

# Rice County's LiDAR and Pictometry Data

SE GIS User Group Meeting

July 24, 2008

# Overview

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- The LiDAR RFP
- Choosing a LiDAR Vendor
- The LiDAR Contract
- LiDAR Data Received
- Use of the Data
- Future Uses
- LiDAR Information and Tools

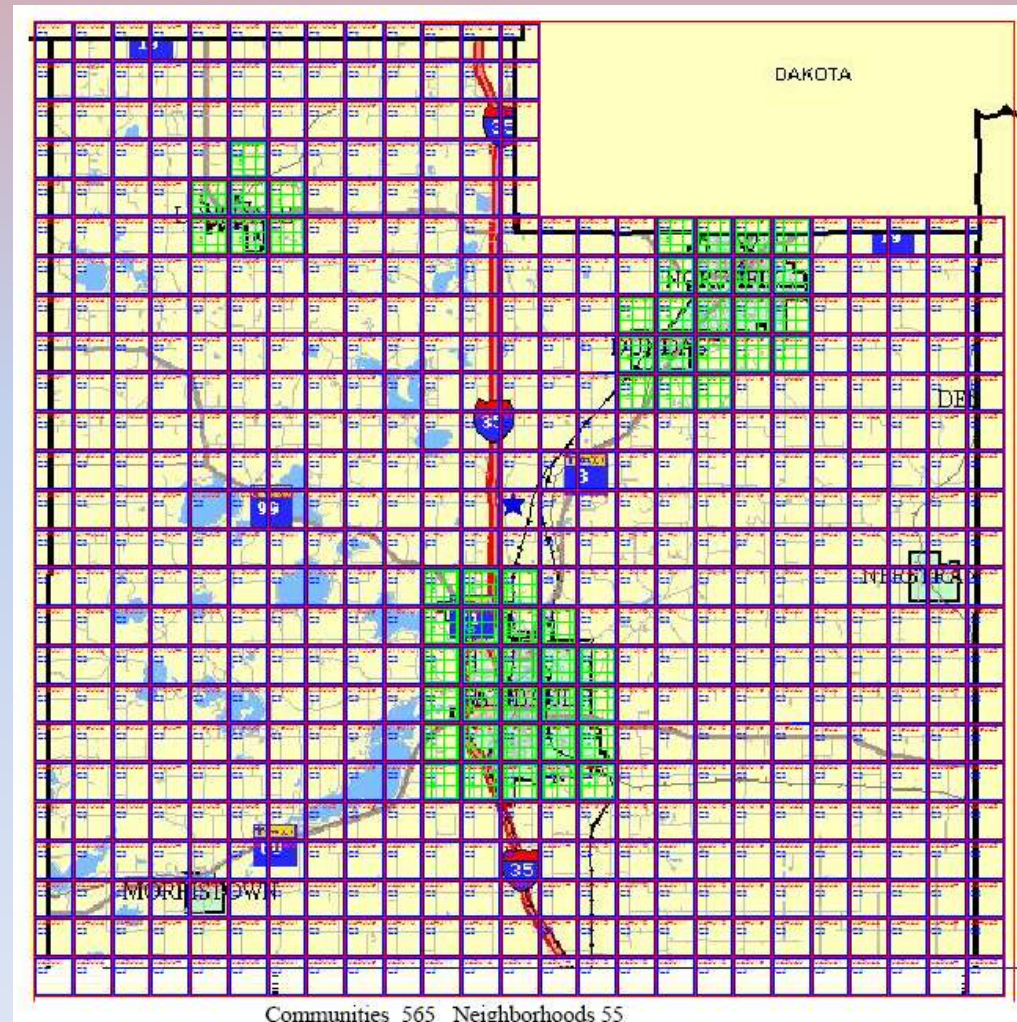


# The Funds

- Funds were available from the Recorder's Compliance Fund (*MN Statute 357.182 Subdivision 7*)
- Went to County Board with a 10 year imagery/LiDAR plan
- Board adopted the plan to purchase LiDAR and Pictometry in 2007
- Then to alternate purchasing Pictometry and Orthophotography every 2 years contingent upon funding

# Pictometry

- A contract for \$41,390 was approved on March 13, 2007
- 55 Neighborhoods (green)
- 565 Communities (blue outline)
- Week of April 22 plane captured photography
- Delivered June 2007
- License allows unlimited installation of software on county computers
- Administrator, End User and Advanced Training
- Installed EFS Software on 55 County Computers in Oct and Nov
- 75 GB Data
- Bird's Eye View on Beacon





