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 <abstract>Provide high density LiDAR elevation data map of LCRA Lakes region, TX. Provide Bare Earth DEM (vegetation removal) of LCRA Lakes region, TX.</abstract>

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 This LIDAR operation was designed to provide a high density set of masspoints within the defined areas. The data sets are suitable for the development of contours for use in hydraulic/hydrologic model development, and for assessing environmental impacts.Typical uses for the data set include: FEMA Flood Plain Map Modernization. DFIRM map updates. Watersheds and other hydro studies per FEMA specifications. County Mapping projects which include several uses, in addition to Flood mitigation assessment. Mapping projects that include accuracy verification, reporting and meta data.

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Using a LH Systems ALS50 Light Detection And Ranging (LiDAR) system, 101 flight lines of standard density (1.4 meter ground sample distance) data were collected over areas in LCRA Lakes region,TX (approximately 487 square miles). Multiple returns were recorded for each laser pulse along with an intensity value for each return. The data acquisition occurred in 5 missions between December 31, 2006 , and January 07, 2007. During the LIDAR campaign, the Sanborn field crew conducted a GPS field survey to establish final coordinates of the ground base stations for final processing of the base-remote GPS solutions.</procdesc><date Sync="TRUE">20070803</date><time Sync="TRUE">08251200</time><procdate>September 2007</procdate></procstep><procstep><procdesc>Airborne GPS Processing:

Airborne GPS data was differentially processed and integrated with the post processed IMU data to derive a smoothed best estimate of trajectory (SBET). The SBET was used to reduce the LiDAR slant range measurements to a raw reflective surface for each flight line. The overlap between flight lines was removed to provide a homogeneous coverage, and the coverage was classified to extract a bare earth digital elevation model (DEM).

Airborne GPS is differentially processed using the GrafNAV V7.50 software by Waypoint Consulting of Calgary, Alberta, Canada. The PDOP and distance separation is as follows:

IMU data is processed using the PosPac V4.2 software by Applanix Corporation of Richmond Hill, Ontario, Canada.

The reflective surface is derived using the ALS Post Processor software by Leica Geosystems GIS &amp; Mapping Division of Atlanta, Georgia.

The classification and quality control (QC) of LiDAR data is carried out using TerraScan software by Terrasolid Limited of Helinski, Finland.</procdesc><procdate>September 2007</procdate></procstep><procstep><procdesc>IMU data Processing:

IMU data provides information concerning roll, pitch and yaw of collection platform during collection event. IMU information allows the pulse vector to be properly placed in 3D space allowing the distance from the aircraft reference point to be properly positioned on the elevation model surface. IMU data is processed using the PosPac V4.2 software by Applanix Corporation of Richmond Hill, Ontario, Canada.</procdesc><procdate>September 2007</procdate></procstep><procstep><procdesc>Reflective Surface Generation:

The reflective surface is derived using the ALS Post Processor software by Leica Geosystems GIS &amp; Mapping Division of Atlanta, Georgia.</procdesc><procdate>September 2007</procdate></procstep><procstep><procdesc>LIDAR Point Classification

The classification and quality control (QC) of LiDAR data is carried out using TerraScan software by Terrasolid Limited of Helinski, Finland.</procdesc><procdate>September 2007</procdate></procstep><procstep><procdesc>Output LAS Files

The product output of LiDAR data is carried out using TerraScan software by Terrasolid Limited of Helinski, Finland. LAS Binary, ascii xyz, and intensity images were created.

The USGS DEM product was created by exporting ArcINFO ascii grid format from Terrascan and further processing was performed with ArcGIS.

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