DIGITAL MAPPING TECHNIQUES 2013

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Golden, CO)

The contents of this document are provisional

See Presentations and Proceedings
from the DMT Meetings (1997-2013)

http://ngmdb.usgs.gov/info/dmt/

Delaware Topographic Maps – Past, Present, and Future

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DELAWARE TOPOGRAPHIC MAPS (PAST)

Topographic maps of Delaware were provided by the U.S. Geological Survey (USGS) and distributed through the Earth Science Information Center which was hosted at the Delaware Geological Survey (DGS). The 1:24,000-scale topographic map series of the 48 conterminous States was officially completed in 1992, and Delaware is the only state that was updated in its entirety at that point.

By the end of the 20th century, USGS topographic maps and associated digital line graph data were considered out-of-date, so the Delaware GIS community began to discuss alternate mapping resources. The Delaware Geographic Data Committee and State Mapping Advisory Committee were both active, and collaboration efforts between the committees resulted in identifying the Delaware Geospatial Data Framework (i.e., base map layers). Data contributions came from USGS layers, state, county and municipal offices. These data layers were considered the most current digital base map layers available for Delaware.

The year 2000 marked the beginning of a new century, and during that year the Delaware Data and Mapping Integration Laboratory (DataMIL), an online web mapping application with crowdsource editing capability, was developed at the University of Delaware through a joint effort between the DGS, Delaware Office of State Planning Coordination, Research and Data Management Services at the University of Delaware, and USGS. DataMIL provided accurate, up-to-date spatial data (including metadata and open map services) for the Delaware Framework and topographic maps. DataMIL was selected as a leading pilot project for The National Map (USGS, 2013a) since several USGS national datasets were also under development at that time, including the Geographic Names Information System, National Hydrography Dataset, National Elevation Dataset, orthoimagery, and land cover. DataMIL received the ESRI Special Achievement in GIS Award in 2002, the USGS John Wesley Powell Award in 2003, and was a forerunner to web mapping applications such as MapQuest, Google Maps, and Bing Maps. The DGS took over management of DataMIL in 2004 because of the agency's interest in Delaware topographic maps.

DELAWARE TOPOGRAPHIC MAPS (2013)

Due to lack of funding support for DataMIL, by 2013 its web mapping service was still using an older and unsupported ArcIMS technology (ESRI, 2013a), and the original hardware it was stored on became increasingly unstable. A decision was made to retire the Delaware DataMIL on June 30, 2013. Although the information served by DataMIL was available through other organizations as WMS map services or for download, the shutdown of the DataMIL map on-demand service was a major loss particularly to the education and environmental consulting communities.

In 2011, The National Geospatial Program of the USGS produced US Topo quadrangles (USGS, 2013b), or digital topographic maps of Delaware. They are created like the legacy 7.5-minute quadrangle maps with the addition of current aerial photography and a plan to be updated on a 3-year cycle. These maps are available for free download in PDF format. Most, if not all, of the Delaware GIS community does not take advantage of this service since the national base map data is not as detailed as the state level data. For example, the US Topo 1998 contours are displayed at 10-ft intervals, and Delaware contour datasets are 2-ft intervals which were generated from 2005 and 2007 LiDAR data. Most of the state of Delaware lies in the Atlantic Coastal Plain, and 10-ft contours do not provide enough detailed information. Also, Delaware's most recent aerial photography was flown in 2012 and provides 0.25 meter resolution, whereas US Topo provides NAIP imagery of Delaware from 2009 at 1 meter resolution. Additional local datasets that are not included on US Topo maps are unimproved access roads, trails, boundary monuments, state park boundaries, and school locations. These features are extremely helpful for geologic and other field work.

The Delaware Office of State Planning Coordination and Department of Technology and Information continue to pursue a GIS governance structure for Delaware, and discussions are ongoing with ESRI to develop an enterprise GIS system for the state of Delaware.

