

Facilitating the sharing and coordinated use of spatially referenced data in Delaware

Meeting Summary
Quarterly DGDC/SMAC Meeting
9:00 a.m.,
November 18, 2005
House Hearing Room
Legislative Hall
Dover, DE

Attendance List:

Mike Mahaffie	State Planning Coord.
Sandy Schenck.....	DGS
Miriam Pomilio.....	DGS
Brad Strittmatter	DGS
Paul Sample	Legislative Council
Deborah Sullivan	DNREC
Brian Smith	GeoDecisions
Mollie Raley	DeIDOT
Lillian Wang	DGS
George Yocher	Div. of Public Health
John Laznik	UD/CADSR
Rick Sherwood	DEMA
Tom Wuerzer.....	Town of Smyrna
Debbie Pfeil	Town of Georgetown
Roger Barlow	USGS
Mike Townshend	DNREC
Jim Strickland	DEMA
Beth Uczynski.....	Cadapault
Kevin Hickman.....	Dover/Kent MPO
Tripp Fischer.....	DNREC
Janet Lardner	DBF
Tom Peralta	New Castle Co.
John Callahan.....	UD/RDMS
Mary Harper.....	HCA
Chad Lauderbaugh.....	GeoDecisions
Megan Dean	Sussex Co.
Michael Powell.....	DNREC
Noemi Mendez	Census Bureau
Glenn Gladders	DDA/Forest Service
Shelly Ide	DSHA
Kim Cloud	DTI
Peggy Bacon	DeIDOT
John Taber	New Castle Co.
Jeff Lee	TetraTech
Lori Schnick	UD/WRA
Mark Nardi	USGS

Welcome and Introductions

Mike Mahaffie began the meeting at approximately 9:05 a.m. with a round of introductions.

Information Updates

GIS Coordination Legislation

Mike Mahaffie gave a brief outline update on Senate Bill 186, which would set up a GIS Coordination Council and formalize the DGDC. The Bill has passed the State Senate and is before a committee of the State House. Mike noted that he expects to apply for a grant from the FGDC to support a major strategic planning effort in the spring and that he hopes to tie that effort to the formation of the new Council. Sandy Schenck added that he hopes to apply for a grant to support the effort to add historic aerial photography to the DataMIL.

2006 GIS Conference

Mike Mahaffie and other members of the Conference Planning Committee gave an update on planning for the conference, which is set for June 1, 2006 at Clayton Hall on the University of Delaware Campus, in Newark. The Conference theme will be "Patterns of Change" and calls for

presentations and posters are expected to go out in the near future. There are plans for a pre-conference social, along with the usual pre-conference workshops and a post conference field experience. Speakers from the National Geographic Society have been invited. The Conference web site is at <http://www.degis.org>.

Annual NSGIC Conference

Mike Mahaffie and Sandy Schenck reported on their attendance at the annual conference of the National States Geographic Information Council (NSGIC). Mike and Sandy shared a handout on the NSGIC "Imagery for the Nation" proposal, which would call for federal funding of a basic, nationwide aerial imagery program that could be enhanced by state and local governments but which would provide at least a basis of regular imagery updates across the nation. There were also interesting presentations from members of the URISA GISCorps, which provides GIS volunteers to help in disaster response. There were speakers at the NSGIC meeting who assisted with recovery efforts following the hurricanes on the US Gulf Coast. Mike Mahaffie has been elected to the NSGIC Board of Trustees.

DataMIL

Miriam Pomilio gave an update on progress with the Delaware DataMIL (attached). Statistics for May through October show that the DataMIL produced 274,322 maps. There have been many enhancements to the site including updating the Table of Contents. There have also been data enhancements, including adding historic aerial photography to the Map Lab and adding school District boundaries and school sites. The I-Team has approved the National Hydrography data set (NHD) as the hydro portion of the Delaware Framework. It will be added to the DataMIL as soon as Metadata is completed. The DataMIL team is working on several future technology upgrades and hopes to implement a print-on-demand system that the USGS is working on.

Other Items of Interest

Mike Townshend noted that there will be a two-day ESRI Developers' Summit in Palm Springs.

Ideas for a Statewide Geocoder

Brian Smith, of GeoDecisions, gave a presentation (attached) on possibilities for a statewide geocoder system. Brian has developed a geocoder system for DelDOT and explained several factors about such a system, including the differences between geocoding and geocoding. He explained the US National Grid and some of its uses. Brian also gave a brief description of what a web-service is and how it might tie into the idea of a geocoder.

There was general discussion of the notion of a geocoder service which raised questions about whether or not a statewide system is needed, who should host it, and what data should it use.

A task force/working group was proposed to explore this issue and report back to the DGDC in the New Year with ideas. Members will include Mike Townshend, John Laznik, Don Berry, Kim Cloud, George Yocher, Rick Sherwood, and Brian Smith.

Metadata Clearinghouse Update

John Callahan announced that the research and data Management Service Office plans to revamp the Delaware Metadata Clearinghouse over the next several months and plans to make it easier to create and find metadata. He urged all to make sure to continue to create and publish metadata. He asked for comments and feedback on ways to improve the Clearinghouse.

Review of the Delaware Spatial Data Framework

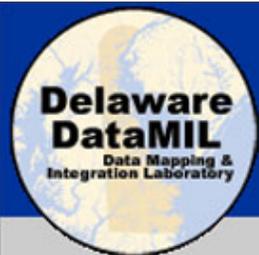
Mike Mahaffie represented a review (attached) of the Delaware Spatial Data Framework, looking at how it began, what it has developed into, and where it is going.

There was a general discussion of the Delaware Framework. John Callahan suggested that it was time to move away from the DGDC focus on “Framework” and open up the discussion to include other data sets. Roger Barlow pointed out that there still needs to be a standard frame of reference within which data sets will fit. It was suggested that the “Framework” be described as the digital base map and that the discussion be broadened to a larger notion of Framework data, as some international standards organizations have begun to do.

Mike Mahaffie pointed out that whatever spectrum of data sets are considered framework, base map, or other notation, it is vital that wherever possible a Data Steward be identified and agreed on for major data sets, to avoid duplication of effort and “dueling” data sets.

It was generally agreed that the discussion should continue. Mike Mahaffie suggested that the Strategic Planning effort envision for the GIS Coordination Council should focus on this sort of question and should use the DGDC as a major focus group.

The meeting adjourned at approximately 11:30 a.m.



DataMIL Update DGDC Meeting

November 18, 2005



Web Statistics

May 1, 2005 – October 31, 2005

Number of Page Hits

- Portal Page (Front Page): **96,730**
- Map Production Laboratory: **274,322**
- WMS Connector to 2002 Aerial Photography: **18,021**
- Search & Results: **6,000**

Downloads

- Total Maps created: **274,322**
- Total Maps Downloaded (images): **584**
- Data Extracts (zips): **1,254**



Enhancements to DataMIL

Completed and Implemented

Web Interface Enhancements

- Redesigned the Portal Pages to improve site navigation
- Fixed GNIS search tool to zoom to results
- Created a News section for easy updates
- Fixed the Extract Data Function and modified it to include the metadata in the extracts
- Enhanced the Image Download function by adding the functionality to zip all files, including the world file, for easier download
- Created a watermark for downloaded images



Enhancements to DataMIL Completed and Implemented

Data Enhancements

- Added historic aerial photography to Map Production Lab (1937, 1992, 1997)
- Update Municipal Boundaries data layer monthly
- Update County Tax Parcels quarterly
- Updated DelDOT Roads layer
- Added School District Boundaries
- Upgraded GNIS labeling through addition of: Public & Private School Names.
- Changed scale dependency for viewing Aerial Photography to enhance Map Lab performance
- Updated Table of Contents to enhance organization and location of data layers



Enhancements to DataMIL Completed and Awaiting Implementation

Web Enhancements

- Created ArcMAP Image Service for “Create A Map” functionality. Awaiting deployment due to issues with service on DTI Production servers.
- Created a Boundary Monument Database for SHPO to maintain the Boundary Monument layer. Awaiting deployment due to issues with DTI Production Environment configuration with Oracle database.
- New Contact Us Procedure for error reporting partially built. On hold until DTI can resolve access issues to Oracle server.
- ArcIMS 9.1 Upgrade from May 2005 to be deployed on Production Environment by DTI on December 5, 2005.



Enhancements to DataMIL Completed and Awaiting Implementation

Data Enhancements

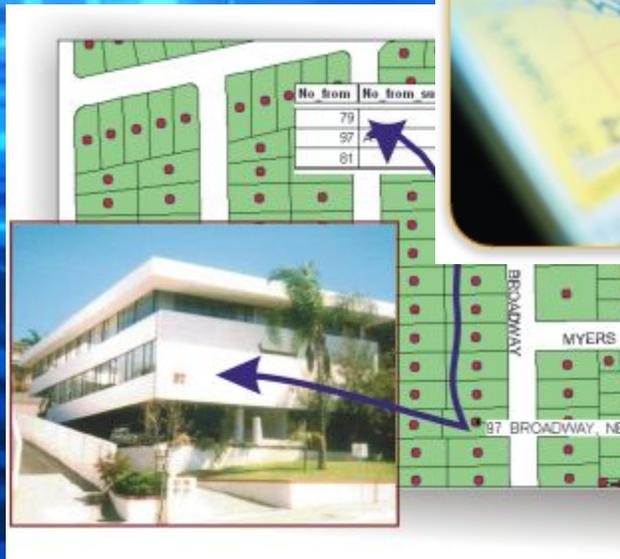
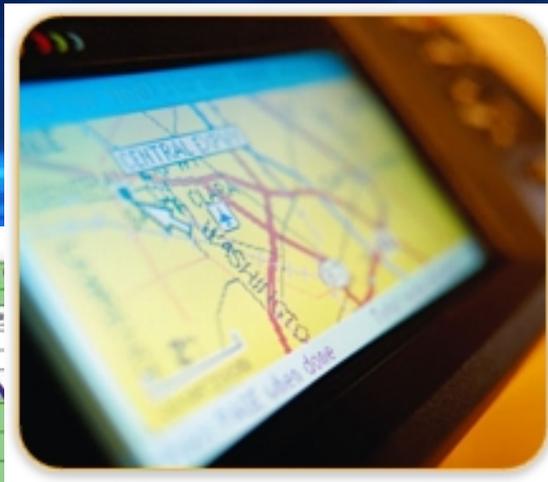
- 1954 Aerial Photography: Georectified. Creating Mosaic of Statewide photography. Anticipate serving by Nov. 23rd.
- NHD approved by I-Team as new Hydrography layer. Service created, awaiting Published Metadata for deployment.
- Community Layers obtained from Counties. Service Created to update community naming from GNIS, awaiting Published Metadata for deployment..



Future Enhancements

- 1961 Aerial Photography being Scanned and Georeferenced.
- Rewrite DataMIL to utilize ArcGIS Server technology.
- Make DataMIL cross browser compatible.
- Enable a “My DataMIL” customization to allow users to create their own look and functionality.
- Transfer all data layers into one “Framework Geodatabase”.

Delaware State-Wide Geocoding Service

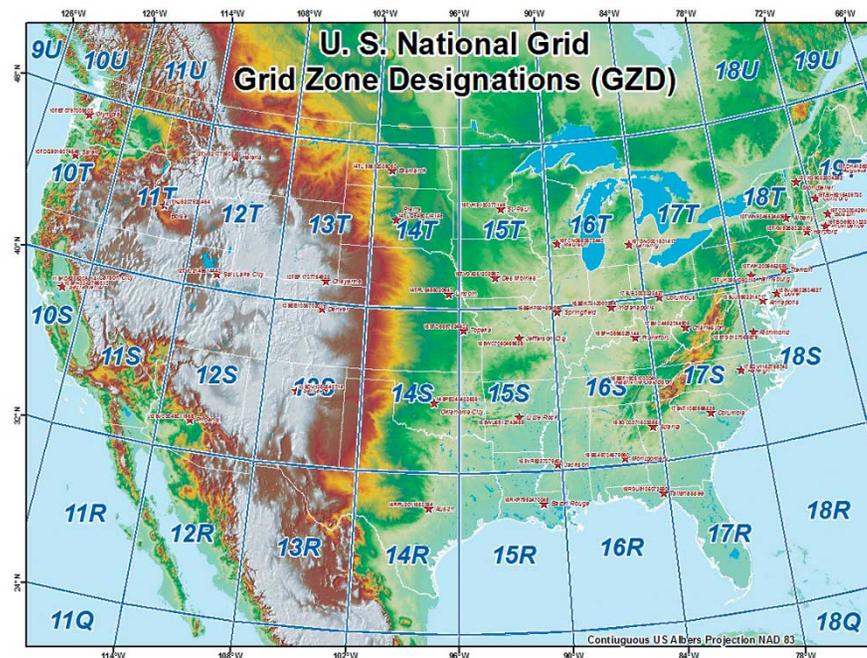


GeoCoding

- The process of assigning geographic coordinates (e.g. latitude-longitude) to street addresses, as well as other points and features.
- With geographic coordinates, the features can then be mapped and entered into Geographic Information Systems.

