



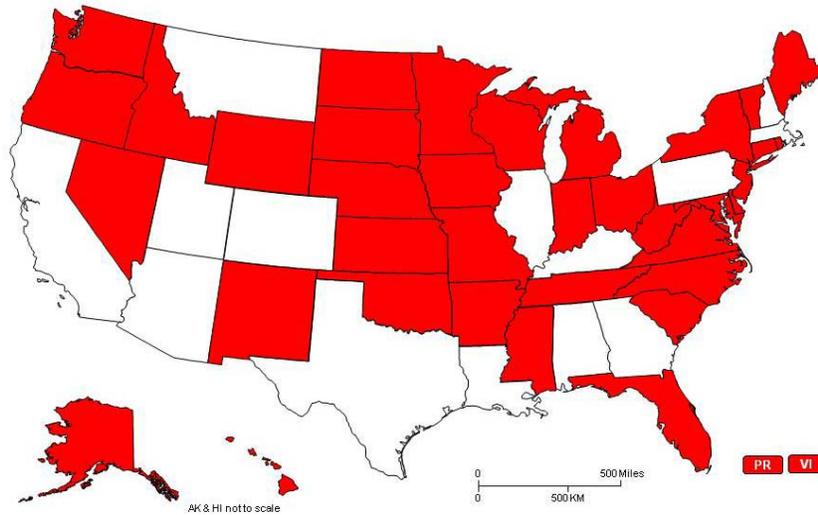
State and Local Government Perspective on Development and Use of LiDAR Data

State and local governments have funded development of LiDAR data to varying technical and accuracy standards for approximately 10 years. Their applications for LiDAR data often mirror those of Federal agencies, but local governments, in particular, have many additional business requirements for large scale data that is typically collected at lower altitudes with greater densities. We are only now beginning to accurately assess the technical requirements for LiDAR data in relation to state and local government business requirements due to the experiences gained over the past 10 years in using LiDAR data. The following table provides examples of how state and local governments are using LiDAR data.

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| Urban Planning | Map Building Footprints |
| | Identify Building Heights |
| | Determine Lines of Sight |
| | Site Planning for Rezoning |
| | Site Design |
| Hydraulic and Hydrologic Modeling | Stream Channel Determination |
| | Identification of Watershed Boundaries |
| | Floodplain Determinations |
| | Modeling Directional Flow of Water |
| | Determining Impervious Surfaces |
| | Storm Water Design and Analysis |
| | Risk Analysis |
| | Determine Landowner Assessments for Offsets |
| Monitor Dams and Reservoirs | |
| Geology | Determine Morphology |
| | Assess Landslides and Potential for Landslides |
| | Identify Faults |
| | Map and Monitor Volcanoes |
| | Mineral Identification and Extraction |
| | Monitoring Mining Activities |
| Forestry, Fisheries & Wildlife | Tree Species Identification |
| | Vegetation Characterization |
| | Tree Height Measurements |

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| | Timber Volume Calculations |
| | Identifying Terrain Under Canopies |
| | Urban Forestry Analysis |
| | Determining Carbon Sequestration |
| | Biomass Calculations |
| | Habitat Assessments |
| | Improve Understanding of Connectivity Issues |
| Emergency Management | Forest Fuels Availability |
| | Slope Analysis for Fire Modeling |
| | Smoke and Chemical Plume Analysis |
| | Improving Applications of Oblique Imagery |
| | Risk Analysis |
| | Wildland Fire Assessment |
| Mapping and General | Reduce Costs for Orthophoto Production |
| | 3D Modeling for Economic Development |
| | Terrain Modeling |
| Engineering | Site Planning |
| | Road Construction |
| | Cut and Fill Calculations |
| | Slope Mapping |
| Coastal Management | Dune Monitoring |
| | Coastal Inundation |
| | Land Subsidence |
| | Sea Level Rise |
| | Slope Stability Issues |
| | Beachfront Management |
| | Risk Analysis |
| | Tsunami and Hurricane Inundation Mapping |
| | Near Shore Bathymetry and Benthic Mapping |

In January 2010, the National States Geographic Information Council conducted an informal survey of the states to characterize the extent of existing LiDAR data collection efforts and the types of products that are required to meet state needs. Forty-one people from thirty-seven states (see map below), Puerto Rico and the US Virgin Islands responded to this survey.



Eighty-five percent (85%) indicated that they would very likely (21%) or possibly (64%) partner with a national program to collect LiDAR products with a 15 cm vertical accuracy that would allow the generation of 2' elevation contour lines. Thirty-three percent (33%) of these respondents indicated that such a program would meet between 61% and 80% of their state business requirements, and fifty-five percent (55%) indicated that such a program would meet between 81 and 100% of their state business requirements. When asked if they would be likely to partner on a more expensive program to produce LiDAR products with a 9 cm vertical accuracy that would allow the generation of 1' contour lines, only forty-two percent (42%) said that it was possible (34%) or very likely (8%). However, this group indicated that the improved specification would meet a larger portion of their state business needs.

Eighty-nine percent (89%) of the responding states have collected LiDAR data over an area of approximately 365,000 miles² or the size of the states of Texas and Oregon combined. This data has been collected over the past 9 years. Eighty-nine percent (89%) of the respondents indicated that they plan to acquire another 184,000 miles² (about 10% larger than the State of California) of LiDAR data in the next three years.

When asked about the funding sources that they have, or plan to use to fund LiDAR data acquisition, the States provided the following information. The percentages total more than 100%, because data partnerships usually involve funding from multiple sources.

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| State General Funds | 32% |
| State Special Funds | 51% |
| State Capital Funds | 5% |
| Federal Grant Funds | 76% |

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| Coastal Zone Management Funds | 28% |
| Other Federal Source Funds | 62% |
| Partnership Funds from Local Government | 51% |
| Private Sector Funds (Including Utilities) | 24% |

In order for a national program to provide the maximum benefit to state and local governments, it must include options to “buy-up” the Federal specification (base) products to meet more stringent state and local government business requirements. By doing this, there will be a greater number of partnership opportunities in the future. Base products produced to meet Federal technical specifications should be acquired at the highest density feasible, because they will 1) meet a larger number of Federal business needs, and 2) result in a lower cost for state and local government buy-ups to encourage their participation and expand the extent of coverage using non-Federal funds.