

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

D R A F T Meeting Summary
Quarterly DGDC/SMAC Meeting
9:00 a.m., November 7, 2003
House Hearing Room
Legislative Hall
Dover, DE

Attendance List:

Mike Mahaffie	State Planning Coord.
Sandy Schenck	DGS
Lillian Wang	DGS
John Watson.....	DGS
Paul Sample	Legislative Council
Dick Sacher	UD/RDMS
John Callahan.....	UD/RDMS
John Laznik.....	UD/CADSR
Shelly McCoy	UD/Morris Library
Andrew Homsey.....	UD/WRA
Vince Rucinski.....	DeIDOT
Chad Lauderbaugh	DeIDOT
George Kent.....	DeIDOT
Mollie Raley.....	DeIDOT
Tripp Fischer.....	DNREC
Debbie Sullivan.....	DNREC
Brian Bollas	RKK
Kevin Hickman.....	DAFB
Simon Lowe	DAFB
Jim Hoff.....	DAFB
Lia Verbonitz.....	River Basin Eng.
Bernie Yacobucci	WILMAPCO
Bryan Pariseault.....	URS
Mary Harper	SHPO
Cheryl Alt.....	TetraTech
David Beattie.....	Wilmington
Wendy Modzelewski.....	DCET
George Yocher	Div. of Public Health
Jim Domorod.....	Div. of Public Health
Dave Gula	DTC
Joe Watson	DTC
Roger Barlow.....	USGS
Michael Hanna.....	Urban Engineers
Patrick Susi	New Castle Co.
Tim Westbrook.....	New Castle Co.
Brian Smith.....	GeoDecisions
Dean Holden.....	CABE Associates
Angela DiFrancisco.....	CABE Associates
Seth Van Aiken.....	ESRI

Welcome and Introductions

Mike Mahaffie began the meeting at 9:02 a.m. The meeting started with attendees introducing themselves.

Information Updates

Cadastral/Transportation Standards

Mike Mahaffie noted that progress is being made in the effort to draft statewide cadastral data standards. Tim Westbrook, who is leading the drafting group, noted that a draft document is under review.

Sandy Scheck gave a brief update on work by the USGS to align road centerline data to the new orthophotography. He also explained efforts to use this project to check some attribute data. Sandy is working with Vince Rucinski, at DeIDOT, to make sure that the USGS work meets Delaware's needs.

On a related note, Sandy gave an update on work by the USGS Boundary Section to create a new, very accurate boundary line for the state of Delaware. Sandy said that the new line work will be highly accurate for the boundary lines between Delaware and Maryland and between Delaware and Pennsylvania, since the lines have been mathematically computed using the State Boundary Monuments. More problematic are the lines that mark the boundary between Delaware and New Jersey, which run along the mean low water line on

the New Jersey side, as it existed in 1934, and out in open waters of the Delaware Bay an Atlantic Ocean. It was suggested that Sandy give amore formal update at the next DGDC meeting.

2002 Ortho Distribution

Mike Mahaffie reported that, after much delay, state Homeland Security officials have approved release of a simplified version of the 2002 orthos via the DataMIL. As outlined in the Recommended Public Dissemination Strategy (attached) that he handed out, the orthos have been resampled to a pixel resolution of 1-meter, which matches orthos that have been available on-line for some time. The Dover Air Base and the Port of Wilmington have been further simplified to 10-meter pixel resolution.

GIS Day

Debbie Sullivan reported that there are no large-scale GIS Day activities planned, but that she will do an activity at the Dover Library. There is also going to be a GIS Day event at the Franklin Institute, in Philadelphia. Debbie asked that anyone who plans to do something for GIS Day let her know. Seth Van Aiken volunteered GIS Day materials from ESRI. Those interested should contact the ESRI offices at (610) 337-8380.

DataMIL Migration

Mike Mahaffie gave an overview of a proposal, now under consideration by budget officials, to migrate the DataMIL from its research and development environment the University of Delaware Research and Data Management Services office to a production environment at the Department of Technology and Information, with management responsibilities at DGS under guidance by the Delaware Spatial data implementation team.

The 2004 Delaware GIS Conference

John Callahan gave an overview of plans for the 2004 Delaware GIS Conference, to be held on April 20 at the Dover Downs Hotel and Convention Center. This will be the fifth annual conference. The theme is a "GeoSpatial Barn Raising", which reflects the sense of community and working together that is found in the Delaware GIS Community.

John noted that there will be both presentations and a series of panel discussions on special-interest topics, to broaden the input of participants in the conference. There was some discussion of ways to make these panels work and support for the idea from those at the meeting. There were several ideas for topics. There was also discussion of whether to have pre- or post-conference workshops and whether to add another award to the Conference Plenary Session.

The conference web site is <http://www.state.de.us/planning/gis2004/>. There will be messages on the DGDC listserv soliciting more input.

The Delaware Center for Educational Technology (DCET)

Wendy Modzelewski gave an overview of the Center, which was originally created to help wire Delaware's public schools for internet access. The Center has grown into a coordinator of educational technology and technology policy for schools. The Center offers training and a discussion forum and is similar to the DGDC in some ways.

Wendy noted that members of the DGDC community had given a well-received presentation on GIS and GPS at an October professional development day. The DCET now has a traveling GPS lab available for use by schools. Wendy hopes members of the DGDC can help schools make full use of the lab.