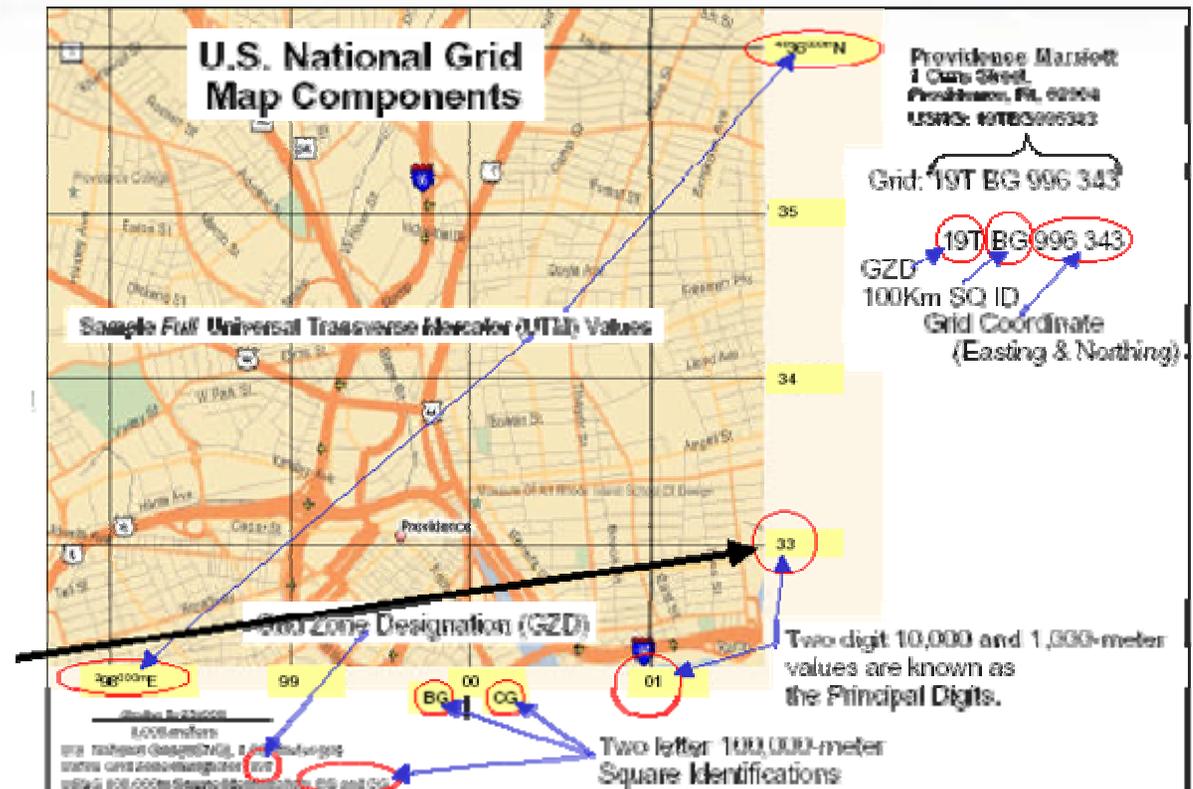
GeoAddressing

- Defining a Spatial Location based on the United States National Grid (USNG)

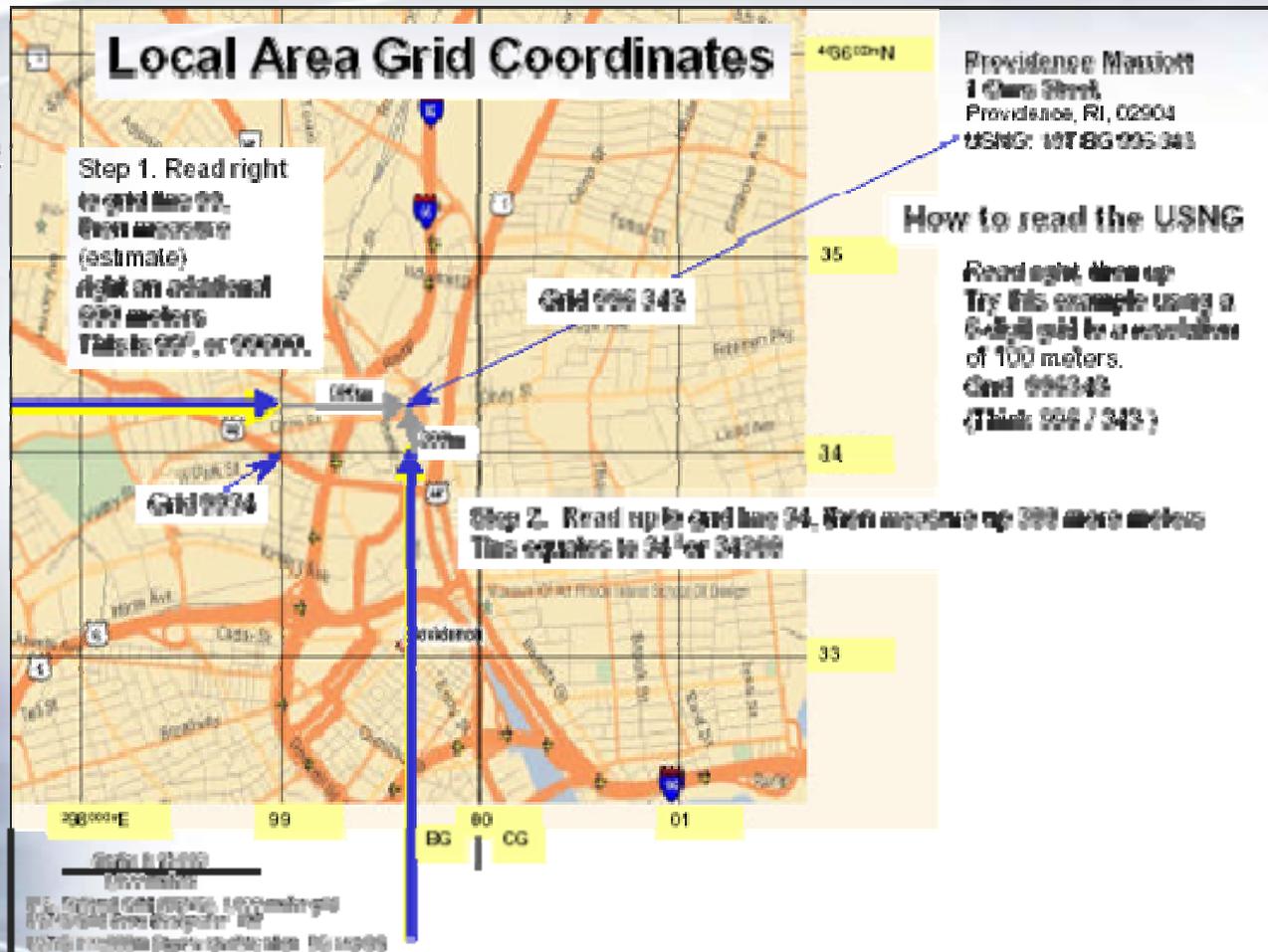


GeoAddressing

- UTM Grids are divided into Regional Grids.
- Regional Grids are divided into Local Grids.
- Each gives an increasing level of accuracy.



Local Area Grid



Who Needs What?

- **GeoCoding**
 - E-911
 - Health and Social Services
 - DOT
- **GeoAddressing**
 - E-911 (In reference to locations not related to address)

What are Web Services?

- **Automated resources accessed via the Internet.**
- **Standards-based web services use XML to interact with each other**

GeoCoding Web Service Process

- Data is Uploaded from a User Interface (defined data structure)
- Data Processed by Service
- Returned in a Defined Format with X,Y Coordinate Attached
- Renders an address for X,Y Coordinates
- Renders a GeoAddress for an X,Y or address (based off of USNG)

Possible Additional Functions

- Renders an address for X,Y Coordinates
- Renders a GeoAddress for an X,Y or address (based off of USNG)

What Has Been Accomplished?

- DeIDOT created GeoCoding Engine/Service
 - Currently used in INFORM for single address searches
 - Uses both the centerline data set and parcel data sets
 - References parcels first then centerline data set as back up
 - Configurable to add other data sets
 - XML Data input and output

DeIDOT INFORM http://207.140.67.15 - INFORM Multiple Search Tool - Microsoft Internet Explorer

Select search tab by moving mouse over target.

Basic Search **Advanced Search** GeoCode Search

Geocoding Search

Number *	Prefix Direction
<input type="text"/>	<input type="text"/>
Name **	Suffix
<input type="text"/>	<input type="text"/>
Zipcode	Cross Street *
<input type="text"/>	<input type="text"/>
City **	
<input type="text"/>	

Submit

* Required for street search
* Required for intersection search

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DELAWARE
Online Resource Mapping

Legend Attributes

Hide/Show Activate - Active Layer

- + Base Map
- + Traffic
- + Environmental
- + Imagery
- + Administrative Boundaries
- + DELDOT Boundaries

Discussions Done

start | Inbox - Microsoft Out... | DelDOT INFORM - Mic... | http://207.140.67.15... | 3:38 PM

DeIDOT INFORM http://207.140.67.15 - INFORM Multiple Search Tool - Microsoft Internet Explorer

Select search tab by moving mouse over target.

Basic Search Advanced Search GeoCode Search

Geocoding Search

Number * Prefix Direction
46

Name ** Suffix
Rankin Rd

Zipcode Cross Street *
Newark

Submit

* Required for street search
* Required for intersection search

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DELAWARE
Online Resource Mapping

Legend Attributes

- Active Layer
- + Base Map
- + Traffic
- + Environmental
- + Imagery
- + Administrative Boundaries
- + DELDOT Boundaries

Done Internet

Discussions Discussions not available on http://207.140.67.15/

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DeIDOT INFORM http://207.140.67.15 - INFORM Multiple Search Tool - Microsoft Internet Explorer

File Edit View

Back Address http://207.140.67.15

http://207.140.67.15 - GeoCoding Results Page - Microsoft Internet Explorer

**** Click on table column titles to sort table. ****

MapIt	Address	Score
Map This	46 Rankin Rd	N/A

Business Area Transportation Sub-Business Area --Select One-- Theme --Select One-- View Area Type Municipal Maintenance County State Senat State House District Statewide Current Map [LOAD THE](#)

Done Internet

Discussions Discussions not available on http://207.140.67.15/

start Inbox - Microsoft ... DeIDOT INFORM ... http://207.140.6... http://207.140.6... Microsoft PowerP... 3:39 PM



Business Area Transportation

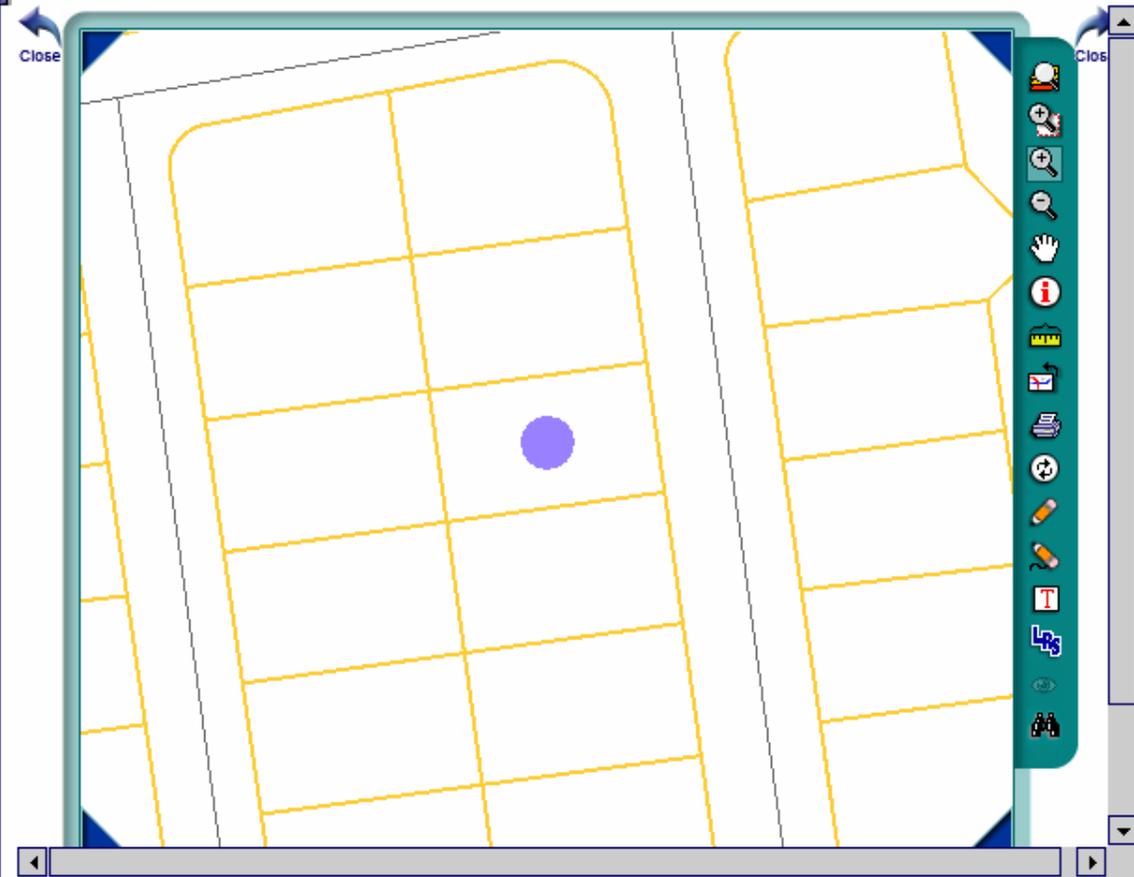
Sub-Business Area
--Select One--

Theme
--Select One--

View Area Type

- Municipal
- Maintenance Area
- County
- State Senate
- State House
- District
- Statewide
- Current Map Window

LOAD THEME



Legend **Attributes**

Hide/Show Activate - Active Layer

Base Map

- Roadway Features Optio
 - Interstate
 - State Route
 - US Highway
- Local Roads Optio
- Railroads Optio
- Streams & Rivers Optio
- Water Bodies Optio
- Tax Parcels Optio
- New Castle OOP Optio
- Statewide OOP Optio
- Kent County OOP Optio
- ATR Optio

Traffic

Environmental

Imagery

INFORM Multiple Search Tool - Microsoft Internet Explorer

Select search tab by moving mouse over target.