Rice County Courthouse

# The LiDAR RFP

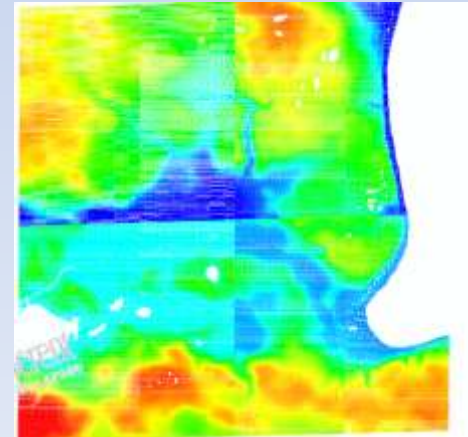
- Used examples from the DNR's Red River Project (<http://www.gis.state.mn.us/committee/elevation/>) and RFP from Stearns County
- Agreement with MNDOT- quality control
- Highway and Surveyor- Control
- A Request for Proposal was sent out in March 2007.
- We received seven responses.

# Choosing a LiDAR Vendor

- A committee of Rice County GIS users met and ranked each proposal.
- The categories were:
  - Personnel experience, References, Work with Similar Geographic Areas (40%)
  - Performance Ability (20%)
  - Integration Assessment (20%)
  - Price (10%)
  - Delivery Date (10%)
- Considered the ways to create LiDAR data:
  - Using orthophotography
  - Synthetic
- We recommended the vendor with the most points.
- The County Board approved the recommendation on March 27, 2007.

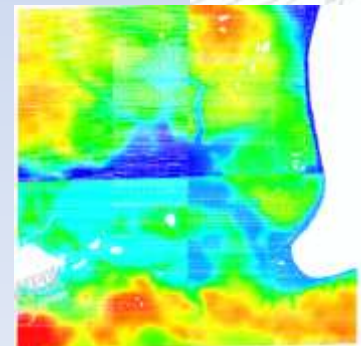
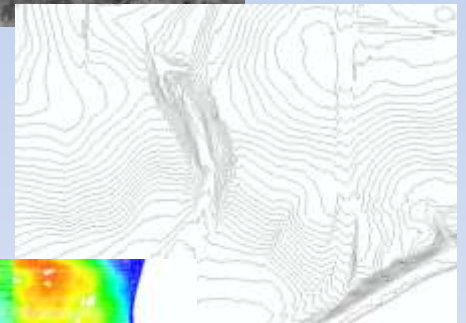
# The LiDAR Contract

- LiDAR
  - The contract with Aero-Metric: \$279,840
    - \$211,340 for LiDAR data, two-foot contours
    - \$68,500 for six-inch black and white, digital orthophotography
  - Project started mid-April 2007
  - Completion by December 31, 2007

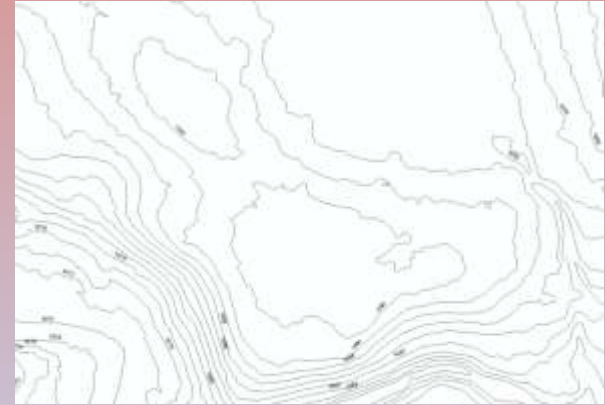


# LiDAR Data Received

- Approximately 500 GB Data (516 Square Miles)
- Six- Inch Digital Black and White Orthophotos
  - 75 GB
  - Tif files for each quarter section
  - MrSID files for Townships and Entire County
- Two-Foot Contour Data
  - 2 GB
  - By Section in shapefile and AutoCAD format
- LiDAR Data
  - First Return (222 GB)
  - Bald Earth (197 GB)
    - LAS, ASCII and Shapefile for both



# Use of the Data



- Two foot contours

- FEMA floodplain mapping
- Help determine placement of silt fences
- Drainage studies, road design, earthwork computations, watershed boundary determinations and sizing, bridge design
- Overlay on orthophotography in AutoCAD for display
- Determine drainage areas for sediment control basins, and waterways
- Preliminary layouts of terraces
- Observe runoff flow patterns
- Determine bluff setbacks
- Help with structure and high water elevation determinations
- To show Planning Commission and Board of Adjustment how flat or sloping a site is
- Displayed on GIS Website (<http://beacon.schneidercorp.com/?site=RiceCountyMN>) for reference and public use
- Sold to the public