The Center will present the 2004 Delaware Instructional Technology Conference in April of 2004, in Dover. Details on the Conference are on-line at <http://www.dcet.k12.de.us/ditc/>.

Mike Mahaffie added that the prospects of on-going partnerships between DCET and DGDC members are exciting and will help with DGDC's desire to bring GIS into Delaware's Classrooms.

DeIDOT Mapping/GIS Reorganization

Vince Rucinski gave an update on changes in GIS use and organization within DeIDOT. DeIDOT has centralized GIS coordination within its Planning section, under Vince, who will bring his experience from DeIDOT's Information Technology section and combine it with that of GIS users in Planning and with George Kent's cartography staff in DeIDOT Mapping.

Some of the projects this group is now working on are:

- Urbanized Boundary Updates – Mapping urban areas, based on census data and local input, to guide transportation planning and funding.
- NEPA Compliance – Tracking DeIDOT projects in relation to regulatory issues such as environmental concerns and social justice concerns.
- Sidewalk Inventory – The mapping of non-motorized transportation infrastructure, in conjunction with WILMACO, featured as part of the August DGDC meeting.
- Excess Property – Working with the DeIDOT real estate section to better manage DeIDOT-owned properties.
- Cartographic Products – Migrating the cartography shop to a GIS-based operation.
- Data Conversion – Converting legacy data from traffic impact studies to GIS data.
- Public Safety Data – Working to better store and use data on traffic accidents and other safety issues.

Vince also noted that GeoDecisions will be working closely with DeIDOT's Information technology staff to enable this work. Brian Smith, of GeoDecisions, added that DeIDOT is exploring ideas around putting more of its data on-line, in an approach similar to the DataMIL and to DNREC's Environmental Navigator. Brian also mentioned that DeIDOT IT is considering a bulk-geocoding system and a routing application.

Using Spatial Analyst to Update the State Strategies Map

Mike Mahaffie gave a presentation (attached) on a project he working on, with Andrew Homsey of the UD Water Resources Agency, to use spatial analysis to guide the Office of State Planning Coordination's update of the *State Strategies for Policies and*

Spending maps. Mike hoped to use the meeting to audition a presentation that he expects to have to make many times over the next several months.

The project involves collecting as many data sets as possible that reflect one of three things about given geographies: that they are “out of play” for development, that they are favored for development or that they are not favored for development. The project uses spatial analysis to combine these data sets for all parts of the state and to create a grid-based output in which each grid cell has a value reflecting the extent to which it is either favored or not favored for development. The scores are derived by adding all favored factors and subtracting all not-favored factors. Lands that were judged to be ‘out of play’ are taken out of the analysis.

This analysis will yield a draft map that state planners will take out for discussion among state agencies, county governments., local governments and the public. It is expected to be approved by the end of June 2004.

Wrap Up

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

Recommended Public Dissemination Strategy Delaware 2002 Orthophotography

Summary

Delaware's 2002 orthophotography should be made available on-line and via publication at a reduced resolution to reduce potential security risks. The full-resolution form of the orthophotography should be available to federal, state and local government agencies for internal use. The full-resolution data set may also be made available to other data users on a limited basis after review by state officials. Use of the full resolution data will be subject to an acceptable use policy developed by the Delaware Spatial Data Implementation Team and the Department of Safety and Homeland Security.

Background

The state of Delaware, via the Delaware Spatial Data Implementation Team (I-Team), has acquired statewide false-color infrared digital orthophotography at a map scale of 1:2400 with a 0.25 meter (approximately 1-foot) pixel resolution. The photography was collected in early spring, 2002. It is stored as 2010 tiles (approx. 1-kilometer square) and takes up 67 DVDs. The 2002 imagery was paid for by several state agencies and one Delaware County and was intended for use by state, county and local agencies as well as for public access over the internet via the Delaware Data Mapping and Integration Laboratory (DataMIL).

The 2002 orthophotography is part of a series of aerial photography projects that included data collection in 1984, 1992 and 1997. The 1997 orthophotography, which is at a map scale of 1:24,000 with a 1-meter resolution, is currently available on-line via the DataMIL. The I-Team has discussed continuing the series with additional data collection in 2005 or 2007.

Security Concerns

State Homeland Security and Public Safety officials are concerned that making the orthophotography publicly available may pose a security risk by giving terrorists and/or criminals the ability to perform reconnaissance of targets without having to physically visit target sites. It is generally acknowledged that similar data, especially at the 1-meter resolution, is already widely available from several public and private on-line sources. What is of concern is the added clarity of the high-resolution orthophotography. This may be an added risk in areas that include such facilities as military installations and high-risk land-uses such as oil refineries.

Public Dissemination Strategy

1-Meter Resolution Orthophotography on the Delaware DataMIL

A lower-resolution version (1-meter) will be made available for public use on the DataMIL. The Port of Wilmington and the Dover Air Force Base will be simplified further to a 10-meter resolution. This will match the resolution of the 1997 orthophotography now available on the DataMIL. It also matches the resolution of

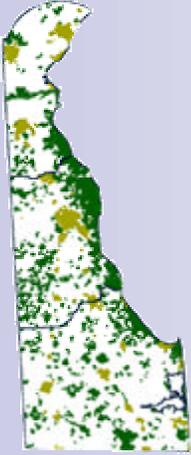
much of the orthophotography of Delaware and surrounding areas that is available on-line from the federal government, other states, and the private sector. As such, it should not increase the security risk. This application will also fulfill many of the needs of GIS-users requesting the photography for graphic backdrop for their GIS publications.