Basic Search Advanced Search GeoCode Search

Geocoding Search

Status = 200

Number *	Prefix Direction
<input type="text" value="52"/>	<input type="text"/>
Name **	Suffix
<input type="text" value="Rankin"/>	<input type="text" value="Rd"/>
Zipcode	Cross Street *
<input type="text"/>	<input type="text"/>
City **	
<input type="text" value="Newark"/>	

* Required for street search
* Required for intersection search

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DELAWARE

Online Resource Mapping

Legend Attributes

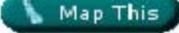
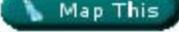
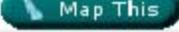
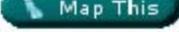
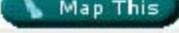
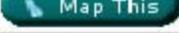
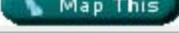
Hide/Show Activate - Active Layer

- Base Map
 - Roadway Features
 - Interstate
 - State Route
 - US Highway
 - Local Roads
 - Railroads
 - Streams & Rivers
 - Water Bodies
 - Tax Parcels
 - New Castle OOP
 - Statewide OOP
 - Kent County OOP
 - ATR
- Traffic
- Environmental
- Imagery

Done Internet

Discussions not available on http://207.140.67.15/

**** Click on table column titles to sort table. ****

MapIt	Address	Score
 Map This	52 RANKIN RD 19711	100
 Map This	2 5 RANKIN RD 19711	51
 Map This	30 37 RANKIN RD 19711	51
 Map This	7 8 RANKIN RD 19711	51
 Map This	14 19 RANKIN RD 19711	51
 Map This	22 27 RANKIN RD 19711	51
 Map This	11 12 RANKIN RD 19711	51
 Map This	52 RANKIN RD 19711	80
 Map This	2 5 RANKIN RD 19711	31
 Map This	30 37 RANKIN RD 19711	31
 Map This	7 8 RANKIN RD 19711	31
 Map This	14 19 RANKIN RD 19711	31
 Map This	22 27 RANKIN RD 19711	31
 Map This	11 12 RANKIN RD 19711	31



Business Area
transportation

Sub-Business Area

Select One--

name

Select One--

new Area Type

Municipal

Maintenance

County

State Senat

State House

District

Statewide

Current Map

 LOAD THE



Business Area Transportation

Sub-Business Area

--Select One--

Theme

--Select One--

View Area Type

- Municipal
- Maintenance Area
- County
- State Senate
- State House
- District
- Statewide
- Current Map Window

LOAD THEME

Close

52 RANKIN RD 19711

Legend Attributes

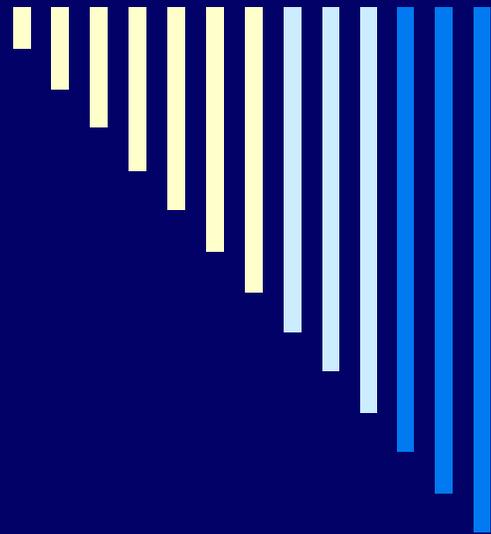


Points to Ponder

- Define expectations for this service
- Define a physical location for service
- Create an user interface for submittal
- Define business roles
 - Data exceptions
 - Upload types and formats
 - Download formats

Points to Ponder

- Define security
- Implement Geoaddressing
 - Incorporate geoaddressing grid
 - Technically very similar to DeIDOT GeoCoder



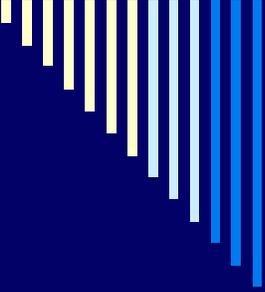
The Delaware Spatial Data Framework

A Review

November 18, 2005

November 18, 2005



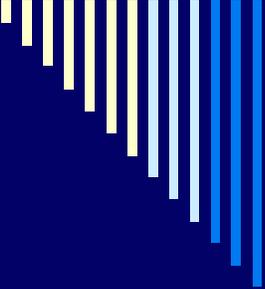


Time For A Review

- ❑ Delaware Spatial Data Framework first approved by DGDC in August, 2000
- ❑ Five years of experience and change
- ❑ Changes in approach in other states and nationally
- ❑ Other ideas of Framework
- ❑ Where are we now? Where are we going?

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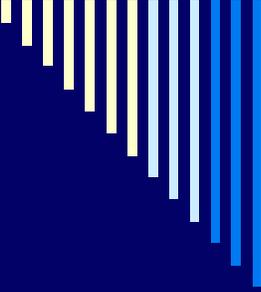


What Are We Talking About?

- A Basic Data “Skeleton”
- The most common data themes needed by GIS users
- A digital base map
- All other data should “fit to” the framework

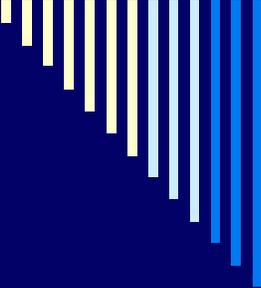
November 18, 2005





Within a Larger Framework

- National Spatial Data Infrastructure
 - 7 Categories, originally, and growing
- The National Map
 - 8 Categories, originally
 - Based on replacing the topographic maps
- International Organization for Standards
 - 7 Categories
 - Many, many subcategories

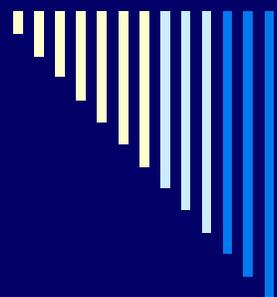


Where We Are Now

- Nine Framework categories
- Patched-together from existing and new data sources
- Data Stewards identified
- Deployed via the Delaware DataMIL
- Challenges not met:
 - Data standards
 - Ironclad stewardship agreements

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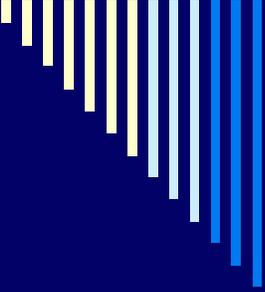
Framework Categories

Delaware Framework, V1.0

- Aerial Imagery
- Elevation
- Geodetic Control
- Boundaries
- Water Features
- Transportation
- County Parcels
- Surface Cover
- Geographic Names

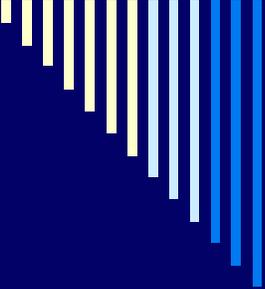
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But We Also Have...

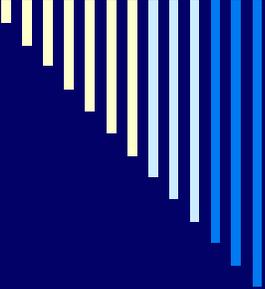
- Other data sets that have accumulated within DataMIL
 - Related to Framework
- They are:
 - Other imagery
 - Other boundaries
 - Reference
 - Miscellaneous features



Let's Ask Ourselves:

- ❑ What is now in our Framework?
- ❑ What else do we have?
- ❑ Should we add to our definition of “Framework Data?”
- ❑ Should we expand to a new type of data?
- ❑ What should be the role of DataMIL?

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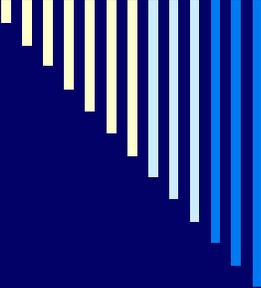


Aerial Imagery

- 2002 Orthos
 - 1:2,400
 - False Color IR
 - 0.25-Meter
 - Partially restricted



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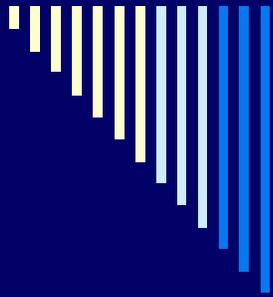


Aerial Imagery

- 2002 Orthos
- Also on DataMIL
 - 1992
 - 1997
 - Historic
 - Scanned Topo Maps
- What else?
 - Historic Maps
 - Satellite Imagery

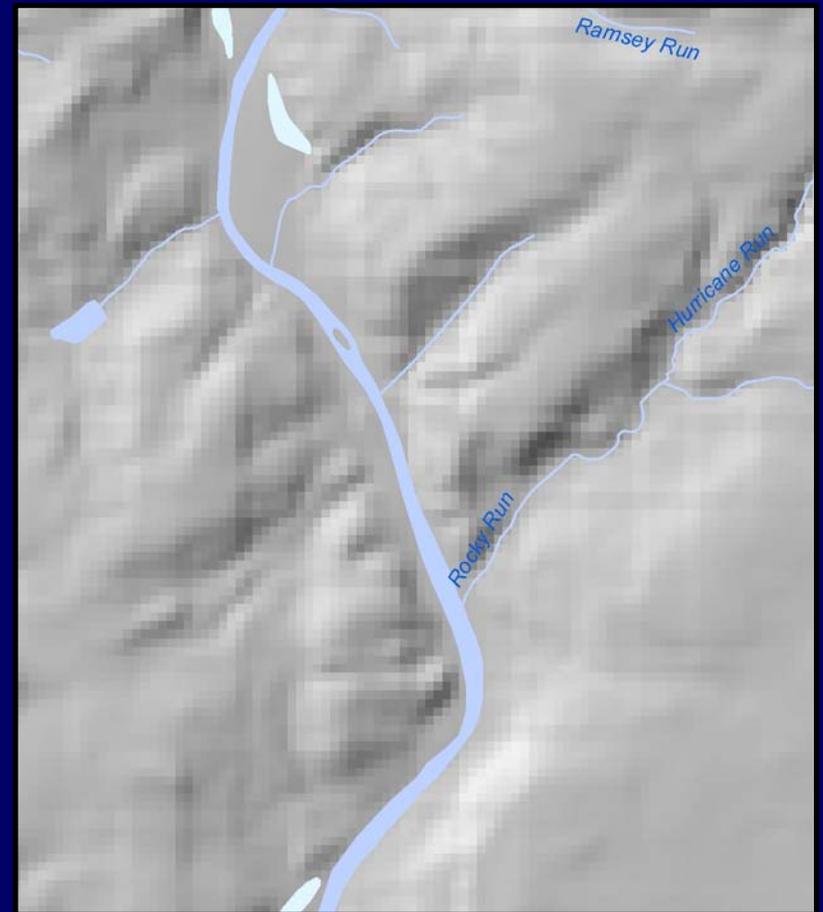


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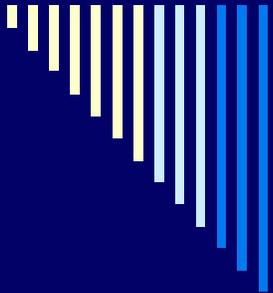


Elevation

- Shaded Relief
 - USGS NED

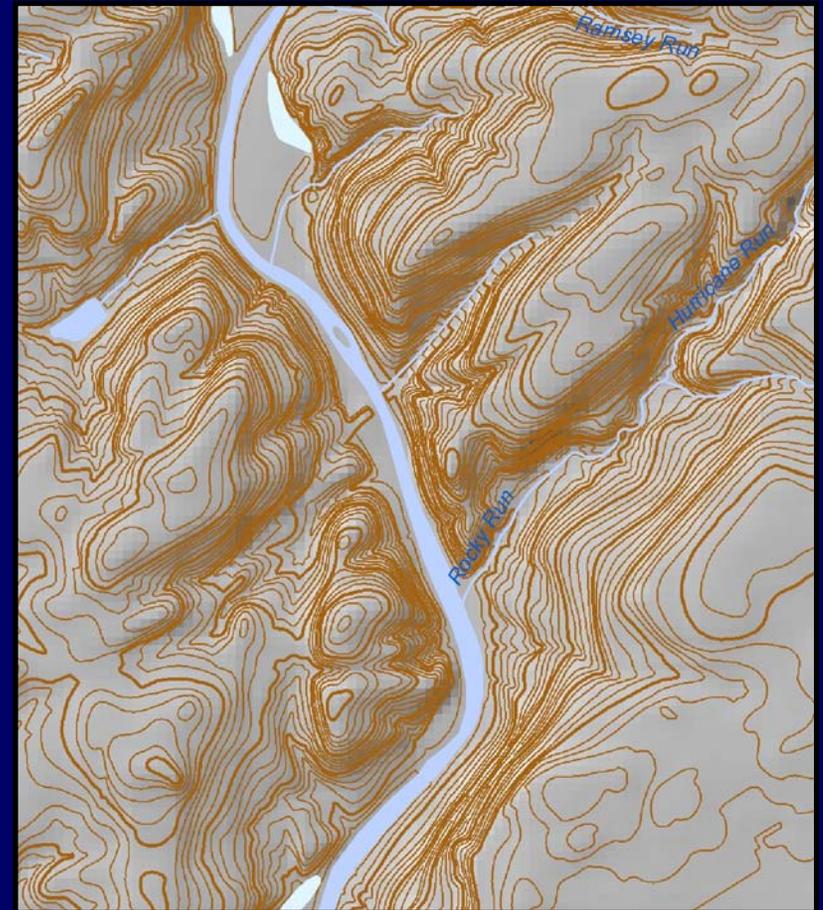


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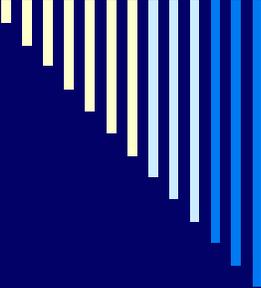