DELAWARE TOPOGRAPHIC MAPS (FUTURE)

The DGS has accepted responsibility for being the data steward for Delaware elevation data and will also consider cost-effective alternatives to create and distribute detailed topographic maps for Delaware. Since DGS is part of the University of Delaware (UD), there is an opportunity to utilize the UD ArcGIS Online Subscription (ESRI, 2013b) and ArcGIS Server license (ESRI, 2013c). Ideally, the agency would like to bring back the crowdsource editing capability along with a map viewer application to allow users to create customized, area-specific topographic maps.

REFERENCES

ESRI, 2013a, ArcIMS, accessed July 1, 2013, at *http://www.esri.com/software/arcgis/arcims*.

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ESRI, 2013c, ArcGIS for Server, accessed July 1, 2013, at *http://www.esri.com/software/arcgis/arcgisserver*.

U.S. Geological Survey (USGS), 2013a, The National Map, accessed July 1, 2013, at *http://nationalmap.gov*.

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Dela-where?


Philadelphia
Pennsylvania
Maryland
PIEDMONT
COASTAL PLAIN
New Jersey
Baltimore
Fall Zone
Chesapeake Bay
Delaware
Delaware Bay
Washington DC
Atlantic Ocean

Delaware Topographic Maps – Past

- Earth Science Information Center (ESIC)
- Delaware Geological Survey distributed USGS topographic maps (paper)
- 1:24,000-scale USGS topo maps of DE were last updated and published in 1992 and 1993

Delaware Topographic Maps – Past

- By the year 2000, USGS topo maps and associated DLGs were out of date
- Delaware DataMIL released in 2002
  - Pilot project for USGS National Map
  - Delaware Spatial Data Framework layers and topographic maps
  - Won the ESRI Special Achievement in GIS Award (2002) and the John Wesley Powell Award (2003)

Delaware Topographic Maps – Present

- Delaware DataMIL
  - Topographic Maps of Delaware http://datamil.delaware.gov
- USGS
  - US Topo maps
    - http://nationalmap.gov/ustopo
      - roads, hydrography, contours, boundaries, GNIS names, NAIP imagery

Delaware Topographic Maps – Present

- ~~Delaware DataMIL~~

  ~~Topographic Maps of Delaware http://datamil.delaware.gov~~

  not available after June 30, 2013

- USGS

  US Topo maps

  http://nationalmap.gov/ustopo

  roads, hydrography, contours, boundaries, GNIS names, NAIP imagery

Delaware Topographic Maps – Present

Elevation

US Topo contours – 10 ft (1998)

Delaware contours – 2 ft (2007)

