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Light Detection and Ranging (LiDAR) is a remote sensing tool used to gain detailed observations of the earth's surface. LiDAR is collected by a near-infrared laser pulsing at the earth's surface in order to measure the distance and deduce an elevation value. The resulting data consists of x-value (latitude), y-value (longitude), and a z-value (elevation), allowing the location and elevation to be known for a given point. On this map, these points are typically collected with a spacing of approximately 1-meter and then assembled into separate tiles. These tiles are then assembled and mosaicked into a larger area (such as a 1:24,000 quadrangle) as a digital elevation model (DEM). The DEM of this dataset is represented as a raster to reveal surface expression and topographic relief of earth's surface.

LiDAR Collection and Storage

The North Dakota State Water Commission is further acknowledged for providing the state-wide LiDAR dissemination map service (<http://lidar.swc.nd.gov/>) which stores the extremely large volume of LiDAR data thus enabling the Geological Survey to generate this map.

— Section Line