Elevation

- Shaded Relief
 - USGS NED
- Contours
 - USGS

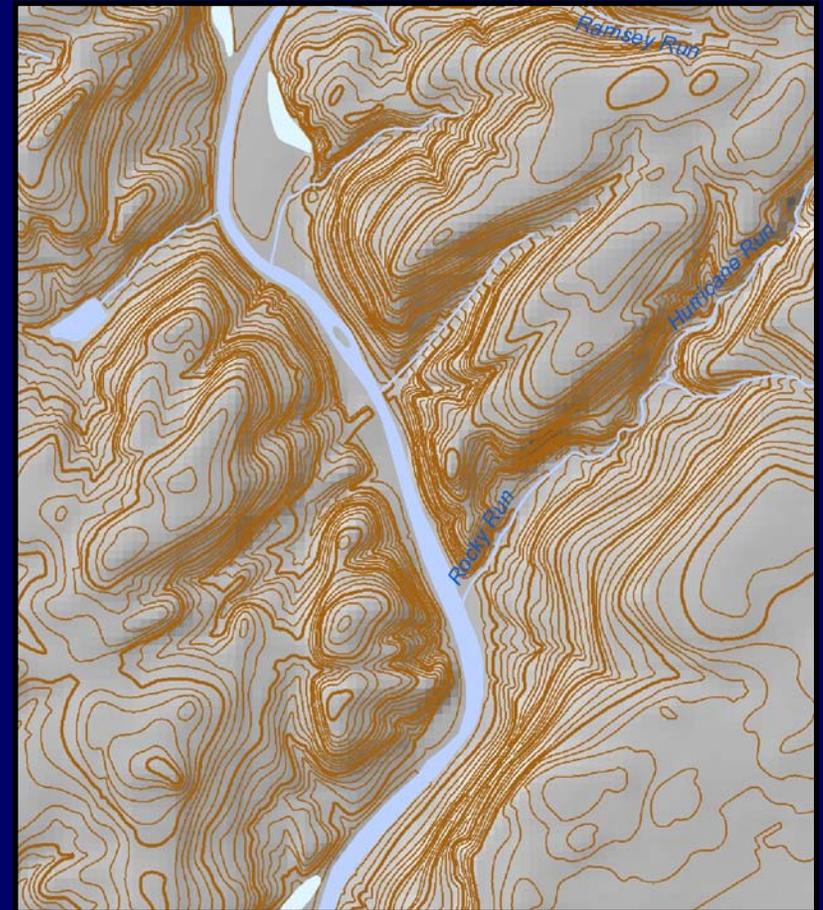


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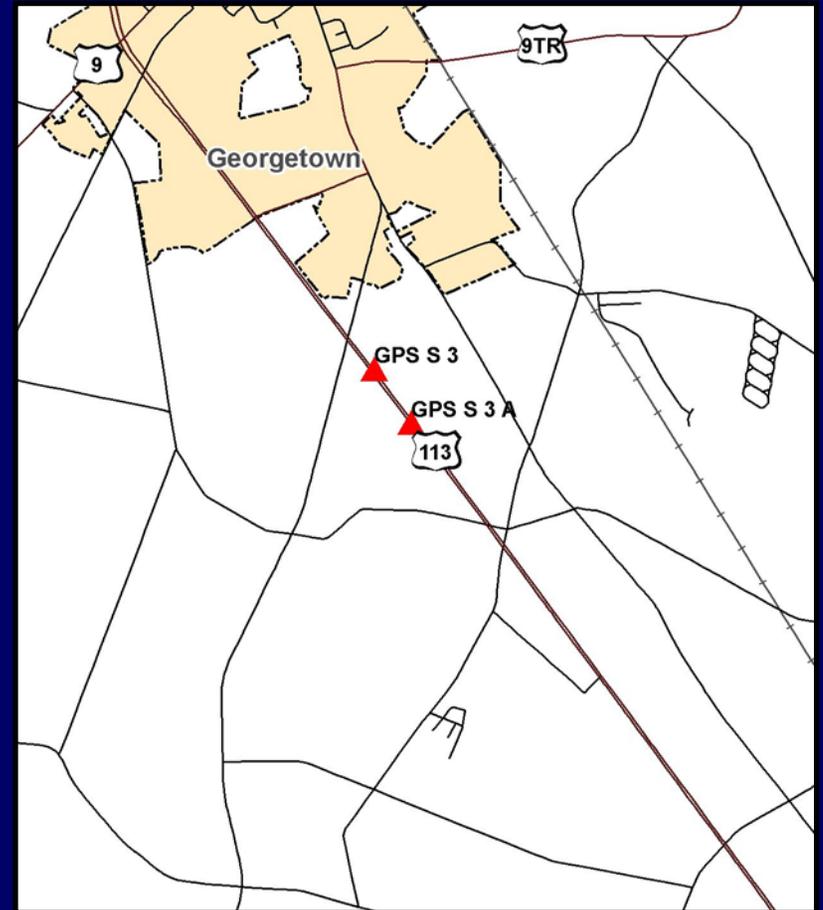
Elevation

- **Shaded Relief**
 - USGS NED
- **Contours**
 - USGS
- **What else?**
 - Break lines
 - Spot elevations
 - Raw LiDAR/Radar
 - Triangulated Irregular Network



Geodetic Control

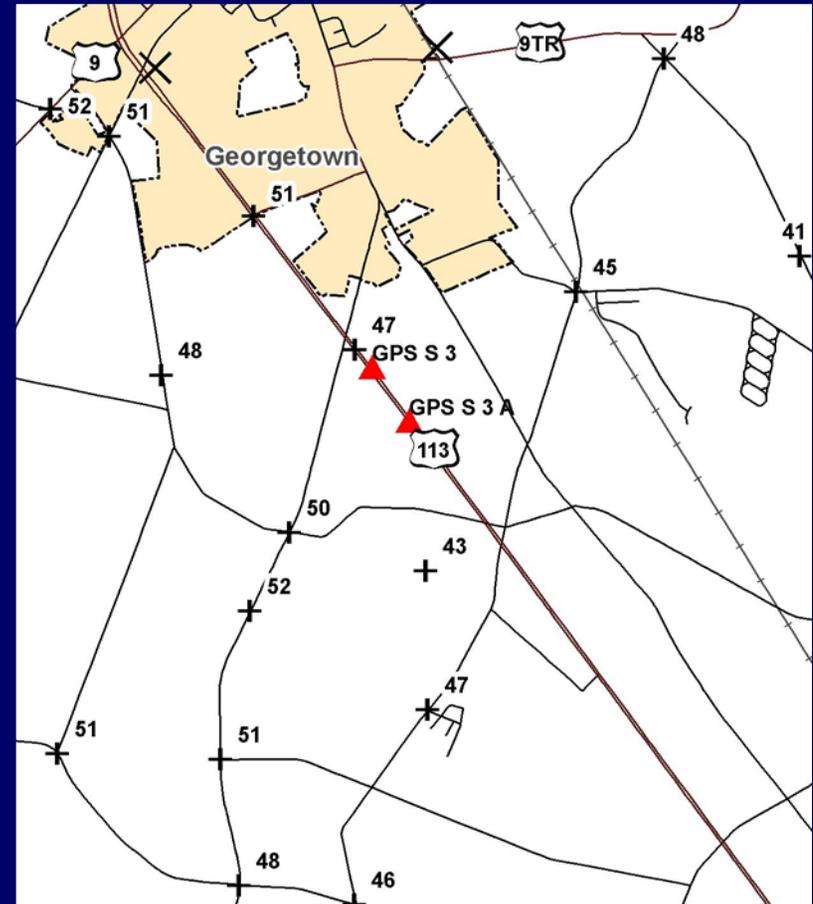
- NGS HARN
- DGS



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Geodetic Control

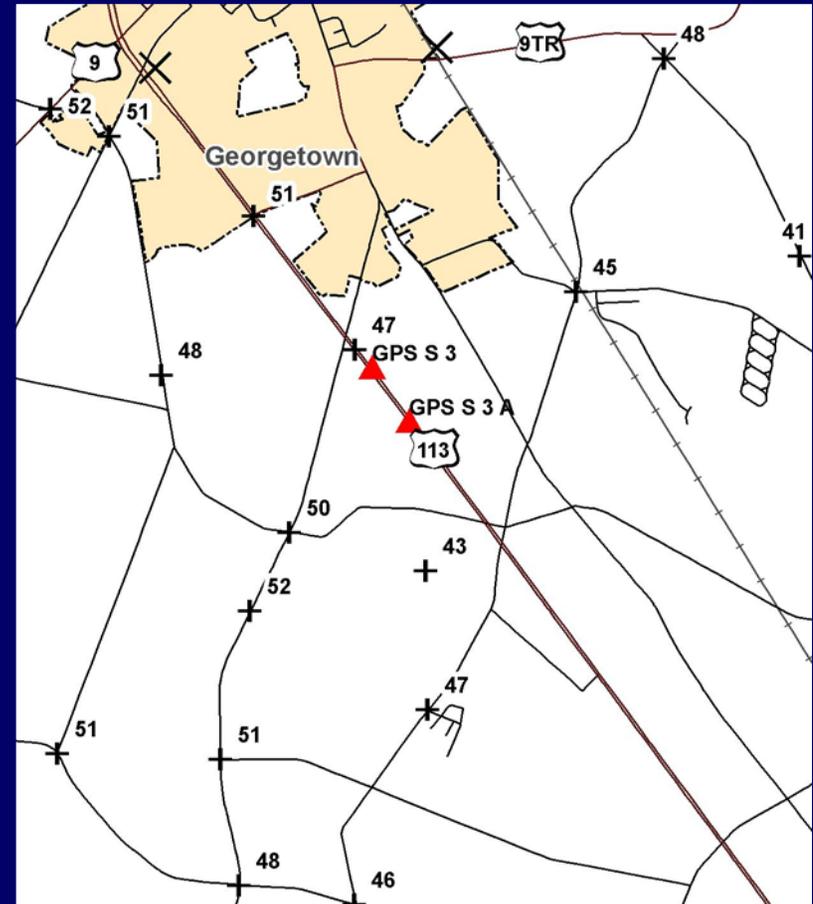
- NGS HARN
 - DGS
- Vertical Control
 - DGS



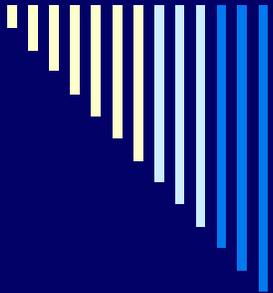
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Geodetic Control

- NGS HARN
 - DGS
- Vertical Control
 - DGS
- What else?
 - Horizontal Control
 - Spot Elevations
 - Surveying
 - Community Input?

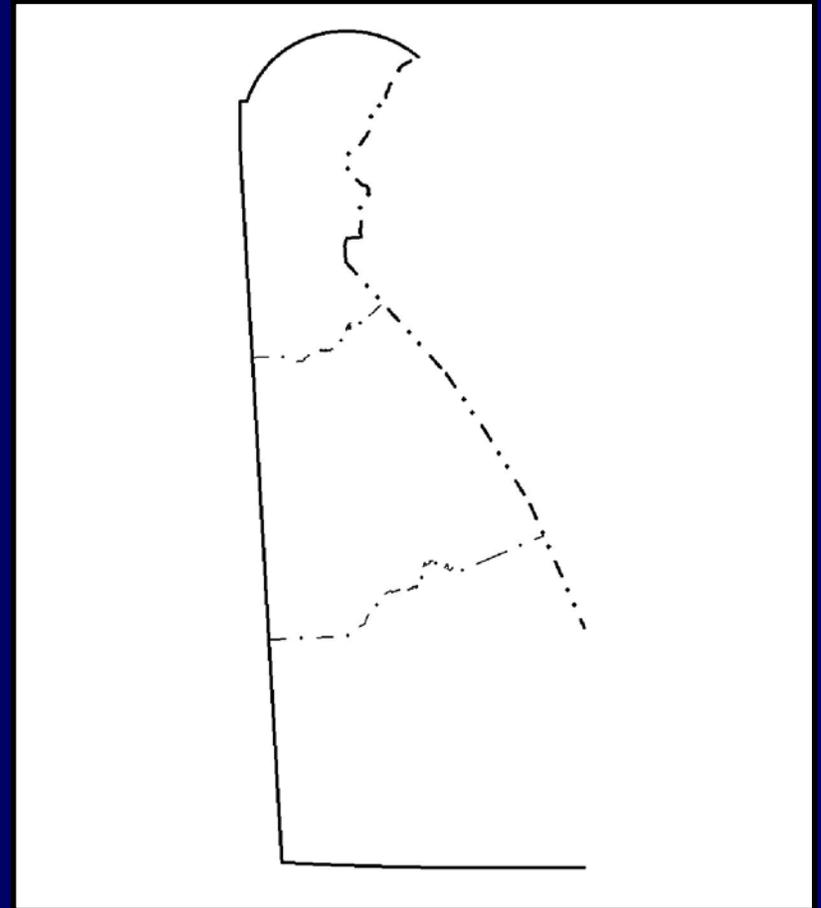


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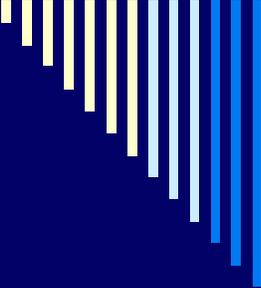