Imagery

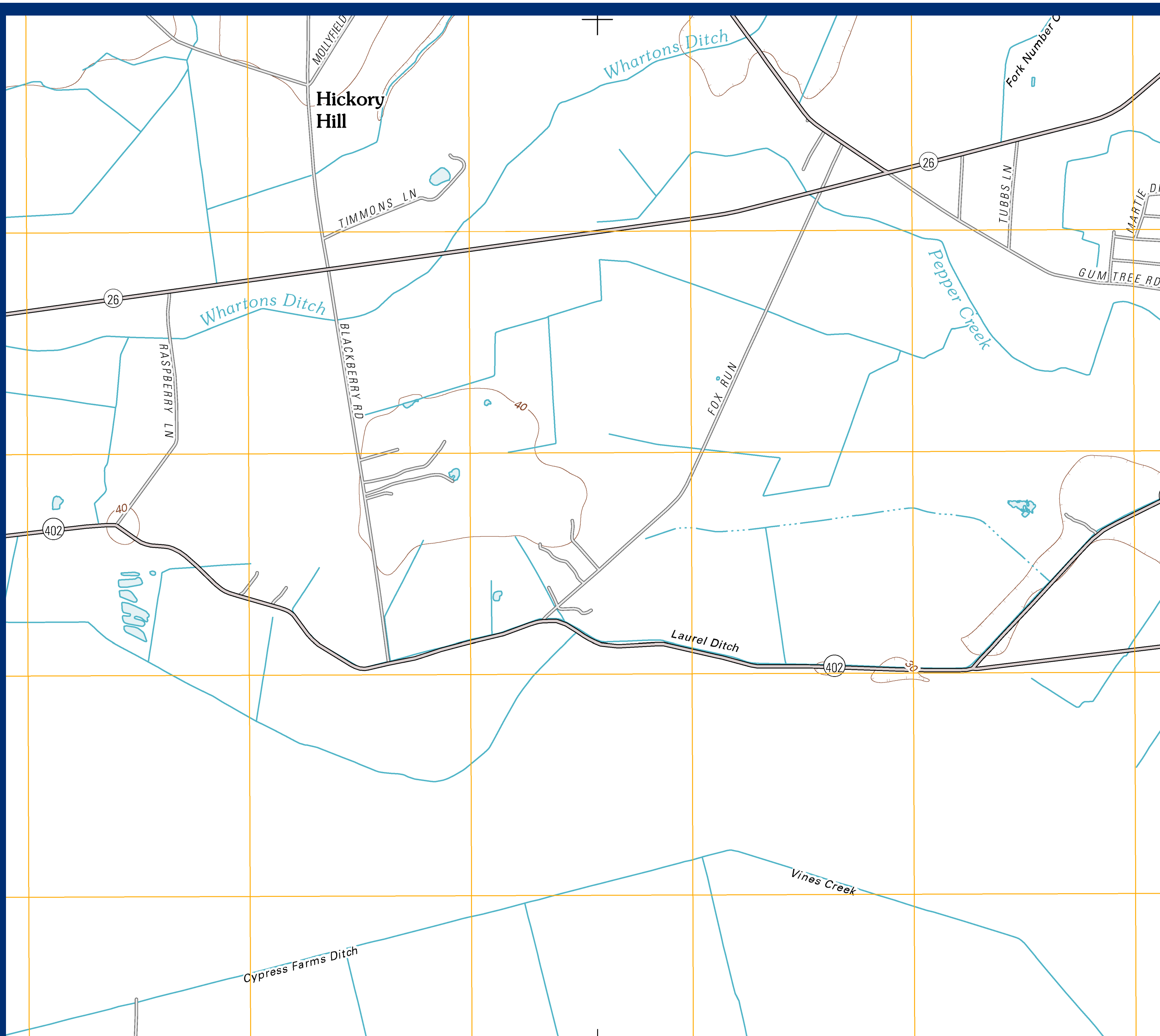
US Topo - NAIP imagery – 1 m (2009)

Delaware imagery – 0.25 m (2012)

Other topo map data layers

US Topo layers- roads, hydrography, boundaries, GNIS names (1972-2010)