Full Resolution Orthophotography for Internal Use

The full resolution form (0.25-meter) of the orthophotography will be available to federal, state and local government agencies as well as to the academic sector for internal use, subject to an acceptable use policy developed by the Delaware Spatial Data Implementation Team and the Department of Safety and Homeland Security. This will allow full use of the orthophotography for planning and data-development purposes, as originally intended. The lower-resolution version should be used for publication of map-products and for on-line and public display purposes.

Full Resolution Orthophotography for Limited External Use

The full-resolution orthophotography may also be made available to other data users on a limited basis, by request, after review by state officials. These users will likely include private sector land development firms, community and not-for-profit groups, and academic users. Applicants will be required to make a formal request and will provide enough information to allow state officials to determine their legitimacy, need, and appropriate uses of the orthophotography. Use will be subject to an acceptable use policy developed by the Delaware Spatial Data Implementation Team and the Department of Safety and Homeland Security.



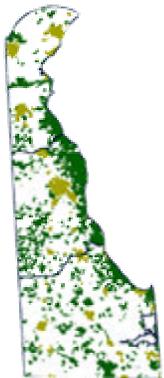
Getting to the Detailed Level

A Spatial Data Model to
Update the *State Strategies
for Policies and Spending*



An Outline

- What we're up to
- The old *State Strategies* map
- And what's wrong with it
- The Spatial Data Model approach
 - Process
 - Data categories
 - Data presentation



What we're up to

- The *State Strategies for Policies and Spending* (1999)
- Guide state spending to influence growth patterns
- To be updated every 5 years
 - By the end of next year



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Shaping Delaware's Future: Managing Growth in 21st Century Delaware Strategies for State Policies and Spending

Approved

12/23/99

By the Governor's Cabinet
Committee on State Planning Issues



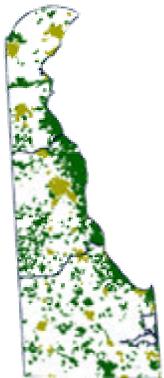
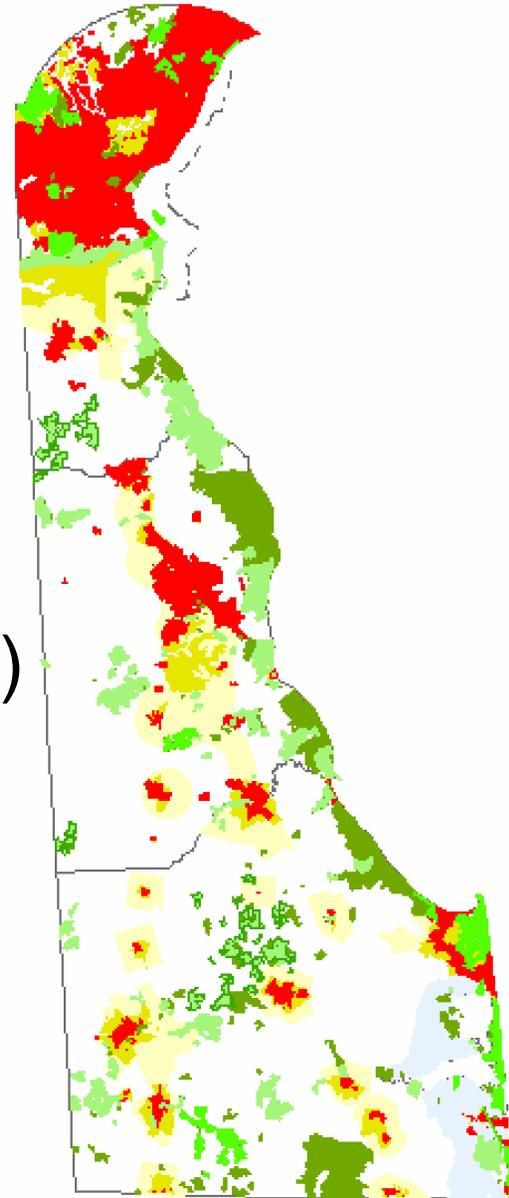
The Governor's Cabinet Committee on State Planning Issues
The Delaware Office of State Planning Coordination

Third Floor, Suite 7, Thomas Collins Building
540 South DuPont Highway, Dover, DE, 19901
Phone: (302) 739-3099 Fax: (302) 739-6958
www.state.de.us/planning

