LIDAR -- LIght Detection And Ranging -- Data

Airborne LIDAR technology provides very accurate measurement of elevation over wide areas. The current digital elevation data that is generally available for RI is +/- 5 foot accurate in the vertical and consists of an elevation every 100 feet (approx). LIDAR provides cm-level accuracy in the vertical and spatial resolutions down to a few feet.

LIDAR data for a thin band along the south shore of RI are currently available from the **NOAA Coastal Services Center** -- http://maps.csc.noaa.gov/TCM/

LIDAR missions underway include:

RI Emergency Management is using LIDAR to develop better flood zone maps. Carissa Lord (Map Modernization Planner, RIEMA) provided the following info on that project:

Over the next 3 years, the entire state of Rhode Island will have new digital flood insurance rate maps (DFIRMs). FEMA will be mapping areas on a county-wide basis. The digital data for the counties will be available after the final maps become effective. Below is an estimate timeline by county:

Providence: preliminary maps available 2007
Washington: preliminary maps available 2008
Kent: preliminary maps available 2008
Newport: preliminary maps after 2008
Bristol: Final DFIRMS effective Nov. 16th, 2006. Scoping after 2008

All counties except Bristol have been scoped to determine data needs and risks. FEMA determined that the current data in Bristol County was accurate to create DFIRMS for 2006. Further analysis will occur after 2008.

FEMA is using the 2004 1:5000 scale digital orthophotography with 2' pixel resolution, georegistered in the RI State Plan Coordinate System in units of US survey feet provided by RIGIS. This data will serve as the basemap until further studies warrant new data.

We have asked the contractor performing this work (Watershed Concepts) for a few technical specifications of the LIDAR data behind the DFIRMs and are awaiting a response from them

RI Army National Guard is developing LIDAR data for some of the larger state management areas in RI (Arcadia, Buck Hill, Big River, and G. Washington). These data will support RIARNG training operations. We anticipate that the data will be within 10 cm vertical accuracy with a spatial resolution of approximately 1 m. Two datasets can be extracted from the LIDAR data stream: first return elevations (these are typically tree and shrub canopies) and bare earth (without interference from vegetation). Data will hopefully be publicly available but access details are not available at the present moment.