Boundaries

- State and County Lines
 - USGS

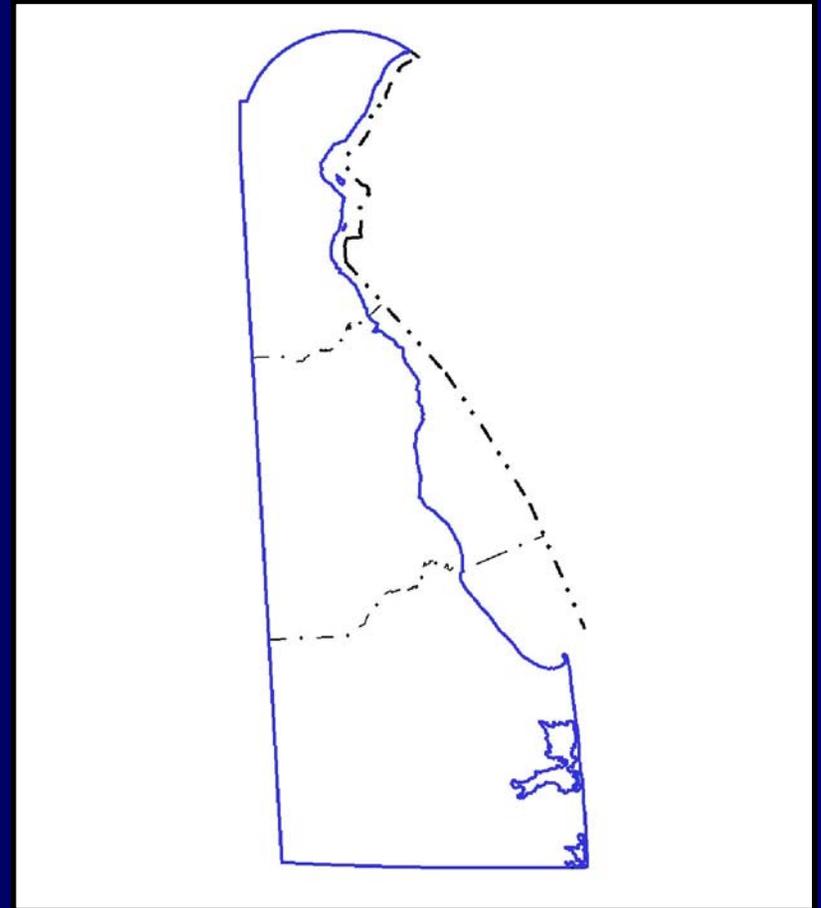


November 18, 2005

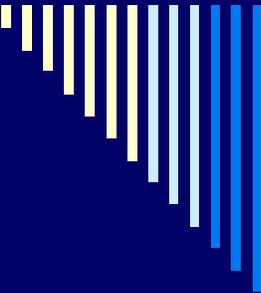


Boundaries

- State and County Lines
 - USGS
- Delaware's Outline
 - DGS

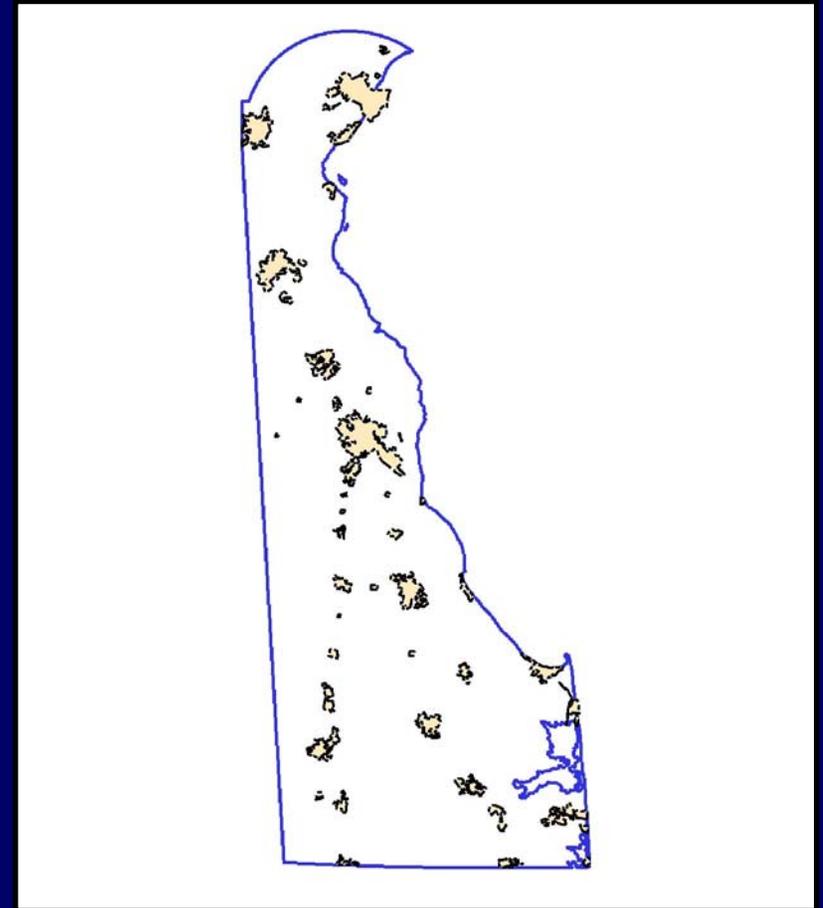


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Boundaries

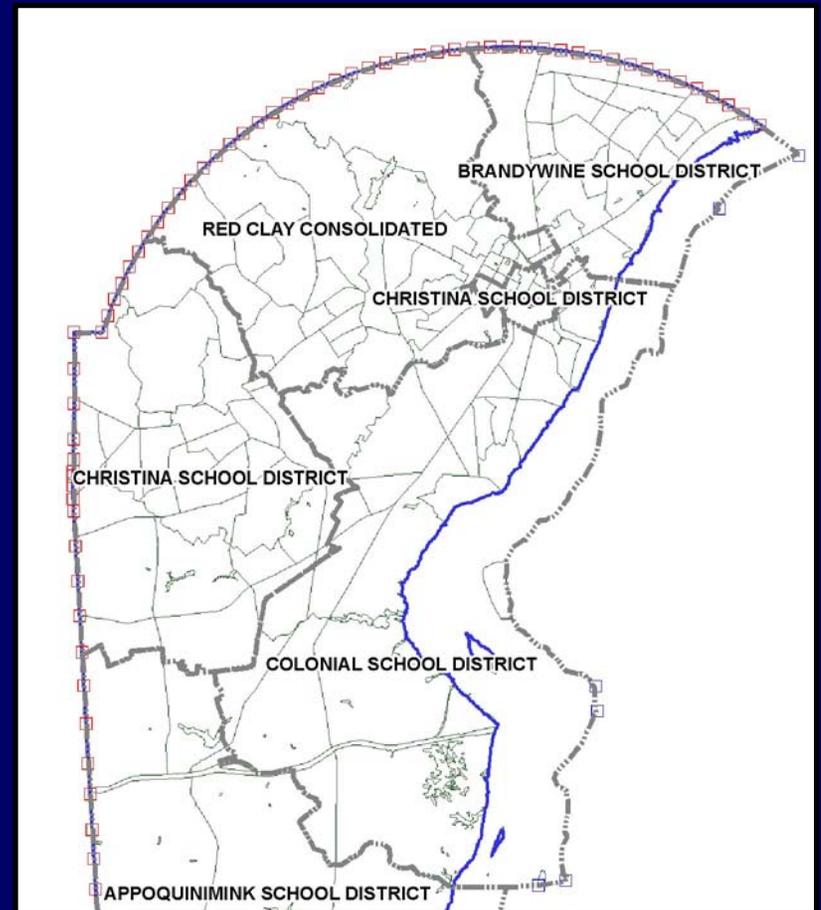
- **State and County Lines**
 - USGS
- **Delaware's Outline**
 - DGS
- **Municipal Boundaries**
 - OSPC

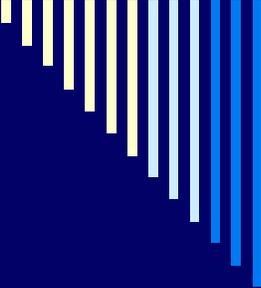


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Boundaries

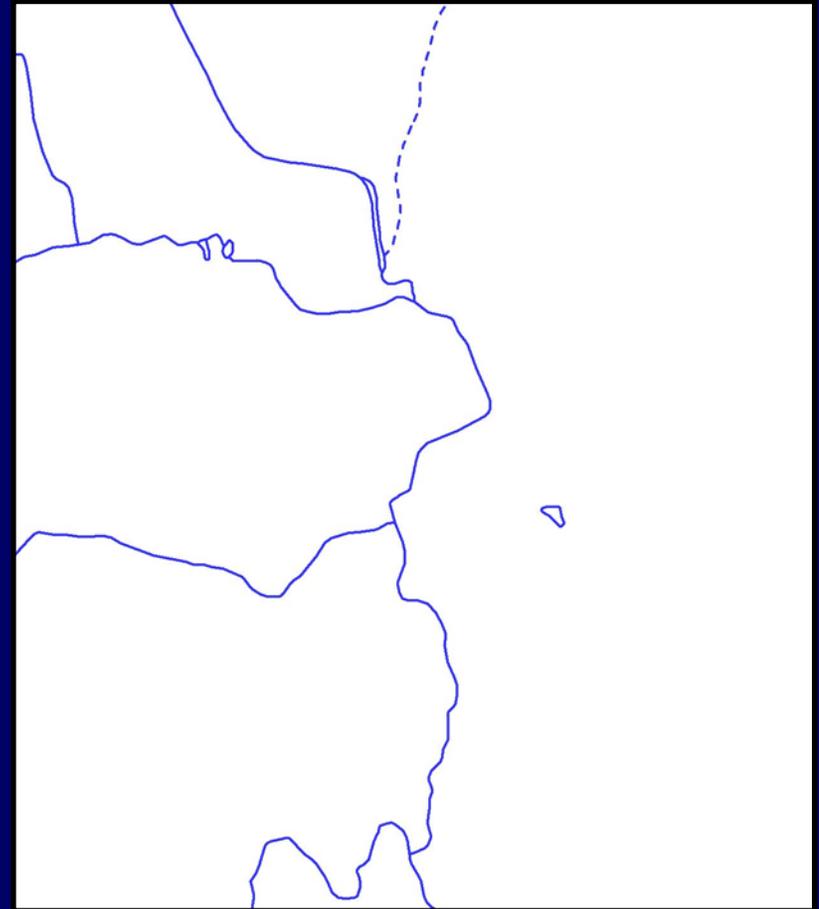
- Other Boundaries
 - Monuments
 - School Districts
 - Hundreds
 - Census Geography
- What else?
 - Parks
 - Public lands
 - Police/Fire/EMS
 - Elections





Water Features (Now)

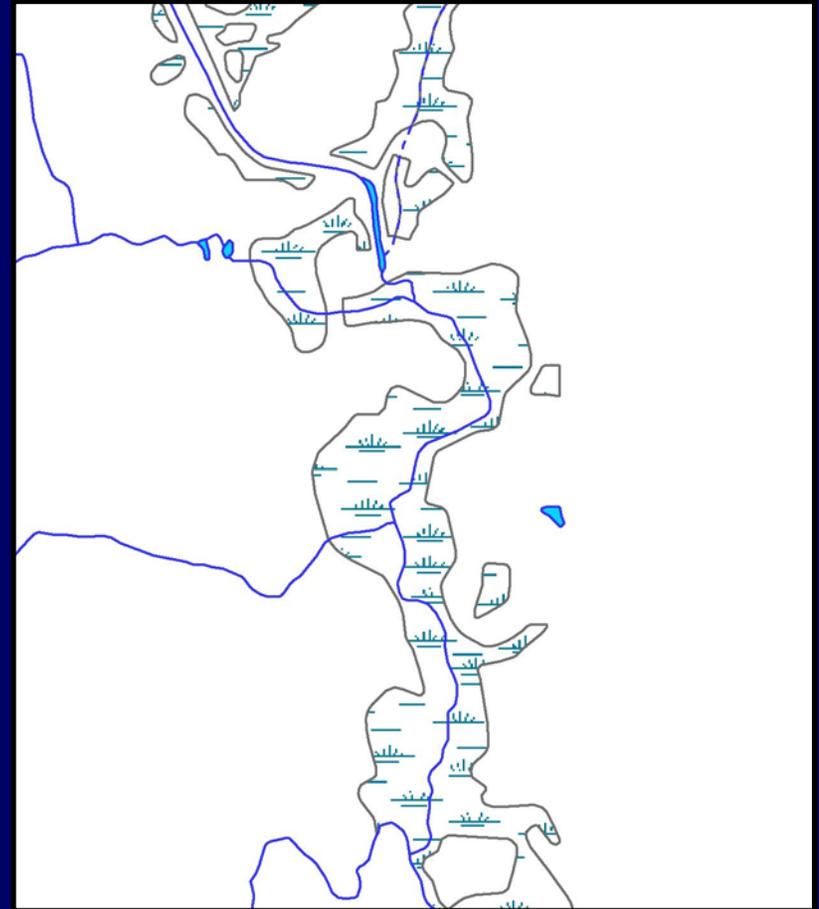
- Rivers and Streams
 - USGS DLG



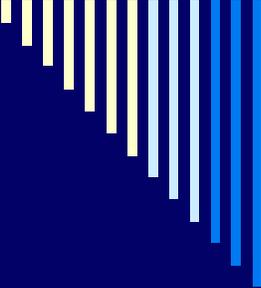
November 18, 2005

Water Features (Now)