# Use of the Data

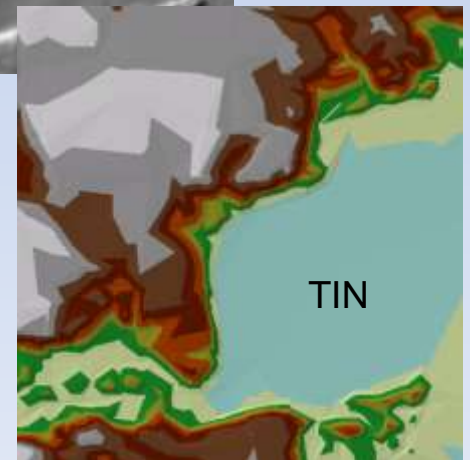
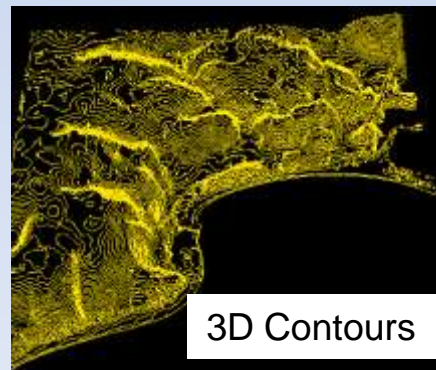
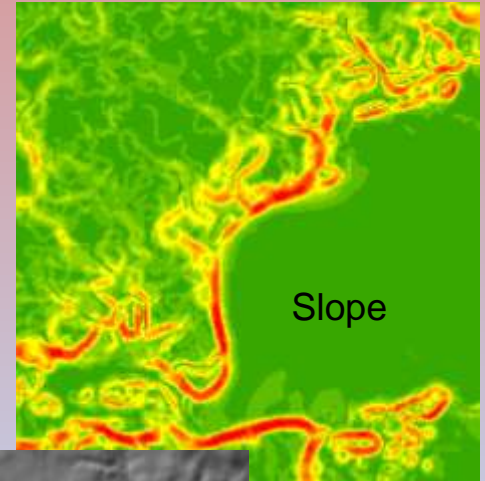
- Pictometry

- See if buildings have been added to a property or removed
- Tell if the land is wooded, tilled, wetland, etc.
- Look for indications of a failing septic systems (dark green, plush growth)
- Analyze County ditches from the office
- Present images of areas in the County to the Planning Commission in PowerPoint presentations
- Plan searches of a property- look at house from different directions, plan staging areas and view property lines
- To do field verifications for buildings, structures, decks and land classifications
- Measure outbuildings and add sketches to Vanguard
- To do checks on land classifications using the area tools and by looking at the imagery (Appraisers)
- Better prepare for field visits by having more specific things to look for (Appraisers)
- Find the location of billboards and cell towers in the County and verification of the parcel they are located on
- Determine which parcels of land were classified as tillable but did not meet the 10 acre tillable land requirement (Department of Revenue requirement)
- Plan during an emergency situation: used during train derailment by Emergency Manager and others to see derailment area, staging areas, and surrounding area (businesses, residential areas, waterways) and determine possible dangers
- Displayed on GIS Website (<http://beacon.schneidercorp.com/?site=RiceCountyMN>) for reference and public use (Bird's Eye View Tool)



# Future Uses

- LiDAR Data:
  - 3-D Models
  - Create Terrain Dataset
  - More Analysis
- Pictometry
  - Change Finder Software
    - Comparison of changes over time
    - Building footprints



# LiDAR Information and Tools

- LiDAR Software Extension- LP360: [www.qcoherent.com](http://www.qcoherent.com)
- LiDAR Distribution: [http://lidar.cr.usgs.gov/LIDAR\\_viewer/](http://lidar.cr.usgs.gov/LIDAR_viewer/)
- MN Governor's Council on Geographic Information:  
<http://www.gis.state.mn.us/committee/elevation/>
- Google Earth and LiDAR:  
[http://www.gearthblog.com/blog/archives/2007/07/visualizing\\_lidar\\_wi.html](http://www.gearthblog.com/blog/archives/2007/07/visualizing_lidar_wi.html)