Delaware layers - boundary monuments, schools, state land boundaries (2012)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MOLLYFIELD
Whartons Ditch
Whartons Ditch
TIMMONS LN
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TUBBS LN
MARTIE DR
GUM TREE RD
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FOX RUN
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Laurel Ditch
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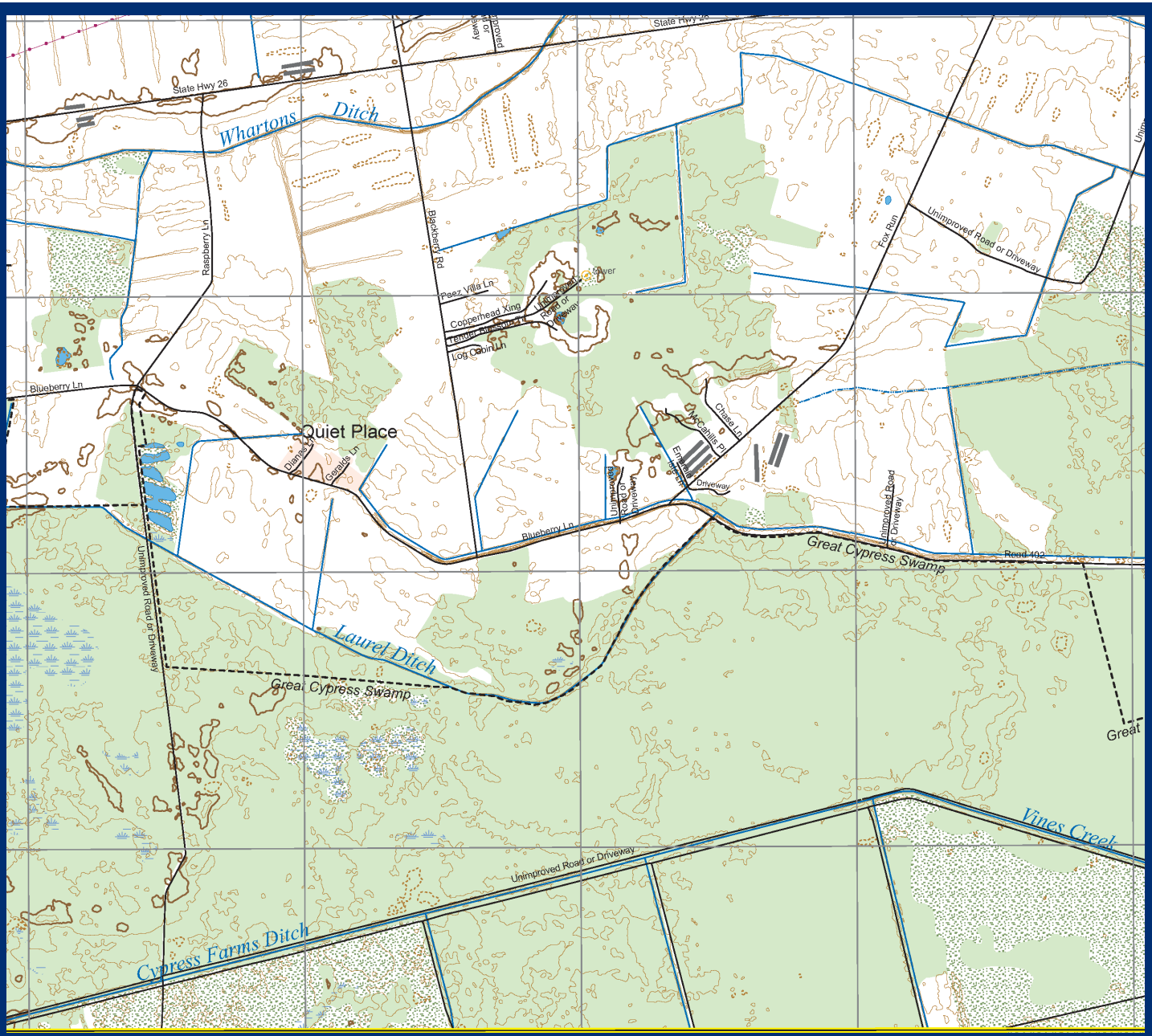
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Whartons Ditch
Raspberry Ln
Blackberry Rd
Peez Villa Ln
Copperhead Xing
Log Cabin Ln
Blueberry Ln
Quiet Place
Diane Ct
Gerald's Ln
Fox Run
Unimproved Road or Driveway
Chase Ln
Driveway
Great Cypress Swamp
Road 402
Laurel Ditch
Great Cypress Swamp
Vines Creek
Unimproved Road or Driveway
Cypress Farms Ditch

Delaware Topographic Maps – Future

- Current plan
  - Rebuild DataMIL as a web-based, topographic map creating and viewing application
  - Based on ArcGIS online technology
  - Web-enabled map services and download capabilities
  - Crowdsource editing capabilities with monitored edit approvals