- Rivers and Streams
 - USGS DLG
- Lakes, Ponds, Areas
 - USGS DLG

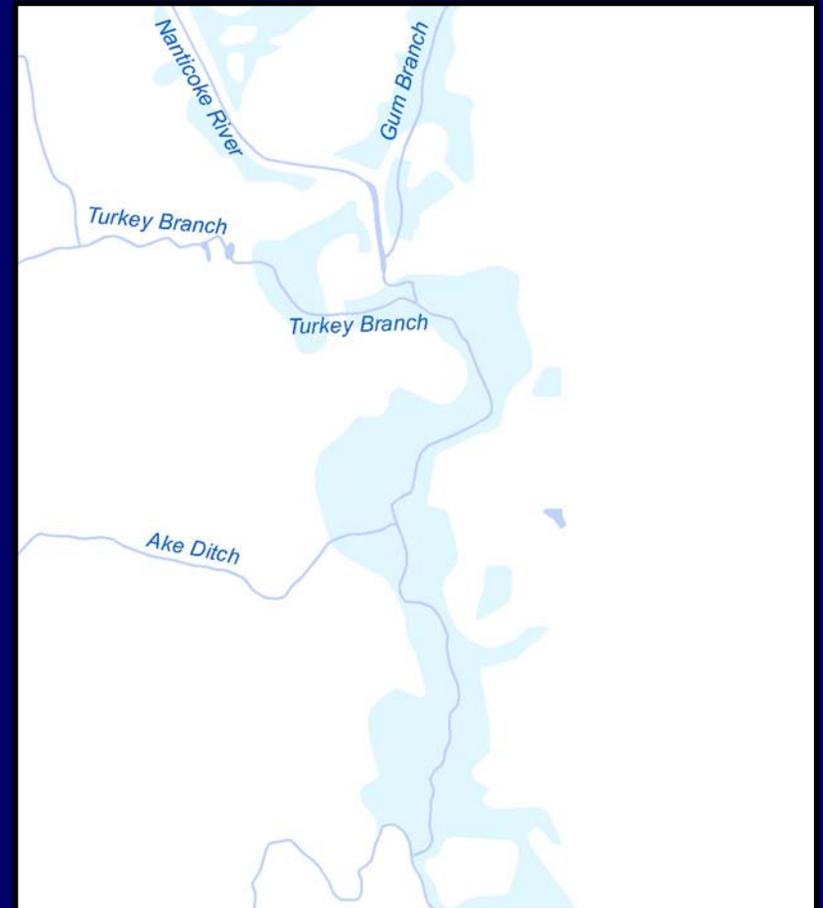


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Water Features (Soon)

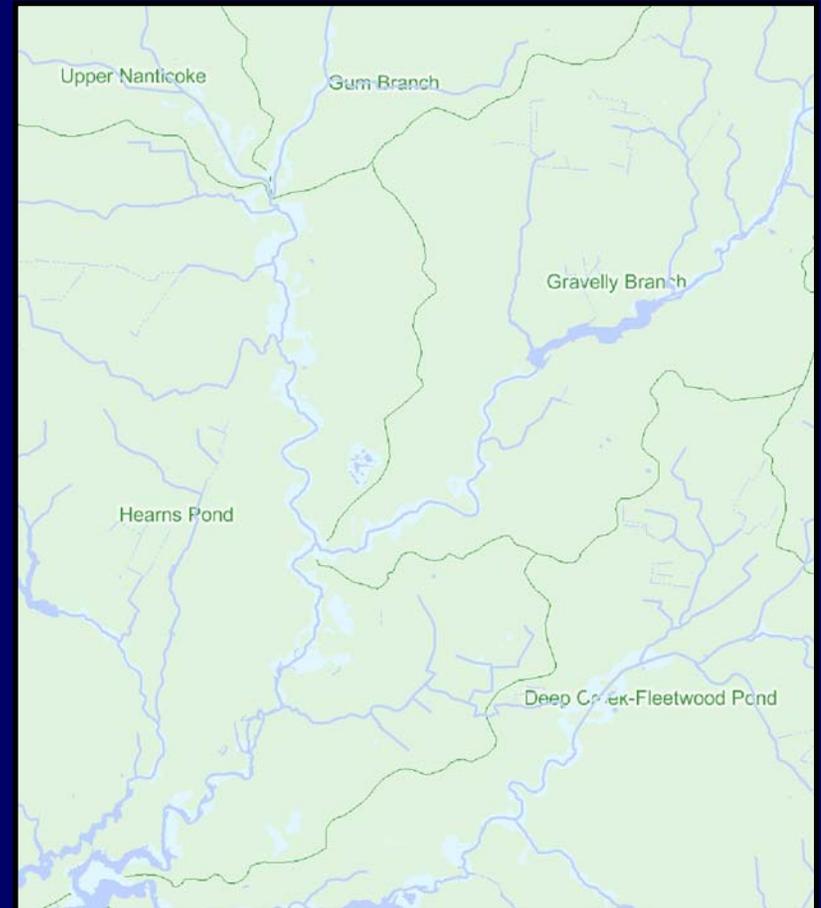
- Rivers and Streams
 - NHD
- Lakes, Ponds, Areas
 - NHD



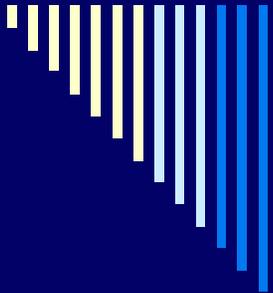
November 18, 2005

Water Features

- Rivers and Streams
 - NHD
- Lakes, Ponds, Areas
 - NHD
- Watersheds
 - USGS/EPSC HUC

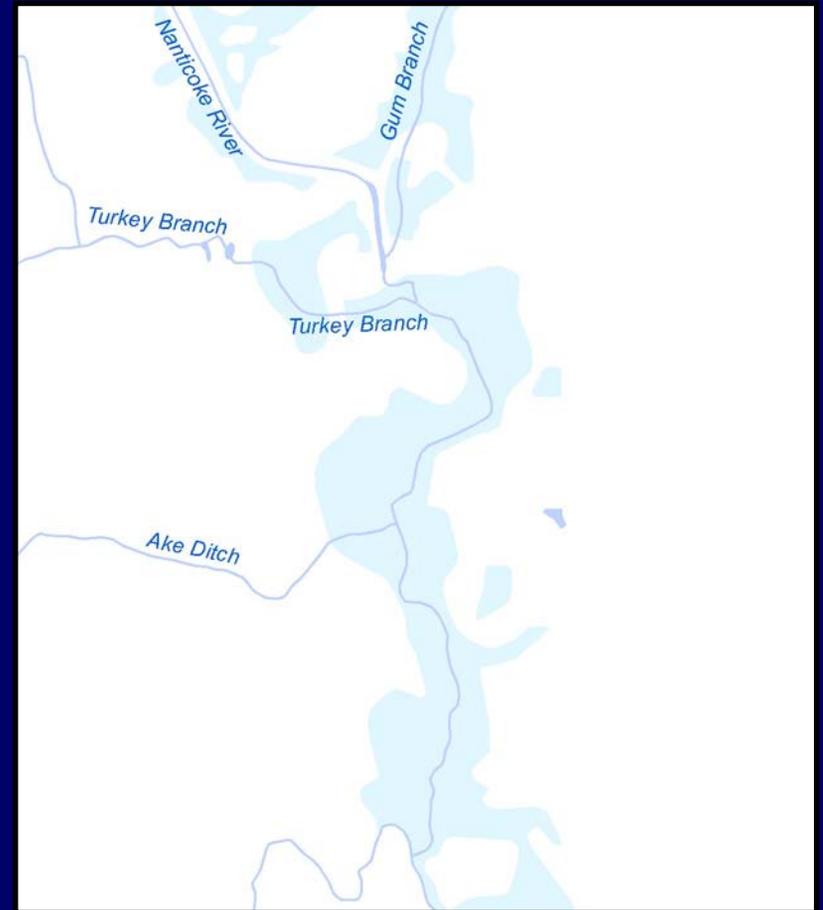


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Water Features

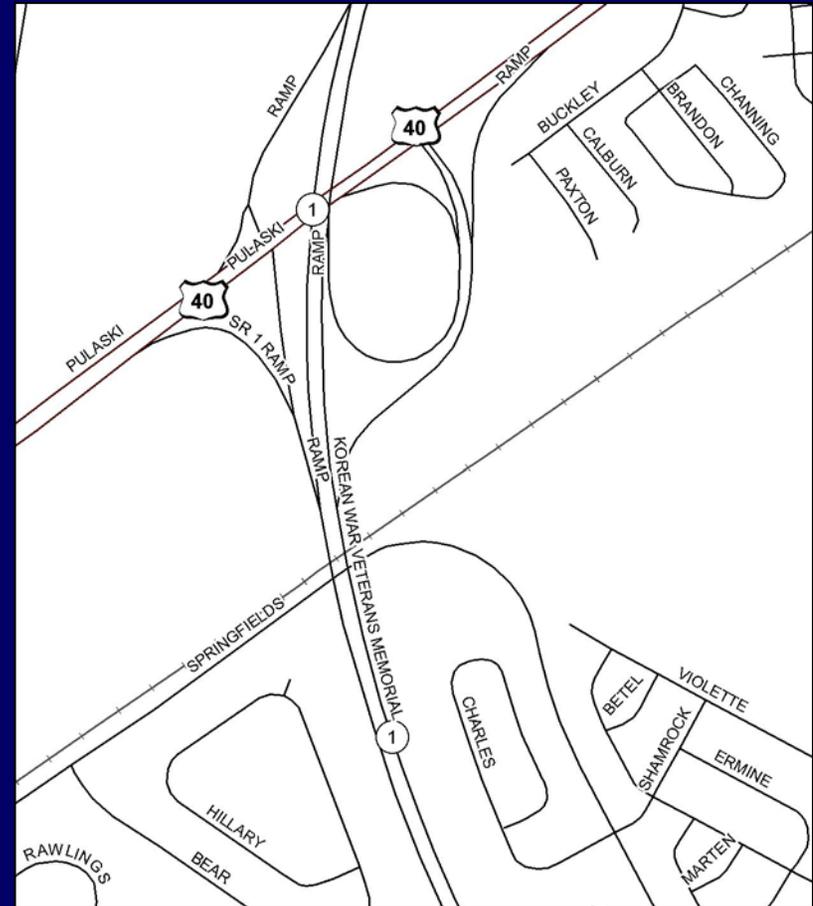
- What else?
 - Flood maps
 - Dams
 - Navigation Channels and aids
 - Wetlands



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Transportation

- Roads and Railroads
 - DeIDOT/USGS

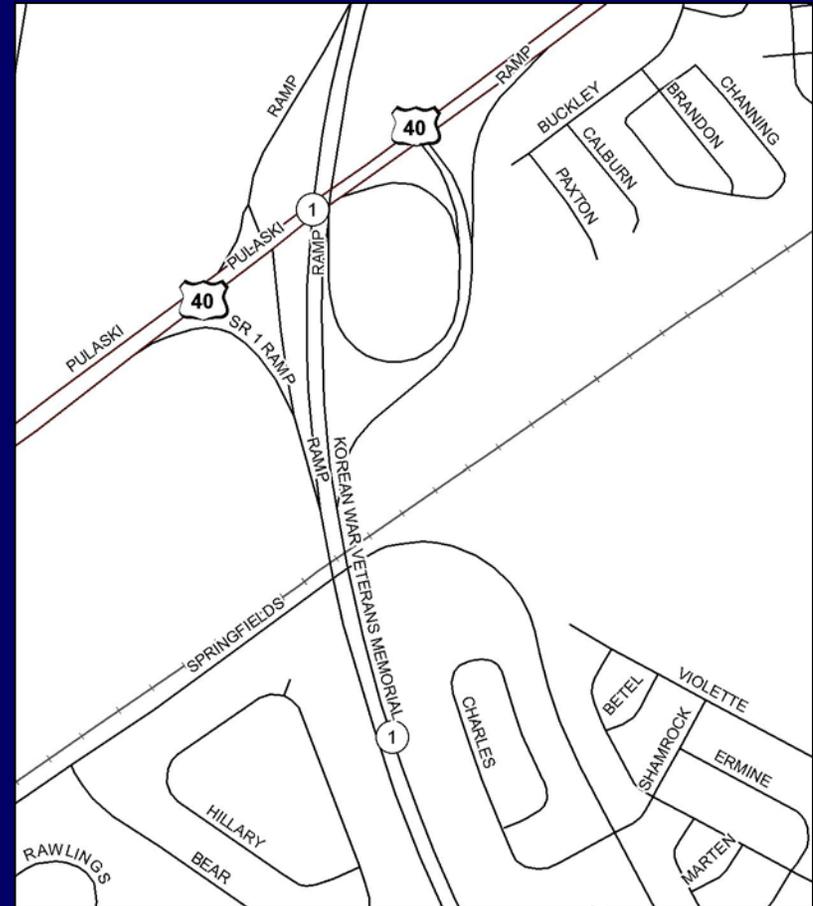


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Transportation

- Roads and Railroads
 - DeIDOT/USGS
- Plans for DeIDOT/TeleAtlas partnership

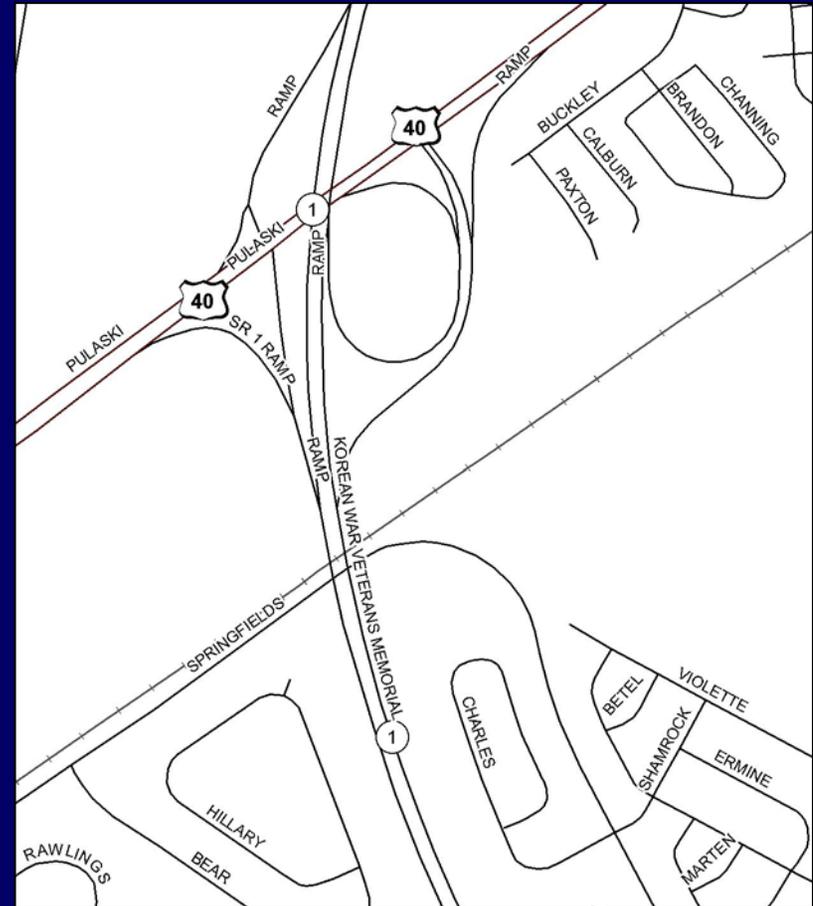


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Transportation

- What else?
 - Addresses/Ranges
 - Transit
 - Trails
 - Airports
 - Evacuation routes
 - Linear referencing
 - Mile markers
 - Bridges
 - Culverts



