

PRE-PROPOSAL

USGS Broad Agency Announcement for 3D Elevation Program

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Southeastern Wisconsin 2015 Regional Lidar and Elevation Data Project

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Executive Summary:

The team of SEWRPC and Quantum Spatial will partner with five counties to acquire lidar and elevation data for an area of 2,087 square miles covering the most urbanized region of Wisconsin. SEWRPC will provide administrative and management guidance for the project, while Quantum Spatial, an experienced geospatial services provider, will serve as technical lead agency in the collection and preparation of lidar and derived elevation data sets. The project will result in the preparation of all deliverable products as specified by the USGS *Lidar Base Specification Version 1.0* and to the current definition of USGS Quality Level 2 (QL2). Total cost for this project is \$594,795, for which the project team is requesting a 50 percent grant award for assistance in completion of this work effort. The Southeastern Wisconsin 2015 Regional Lidar and Elevation Data Project is scheduled to begin in January 2015, with all deliverable products to be provided to the participating counties and to the USGS between September 15 and December 20, 2015.

Southeastern Wisconsin 2015 Regional Lidar and Elevation Data Project

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) and Quantum Spatial, Inc. (QSI) will join in partnership to conduct a major lidar collection and elevation data preparation project in Southeastern Wisconsin. The project will cover the five counties of Milwaukee, Ozaukee, Walworth, Washington, and Waukesha in the most populous and developed region of Wisconsin. Lidar data collection and preparation will be performed for a total area of approximately 2,087 square miles, including the 100-meter buffer surrounding the main project area (Exhibit A). The project will result in the preparation of a number of elevation data sets, including raw and classified lidar point cloud data sets, bare-earth surface or raster DEM data sets, hydro-flattening breaklines, and various supporting metadata documentation.

The team of SEWRPC and QSI will collaborate with the appointed Land Information Officers in each of the five counties to complete this project. SEWRPC is the Federally-recognized Metropolitan Planning Organization for the Southeastern Wisconsin Region, and has assisted its counties and local governments in the collection and preparation of conventional topographic mapping for over 50 years, and digital elevation mapping for more than 25 years. The SEWRPC staff will bring project management experience to this joint effort, and will serve as contract administrator and liaison to the County Land Information Officers. QSI (formerly AeroMetric, Inc.) is a leading geospatial products and services provider with a long history of successful completion of projects both in Southeastern Wisconsin and nationally. The firm has successfully completed a number of lidar-related projects under Geospatial Products and Services Contracts (GPSC) with the Federal government. The QSI staff will provide technical expertise in lidar data collection and derived elevation data processing for this project. QSI will collect and process lidar data sets, prepare bare-earth DEMs and derived breaklines, perform quality control procedures on the deliverable digital products, and develop the required metadata.

Project Cost

The total cost for this project, consisting of lidar data collection, lidar processing, preparation of bare-earth raster DEMs, hydro-enforcing breaklines, and metadata for five counties, is \$594,795. The project team of SEWRPC and QSI, on behalf of the five cooperating counties, is requesting a 50 percent grant award—the amount of \$297,397—for assistance in completion of this project.

Project Deliverables

The project will result in the collection and preparation of all deliverable products with acceptance criteria as specified in the USGS *Lidar Base Specification Version 1.0*. The products to be delivered include four digital data sets: 1) raw point cloud; 2) classified point cloud; 3) bare-earth surface [raster DEM]; and 4) hydro-flattening breaklines. Complete metadata and reports will also be delivered. The lidar data and derived products will meet the current definition of Quality Level 2 (QL2) as specified by the USGS.

Project Schedule

The schedule for the Southeastern Wisconsin 2015 Lidar and Elevation Data Project is as follows:

January 2015	Lidar project begins; flight planning and resource allocation for lidar data acquisition initiated and completed within four weeks
March 15 - May 15, 2015	Lidar data collection initiated and completed within eight weeks, weather permitting; lidar processing and derived elevation data preparation begins; quality control of digital files and field survey work started
September 15 - December 20, 2015	Preparation and review of lidar and elevation files completed; all deliverable products provided by SEWRPC to Counties and USGS

Qualifications

Project team member QSI, as the technical lead agency in this partnership, has performed numerous lidar and elevation data projects in the U.S. and North America. QSI (as AeroMetric) has provided professional photogrammetric mapping and GIS services to the USGS since 1999. Recent major projects completed by QSI for the USGS include multi-resolution, multi-spectral imagery and lidar acquisition projects in New Hampshire and Rhode Island, and a multi-state project in New England that acquired and processed over 8,000 square miles of lidar and derived products. Deliverables for these projects included raw and classified lidar in LAS format, bare-earth DEM, and metadata, with all products conforming to USGS Lidar Base Specifications.

Data Acquisition Specifications

The Southeastern Wisconsin 2015 Regional Lidar and Elevation Data Project, under the technical guidance of QSI and with the administrative assistance of SEWRPC, will result in the preparation of deliverable products that meet or exceed all minimum specifications as outlined in the USGS *Lidar Base Specification Version 1.0*, and deliverable products that meet the current definition of Quality Level 2 (QL2) as specified by the USGS.

Unrestricted Data

The deliverable products for the Southeastern Wisconsin 2015 Regional Lidar and Elevation Data Project will be provided to the USGS without any restrictions whatsoever on use of the data.