The old map

■ Five Basic Levels

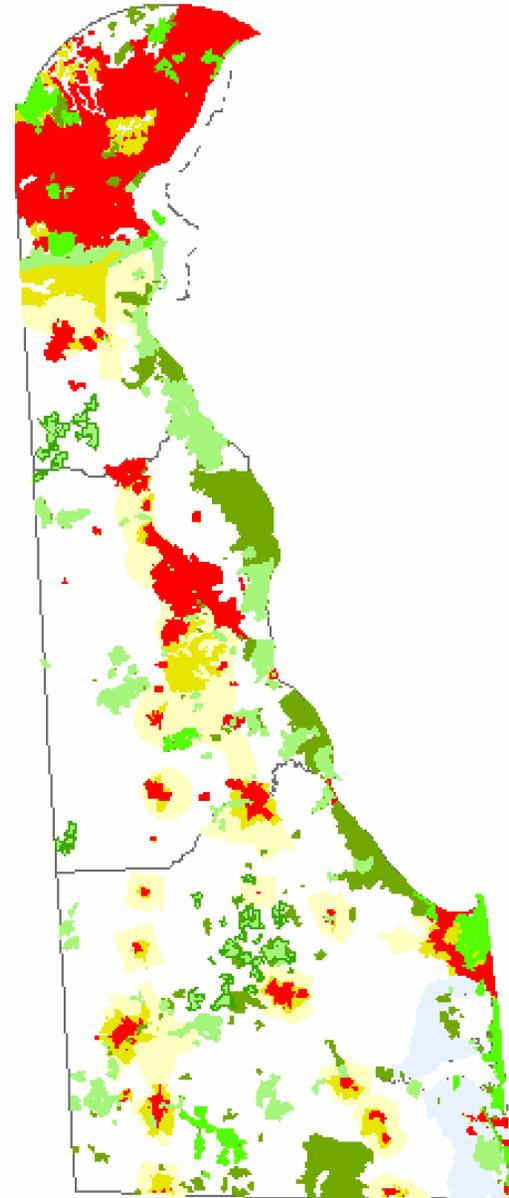
- Community (Red)
- Developing (Mustard)
- Secondary Developing (Yellow)
- Environmentally Sensitive Developing (Light Blue)
- Rural (White)



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The old map

- Created by combining several state agency policy data sets
- Edited based on local government discussions
- Limited connection between input data and end result



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So, what was wrong with it?

- Not much, really
- The 1999 *Strategies* map was successful as a starting point, but:
 - Focused on the growth side of the equation
 - Lacked extensive local data inputs
 - Made more sense at the state and county levels

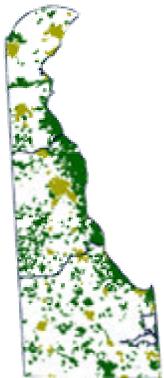
- We're ready to do better





The update process

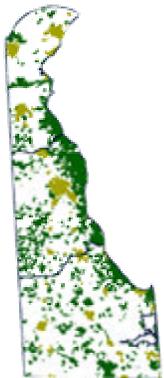
- Spatial analysis to combine data sets relating to land use
 - State agency data
 - County data
 - Municipal comprehensive plan data
 - Private conservation organization data





The update process

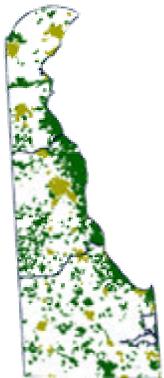
- Discuss draft with state agencies
 - Collect additional data sets to meet concerns
 - Re-run model
- Discuss draft with county governments
 - Collect additional data sets to meet concerns
 - Re-run model





The update process

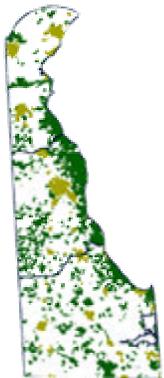
- Absorption analysis
- Discuss draft with municipal governments
 - Collect additional data sets to meet concerns
 - Re-run model
- Public review and approval process
 - Cabinet Committee on State Policies and Spending
 - Livable Delaware Advisory Committee



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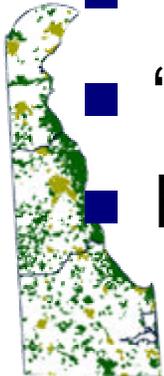
The data categories

- Lands that are “Out of Play”
- Lands for which growth is not favored
 - “Preservation Focus”
- Lands for which growth is favored
 - “Development Intensity”