Parcels

□ County Parcels

- New Castle
- Kent
- Sussex



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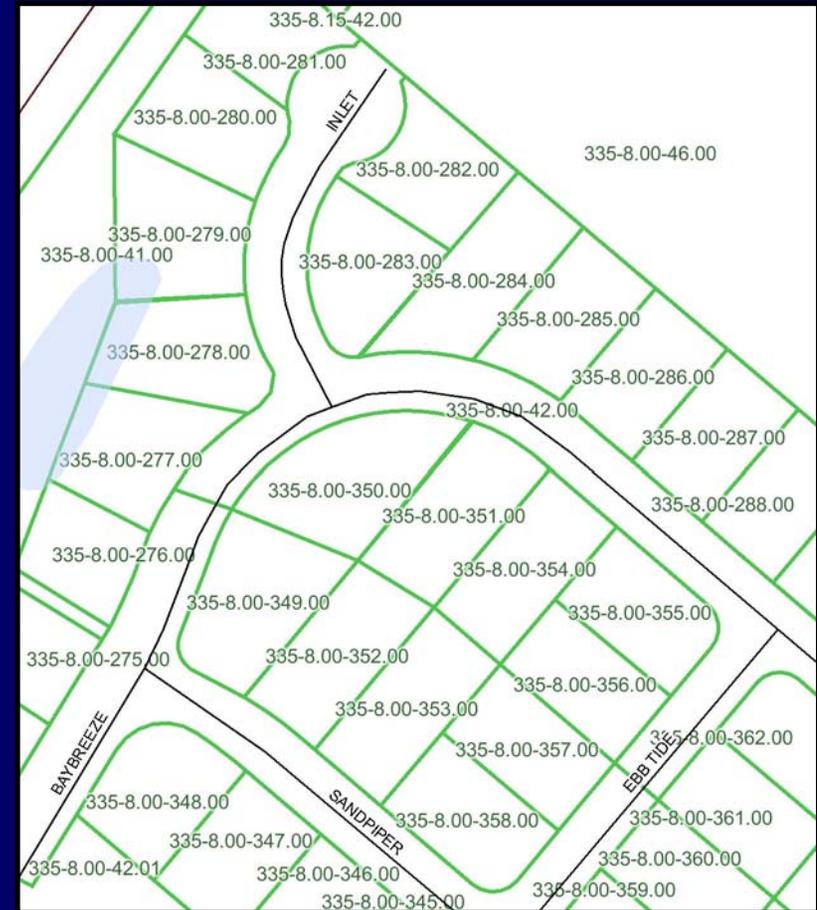
Parcels

□ County Parcels

- New Castle
- Kent
- Sussex

□ What else?

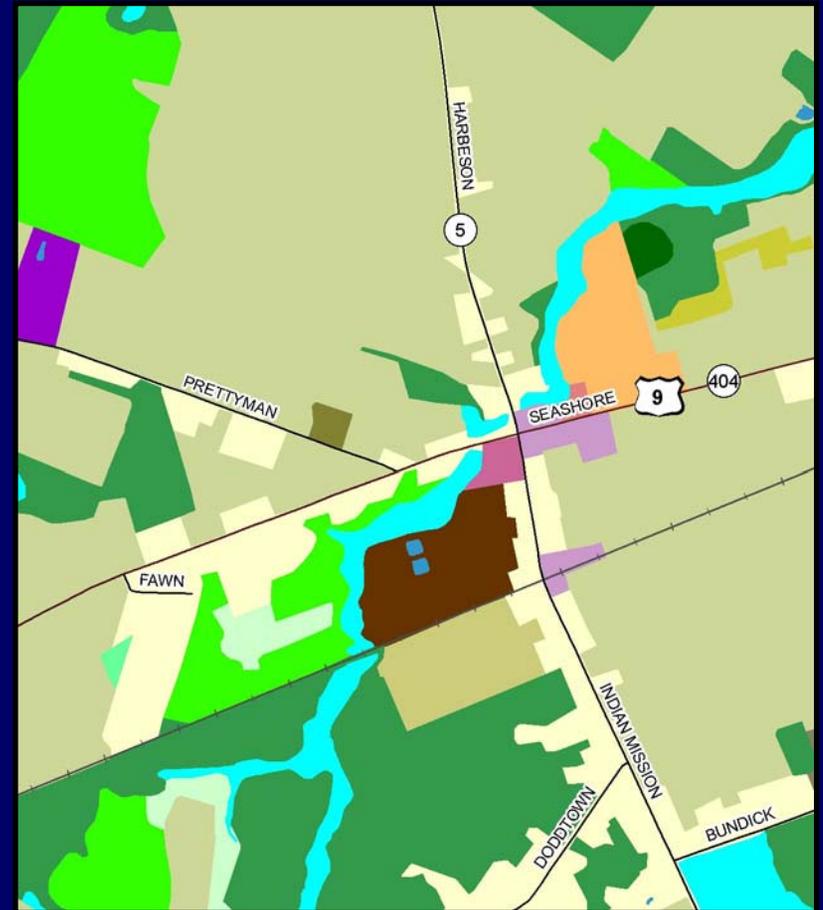
- Easements
- Public lands



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Surface Cover

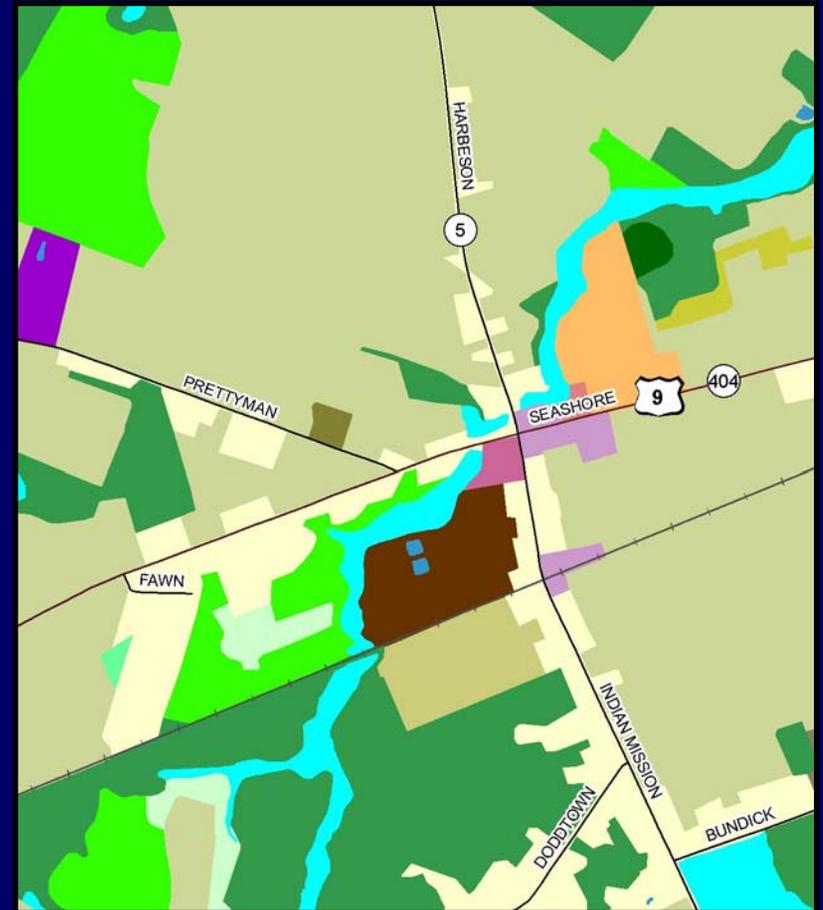
- Land Use/Cover
 - 2002 LULC



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Surface Cover

- Land Use/Cover
 - 2002 LULC
 - Full Attributes

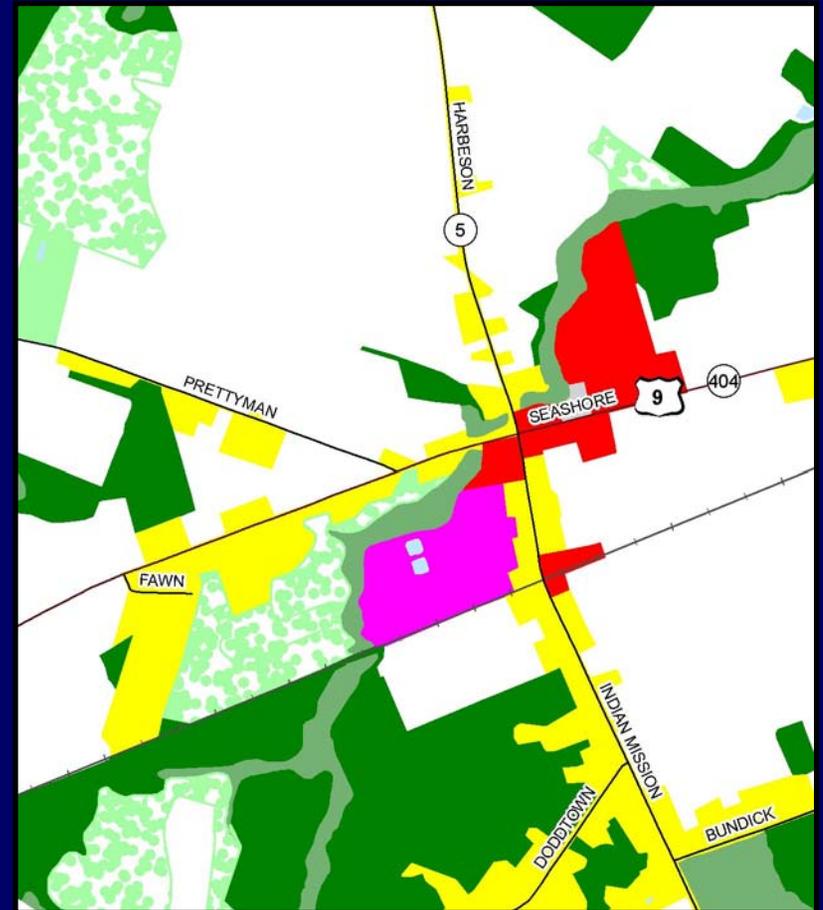


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Surface Cover

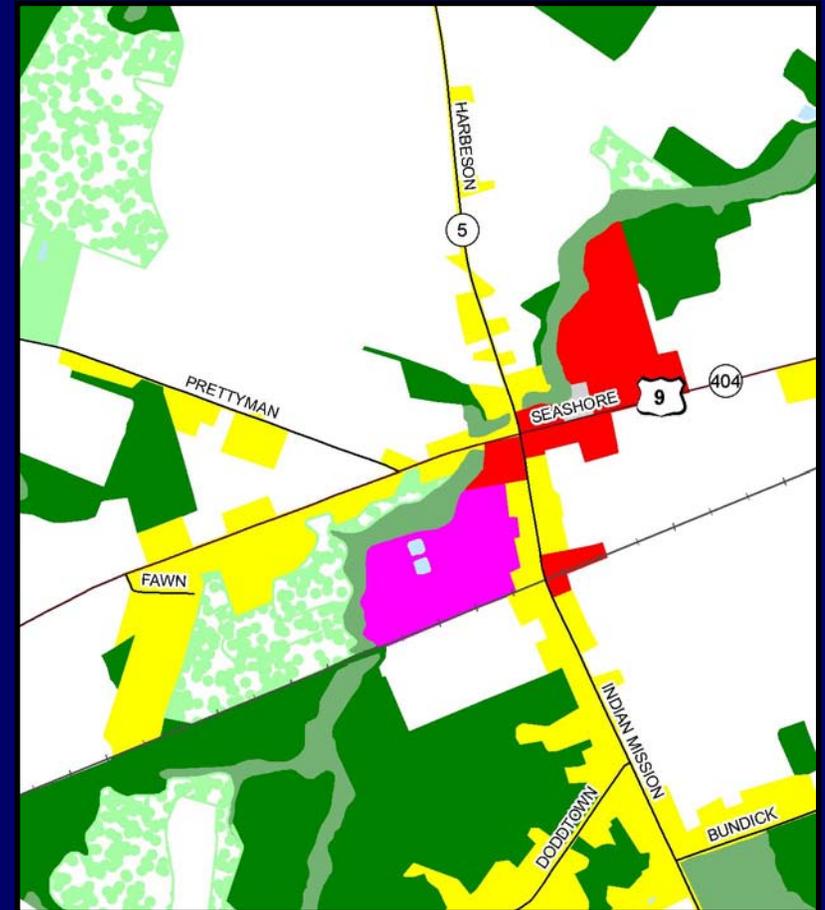
- Land Use/Cover
 - 2002 LULC
 - Full Attributes
 - A subset



