

Lidar Mapping

Montana State Library (\$8,000,000)

Program Description

As Montana invests millions of American Rescue Plan (ARPA) Act dollars in broadband, water, sewer, and other infrastructure projects, use of light detection and ranging (lidar) data create efficiencies that maximize that investment. Currently only 30% of Montana has available lidar. Onetime investment will mean that Montana can complete statewide lidar mapping through the U.S. Geologic Survey (USGS) 3D Elevation Program (3DEP), with the USGS covering 60% of the total cost.



Precision elevation data from lidar is used to perform site planning for broadband deployment, sewer and water projects, irrigation planning, road and highway construction, and numerous other types of infrastructure projects. Lidar is used for watershed analysis of line of site corridors to rapidly inform site selection for cell towers. Lidar is used to identify features such as river channel migration for floodplain identification. Lidar is used to identify numerous irrigation components including dams, headgates, and other diversions for improving irrigation systems and preventing farm runoff. More details about how lidar data is being used in Montana can be found here in the Montana lidar inventory: <https://arcs.is/1uejTi0>.

Funding	
Total OTHER ARPA Funds	\$8,000,000
Total USGS 3DEP Match	\$12,000,000
Total	\$20,000,000
Estimated Costs	
Lidar data collection (USGS procurement)	\$20,000,000
Total	\$20,000,000

Required Resources

To complete statewide Lidar data collections, Montana will contribute \$8,000,000 to the USGS 3DEP. The USGS will match a minimum of 60% of the total cost to collect lidar data through their procurement process. The Montana State Library will receive the resulting data which will be made available through MSL's existing data management systems.

Objectives and Measurable Outcomes

The purpose of this project is to increase Lidar data collection in Montana from 30% to 100% statewide coverage. As a result of the COVID-19 pandemic, capital and infrastructure projects were put on hold. With investment through ARPA targeted to support projects including water and sewer systems and broadband deployment, rapid acquisition of lidar data will speed site selection, permitting, and other infrastructure planning requirements. Ensuring infrastructure projects are shovel-ready puts people to work and helps Montana recover more quickly from the COVID-19 pandemic. The National Enhanced Elevation Assessment (revised in 2012) conservatively estimated a \$13M annual benefit to Montana from complete statewide lidar mapping.* Dewberry, NATIONAL ENHANCED ELEVATION ASSESSMENT FINAL REPORT, 2012, <https://www.dewberry.com/services/geospatial-mapping-and-survey/national-enhanced-elevation-assessment-final-report>.