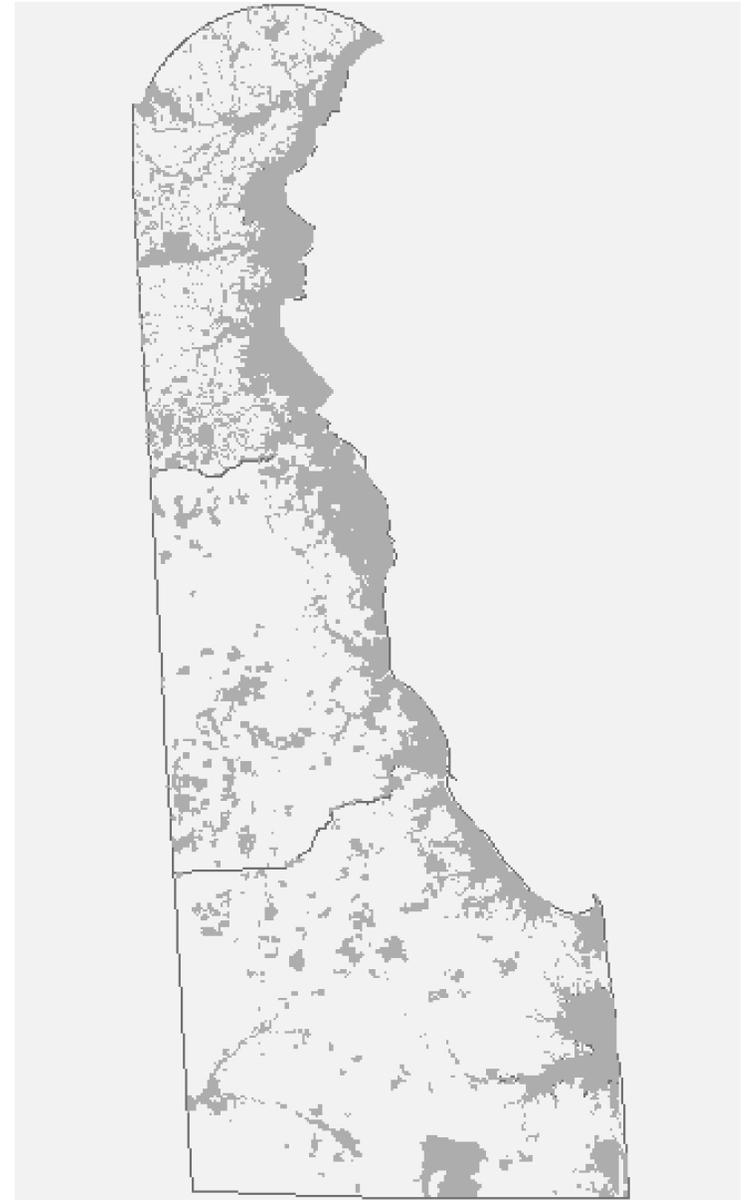


“Out of Play”

- PDRs
- Parks
- State-owned lands
- Federal lands
- Conservation easements
- Tidal wetlands
- “Constrained” lands
- Rights of way



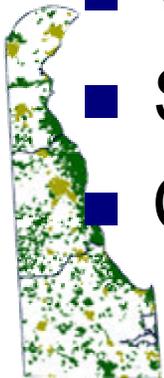
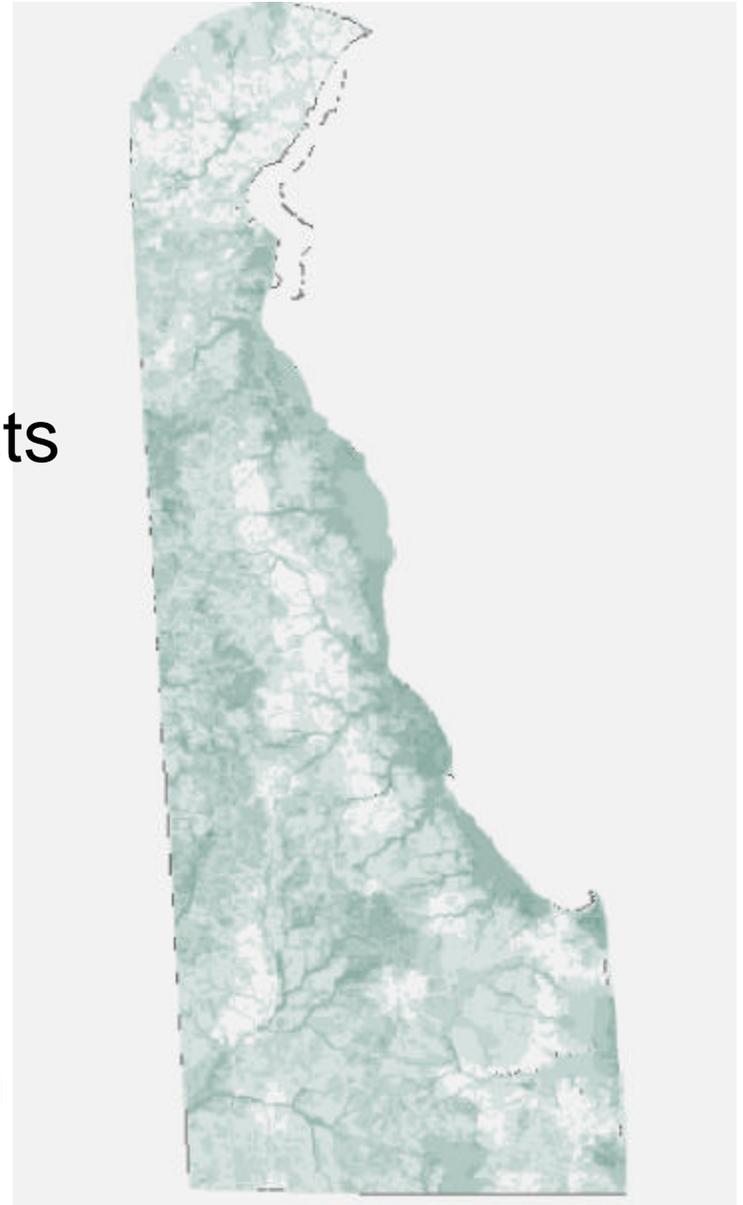
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Growth not favored

- Agland preservation districts
- Highest value farms and forests
- Conservation corridors
- Wetlands (buffered)
- Floodplains
- Water recharge areas
- State resource areas
- Corridor capacity preservation



