial Oscillating Mirror



## Work Unit Information

<a href="#">MI_FEMA_Antrim_Otsego_2019</a>	<b>Work Unit ID:</b> 174048	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-07	<b>Collection End Date:</b> 2020-04-27	

<a href="#">MI_FEMA_Houghton_Keweenaw_Ontonagon_2019</a>	<b>Work Unit ID:</b> 181570	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6496	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-26	<b>Collection End Date:</b> 2021-06-07	

<a href="#">MI_FEMA_Luce_Schoolcraft_2019</a>	<b>Work Unit ID:</b> 181572	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6496	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2020-05-13	<b>Collection End Date:</b> 2020-05-20	

<a href="#">MI_FEMA_Alpena_Montmorency_2019</a>	<b>Work Unit ID:</b> 181564	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2020-04-24	<b>Collection End Date:</b> 2020-04-28	

<a href="#">MI_FEMA_Crawford_Kalkaska_2019</a>	<b>Work Unit ID:</b> 181554	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-17	<b>Collection End Date:</b> 2019-05-22	

<a href="#">MI_FEMA_Alcona_Oscoda_2019</a>	<b>Work Unit ID:</b> 181556	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-14	<b>Collection End Date:</b> 2019-11-08	

<a href="#">MI_FEMA_Chippewa_2019</a>	<b>Work Unit ID:</b> 181560	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-26	<b>Collection End Date:</b> 2019-05-30	

<a href="#">MI_FEMA_Cheboygan_2019</a>	<b>Work Unit ID:</b> 181558	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6494	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-12	<b>Collection End Date:</b> 2019-11-27	

<a href="#">MI_FEMA_Dickinson_Iron_Menominee_2019</a>	<b>Work Unit ID:</b> 181566	<b>Quality Level:</b> 2
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<b>Horizontal EPSG Code:</b> 6496	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2020-05-02	<b>Collection End Date:</b> 2020-06-28	

<a href="#">MI_FEMA_Gogebic_2019</a>	<b>Work Unit ID:</b> 181568	<b>Quality Level:</b> 2
<b>Horizontal EPSG Code:</b> 6496	<b>Vertical EPSG Code:</b> 8228	<b>Geoid Model:</b> GEOID12B
<b>DEM Ground Sample Distance:</b> 2.0	<b>Hydro Treatment:</b> hydro-flattened	
<b>Collection Start Date:</b> 2019-05-21	<b>Collection End Date:</b> 2020-05-29	