

3DGeomatics Committee Data Acquisition Workgroup

Why 3DGeo Supports Quality Level 1

The 3D Geomatics Committee and the Minnesota Lidar Plan recommend lidar collection at USGS Lidar Base Specification (LBS) Quality Level 1 (QL1), statewide.

The Plan is to meet and exceed the USGS's minimum high-quality data standards to ensure the broadest base of end-user applications and higher return on investment for all.

At eight pulses per square meter minimum, QL1 far exceeds the capabilities of QL2 and enables the creation of several high quality derived datasets, including:

- DEMs at 50-centimeter resolution
- Contour line intervals as frequent as 1-foot
- Detailed above-ground feature mapping (e.g., building footprints and vegetation structure)
- Resolved water conveyance features (e.g., sewers, culverts, and other human made infrastructure)

High-density lidar is needed to capture features that are often missed because they are too small or hidden underneath vegetation (e.g., obstruction from dense cattail beds and overhanging woody vegetation in small streams).

Where this quality of lidar data was not commonly available in the past, today, QL1 lidar data can vastly improve and speed up the process of mapping many features across all disciplines. This is both because of the enhanced detail available with more points per square meter and because of the improvements in modern algorithms and computational power.