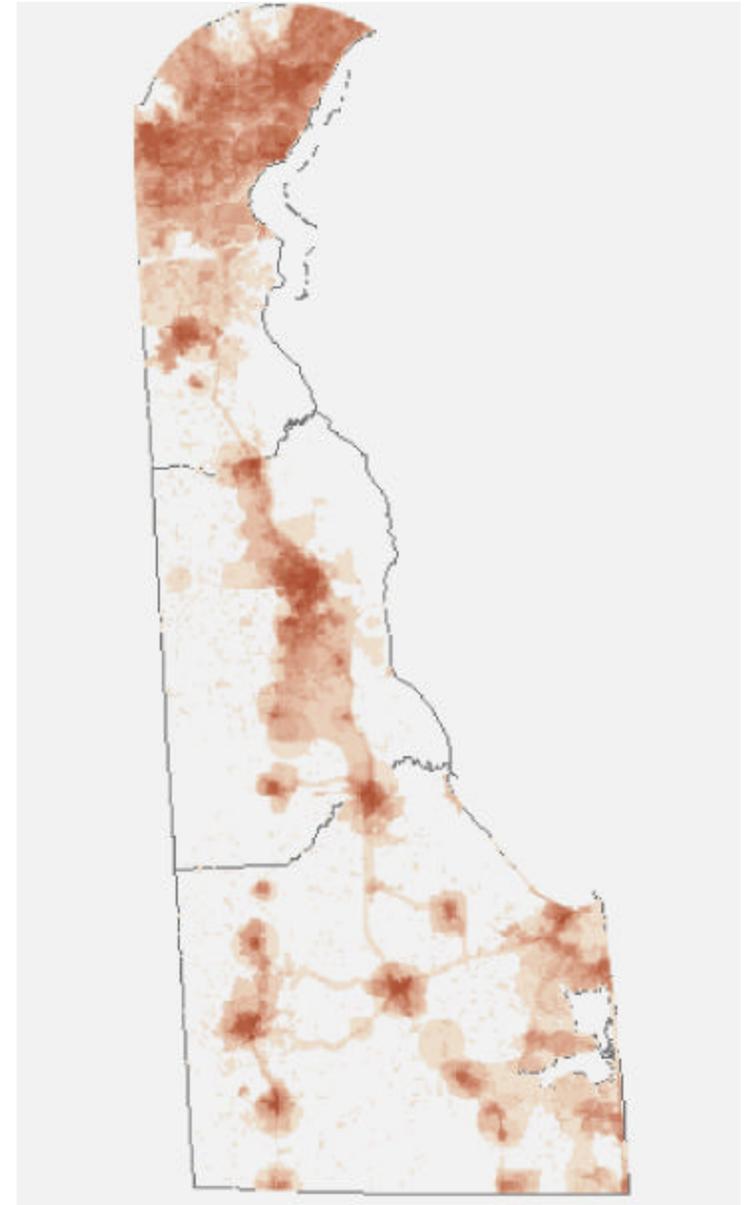
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Growth favored

- County development districts
- Municipalities and annexation areas
- Sewer and water districts
- Served by transit
- Already built
- Proposed for development
- Lands near schools



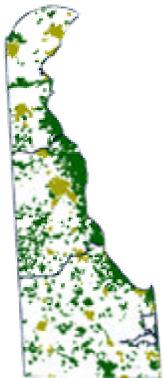
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The grid-cell approach

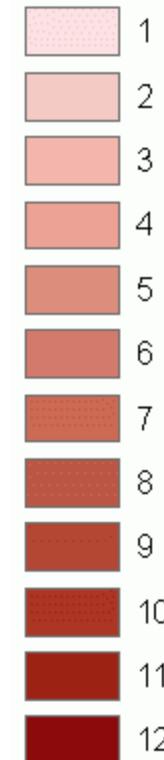
- A grid of 30-meter squares statewide
- Cells primarily “Out of Play” are removed from the model
- Remaining cells assigned a combined value
 - Plus factor for “favoring”
 - Minus factor for “not favoring”



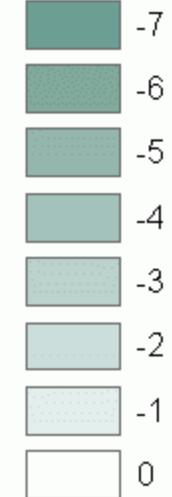
The result

- A statewide grid
- Each cell with a value in a range reflecting the inputs
- Most favored for growth on the plus side
- Least favored for growth on the minus side

Development Focus

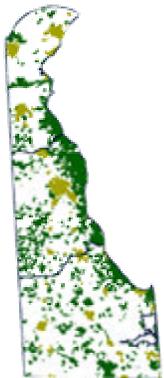
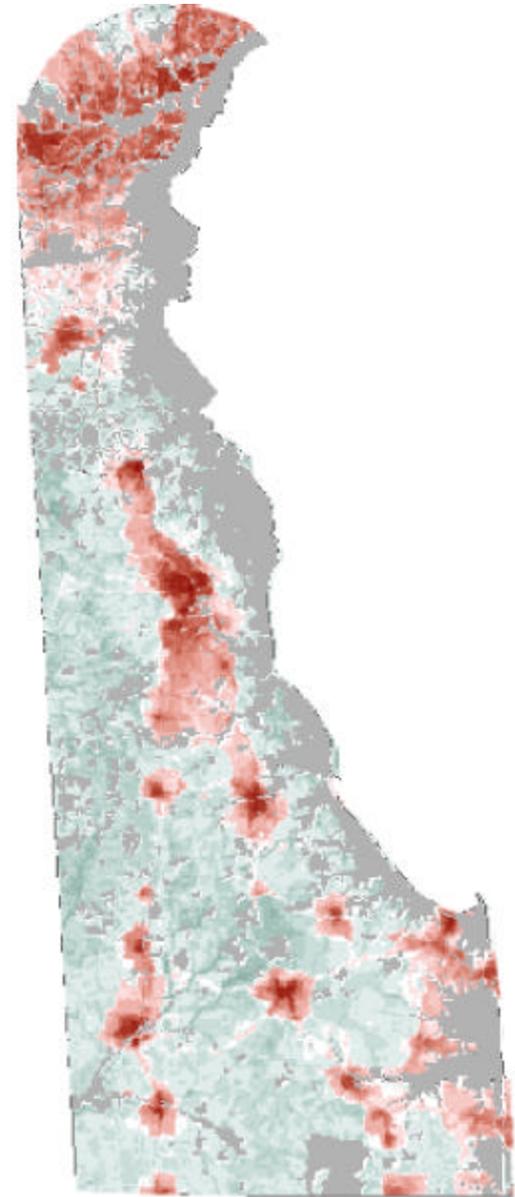


Preservation Focus



Put it all together...