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Surface Cover

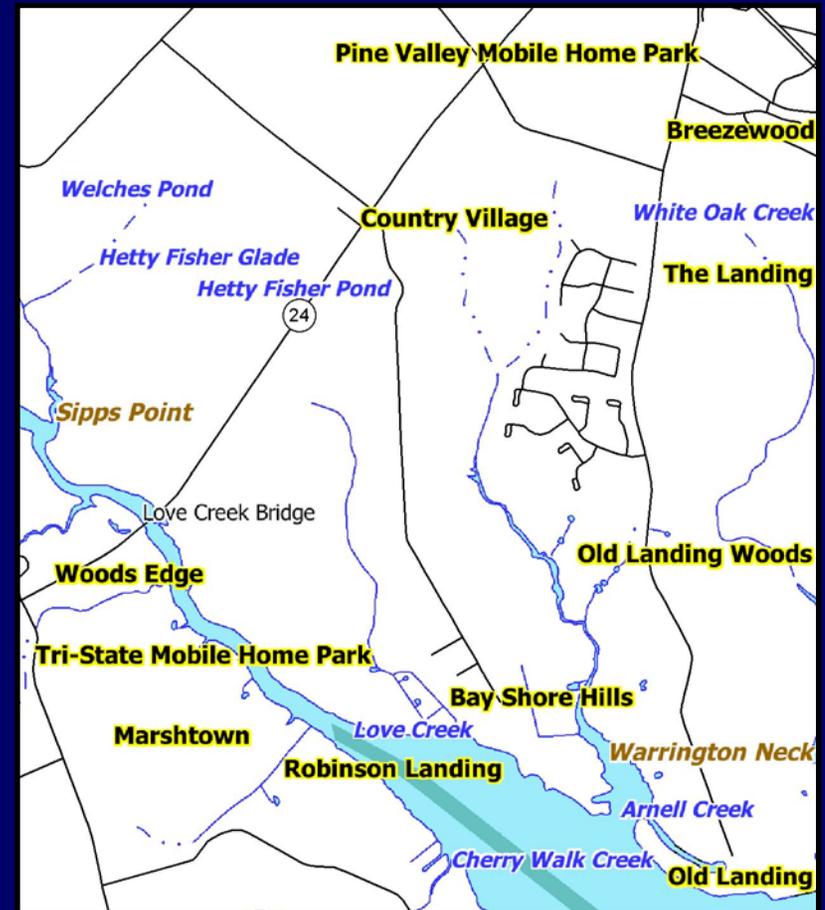
- Land Use/Cover
 - 2002 LULC
 - Full Attributes
 - A subset
- What else?
 - Soils
 - Habitat
 - Wetlands



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Geographic Names

- GNIS
- USGS

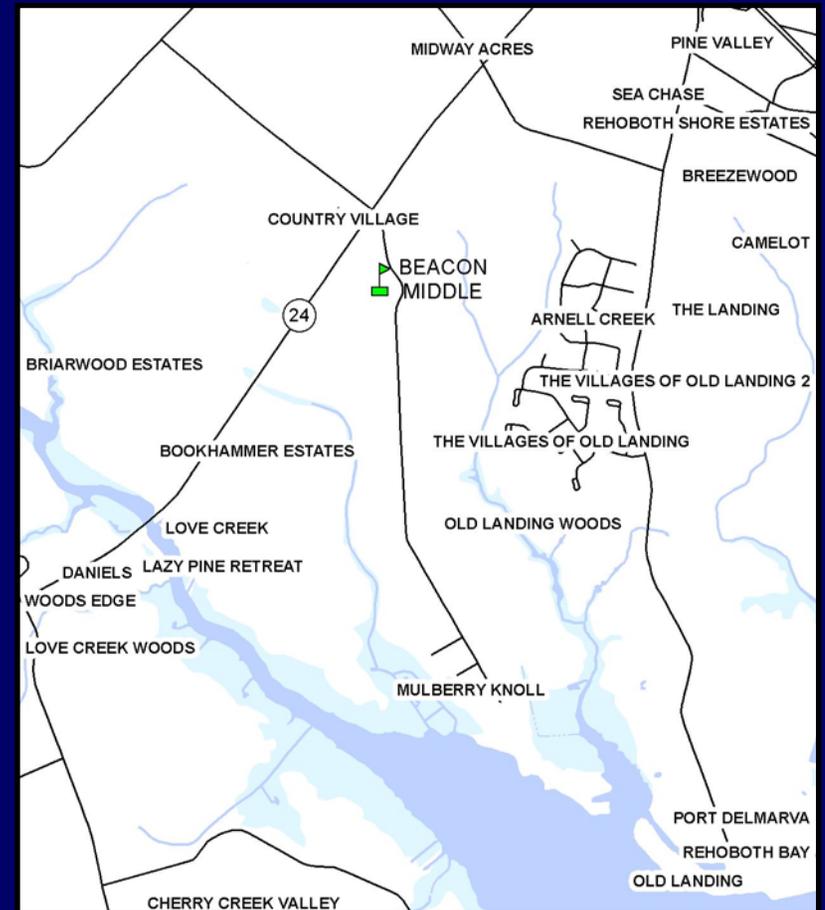


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Geographic Names

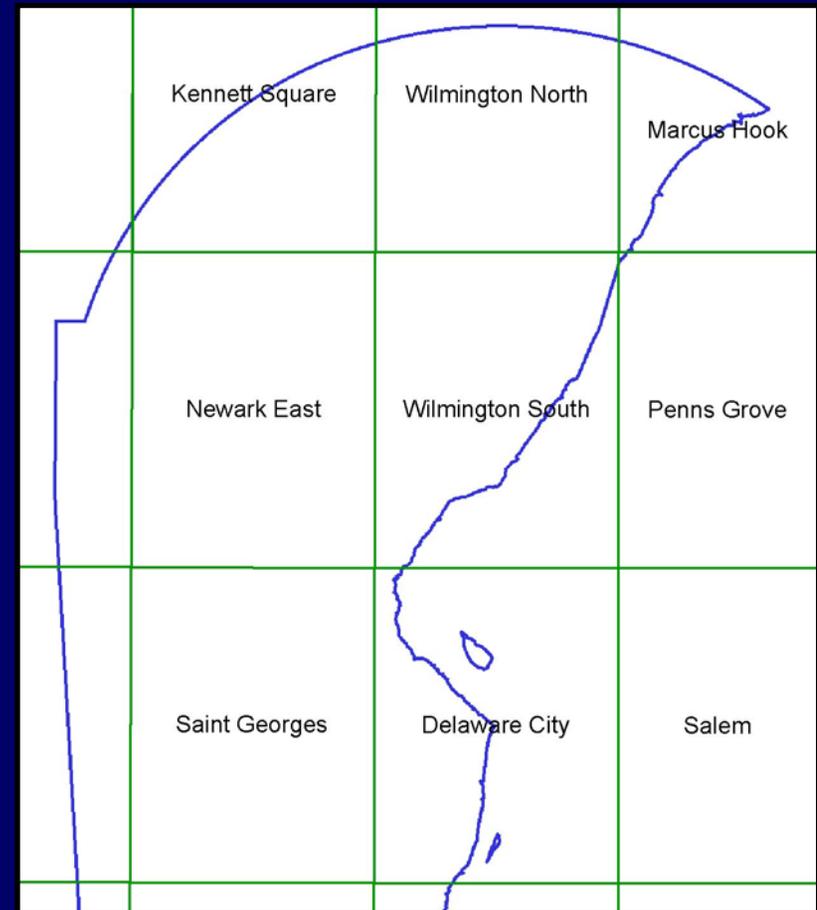
- GNIS
 - USGS
- Names as attributes
 - County Community data
 - School locations data
 - NHD (Not labeled)



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Not Framework, On DataMIL

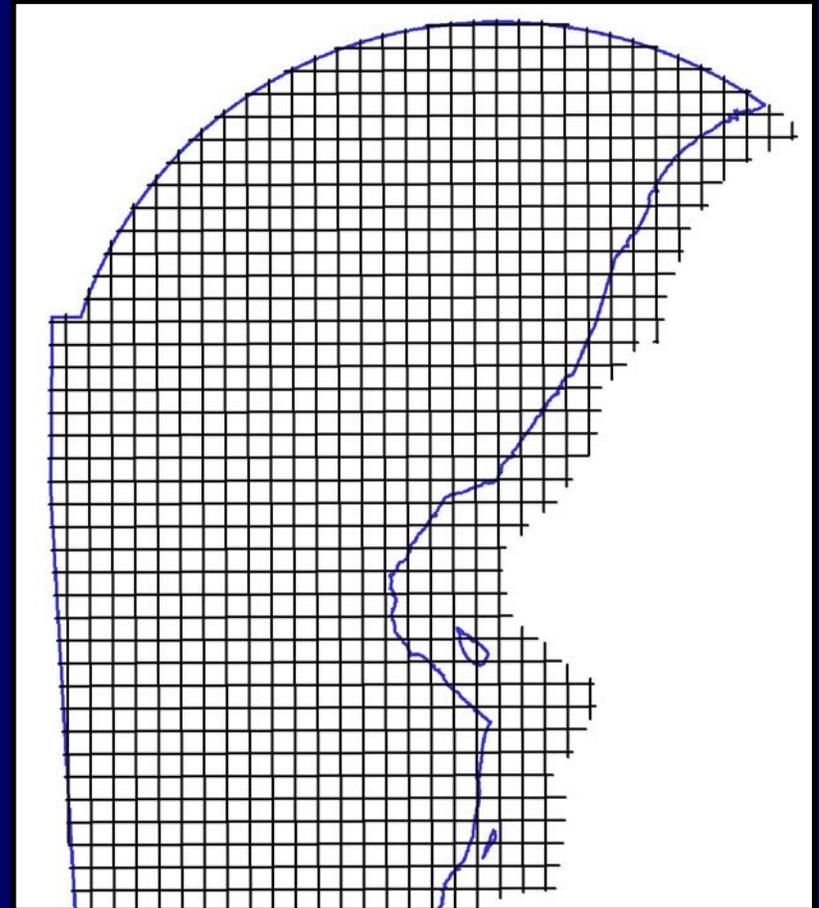
□ USGS Quadrangles



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Not Framework, On DataMIL

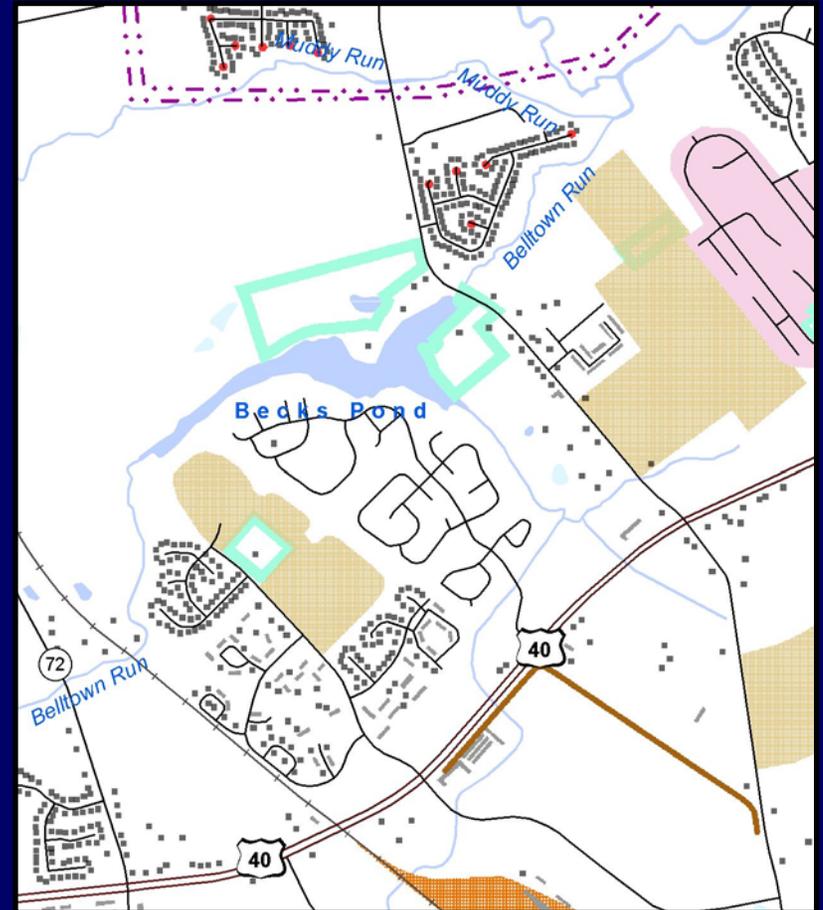
- USGS Quadrangles
- UTM Grid



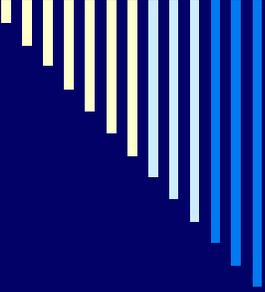
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Not Framework, On DataMIL

- USGS Quadrangles
- UTM Grid
- Miscellaneous Features
 - Needed for recreation of Topos



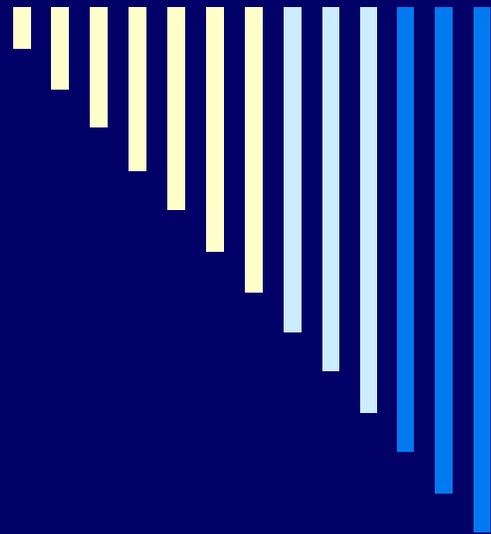
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Now What?

- Time for a new Framework Working Group
 - Review Existing Framework in detail
 - Recommend changes to DGDC
- DGDC to consider in 2006
- Recommendations to GIS Council

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The Delaware Spatial Data Framework

A Review

November 18, 2005

November 18, 2005

