

# METADATA

## Tags

Colorado Geological Survey, Landslides, Landslide inventory

## Summary

Boulder County is located northwest of Denver County and contains several Denver suburbs in addition to the city of Boulder. Urban growth and development is encroaching on steep, landslide prone slopes. This dataset is part of a statewide effort to develop lidar-based landslide inventories of landslide-prone areas in Colorado. This dataset includes a landslide inventory of Boulder County, identified and mapped using 1-m resolution lidar. Debris-flow and rockfall deposits are not mapped.

CGS has developed a 3-level schema for lidar-based landslide inventories. Level 1 inventories are comprised of landslide deposits but lack any detailed mapping of nested landslide deposits and scarps and use a simplified attribute table. [County boundaries](#) were acquired in 2025 from the Colorado Department of Public Health and Environment (CDPHE).

## Description

Landslides are mapped using 1-m resolution, lidar-derived slope maps. Lidar was examined and landslide deposits were mapped at varying scales, generally 1:5,000 or smaller, but may be as great as 1:2,000. Five- to ten-foot contours derived from lidar DEM's assisted with mapping deposit boundaries. This inventory does not include rockfall or debris-flow deposit mapping. A simple attribute table accompanies this inventory dataset and include:

**Confidence:** A mapping confidence assigned by the mapper(s). Considerations are listed for each confidence interval. Confidence can be re-assed after field review.

Low: Landslide features are difficult to distinguish, boundaries are not clear, and/or the lidar is distorted (tinning) and difficult to interpret. Even though none are mapped, headscarps and flanks are difficult to distinguish, and general landslide morphology (hummocky topography, internal scarps) is muted, weathered, or eroded.

Moderate: Most landslide features are distinguishable in lidar, but some deposit features may not be well-defined. Headscarps may be present and easy to identify,

or they may be more eroded but are generally still defined. Deposit boundaries may be difficult to distinguish in places, but the general shape and distribution of the landslide deposit is still distinguishable in the lidar. Hummocky topography is present but may not be as well-defined as a high confidence landslides.

**High:** Most or all landslide boundaries are easy to identify and map. The landslide deposit shows clear hummocky topography and, though none are mapped, if internal scarps are present, they are clearly defined in lidar. Headscarps and flanks, though none are mapped, are clear and easy to identify.

**FieldCheck:** An attribute to identify landslides confirmed during fieldwork, with a “Yes”. This field is left blank for landslides that are not field confirmed. Any mapped landslides that the mapper confirmed were not present in the field were removed from the dataset.

**Notes:** Mapper notes for landslide deposits. Some earlier datasets may not include mapper notes until the dataset is reevaluated and published.

**County:** The county where the landslide deposit exists within

**Unique\_ID:** A unique identified assigned using a combination of the county name and OBJECTID.

Lidar of Boulder County was collected over several flights. In 2011, lidar covering the entire county was collected by Ayers Associates. Photo Science re-collected lidar of the county after major flooding in 2013. Lidar can be accessed [here](#).

## Map Use Limitations

This inventory dataset includes minor changes from the previous inventory dataset published as a part of [OF-19-06](#) (Lindsey: Landslide Inventory and Susceptibility Map of Boulder County, Colorado) and should supersede it. Landslide susceptibility mapping remains the same. This is not a complete dataset of existing landslides. Where these processes have occurred before, it is possible for them to occur in the future if appropriate assessment and mitigation are not developed. This inventory mapping does not show any assessment of susceptibility or risk. This map is intended for use at a 1:24,000 scale and should not be used for site-specific analysis; rather, this mapping should be used to advise on how much and what type of site-specific analysis may be necessary. To assess landslide initiation susceptibility, a qualified geotechnical engineer or engineering geologist should be enlisted to evaluate each site or drainage individually. This database will continue to be updated iteratively when new data becomes available.

## Credits

Colorado Geological Survey.