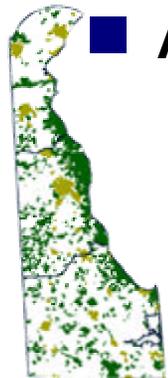
- Data sets from a wide variety of sources combined
- Balance conflicting policies
- Reflects both development and preservation focus



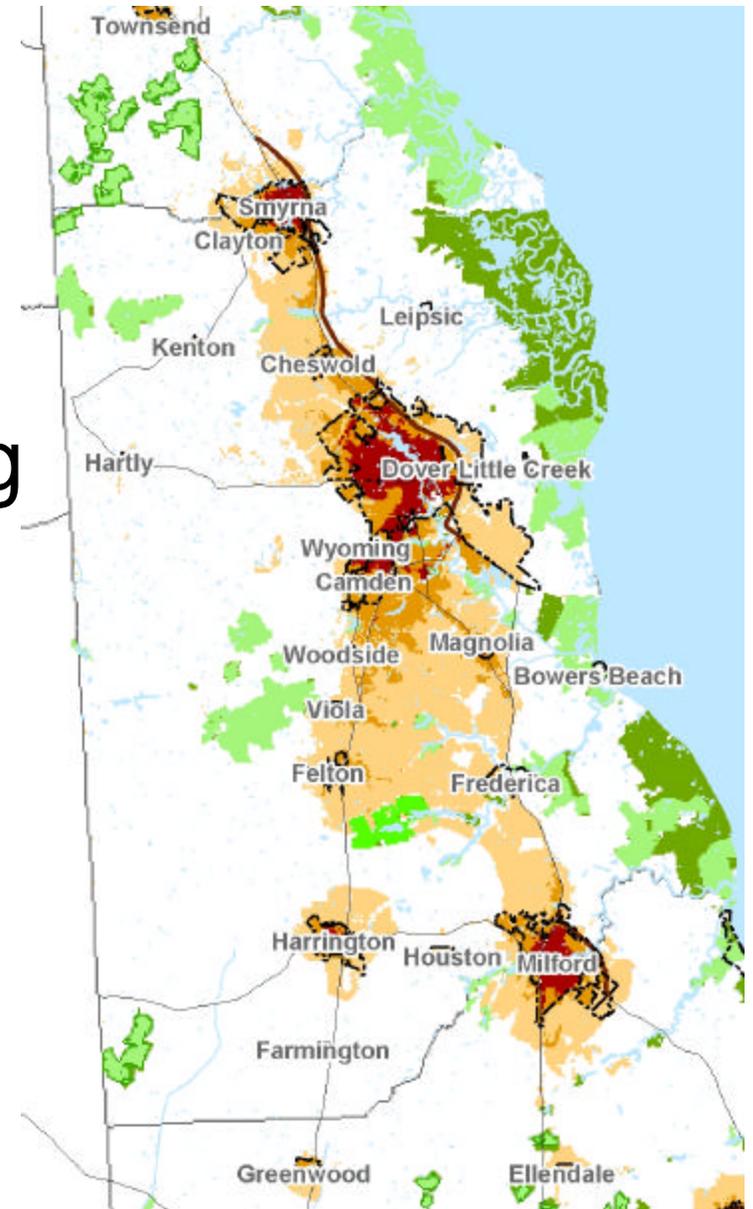
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Aggregate scores

- Highest -- Community
- Next highest -- Developing
- Lowest in the positive range -- Secondary Developing
- All others -- Rural



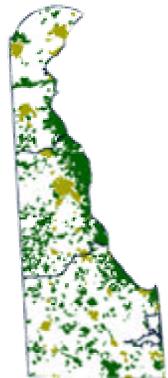
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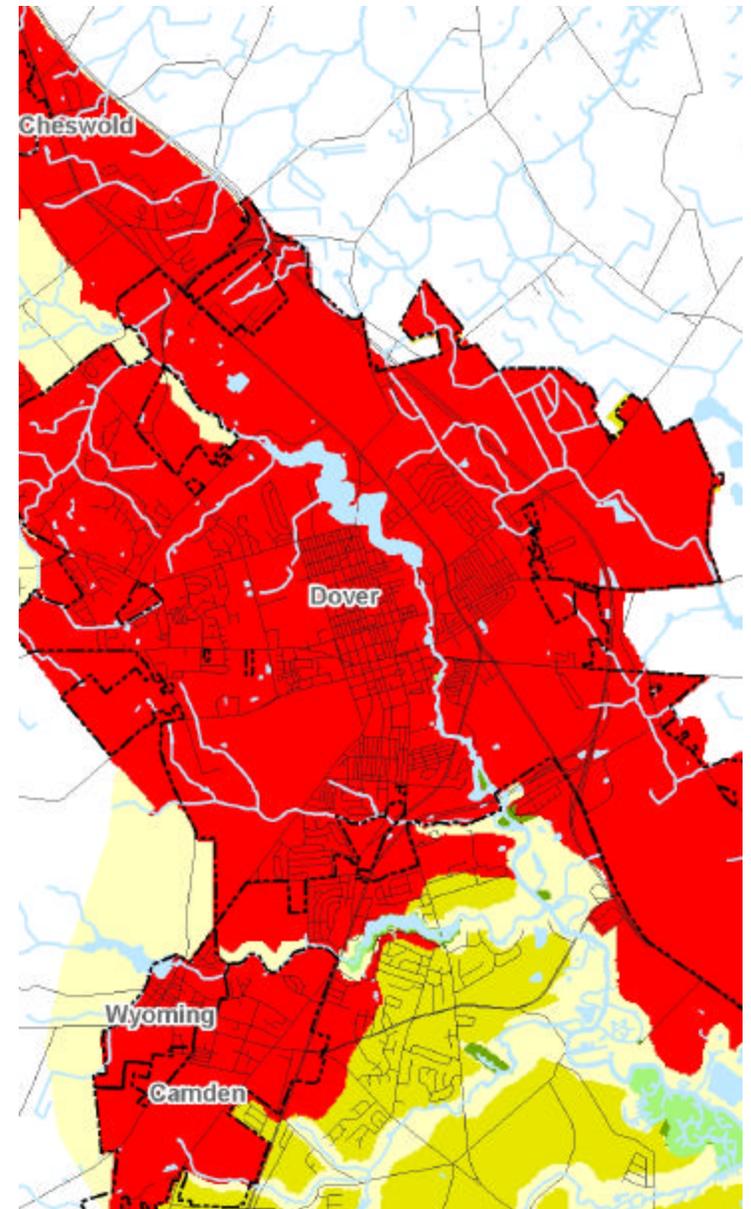
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Added detail

- Existing strategies lack detail at larger scales



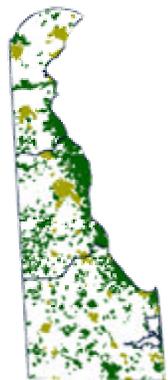
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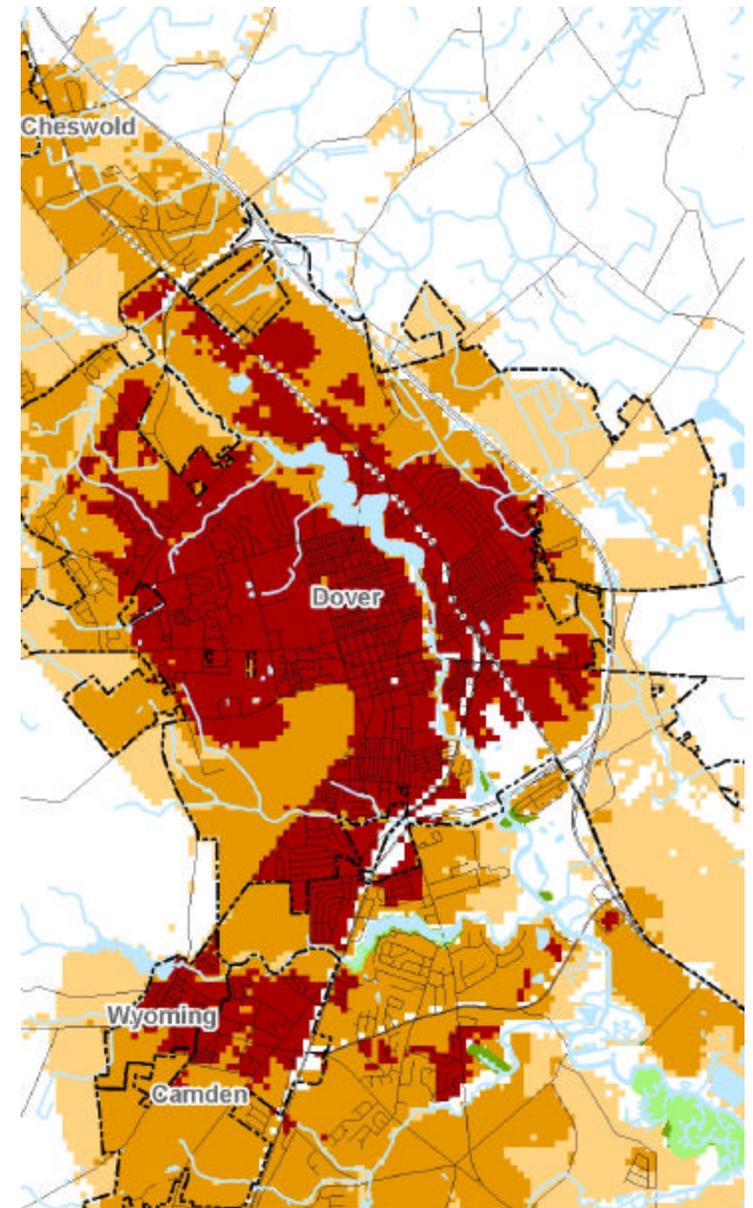
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Added detail

- Existing strategies lack detail at larger scales
- New version more detailed, and



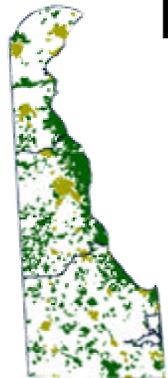
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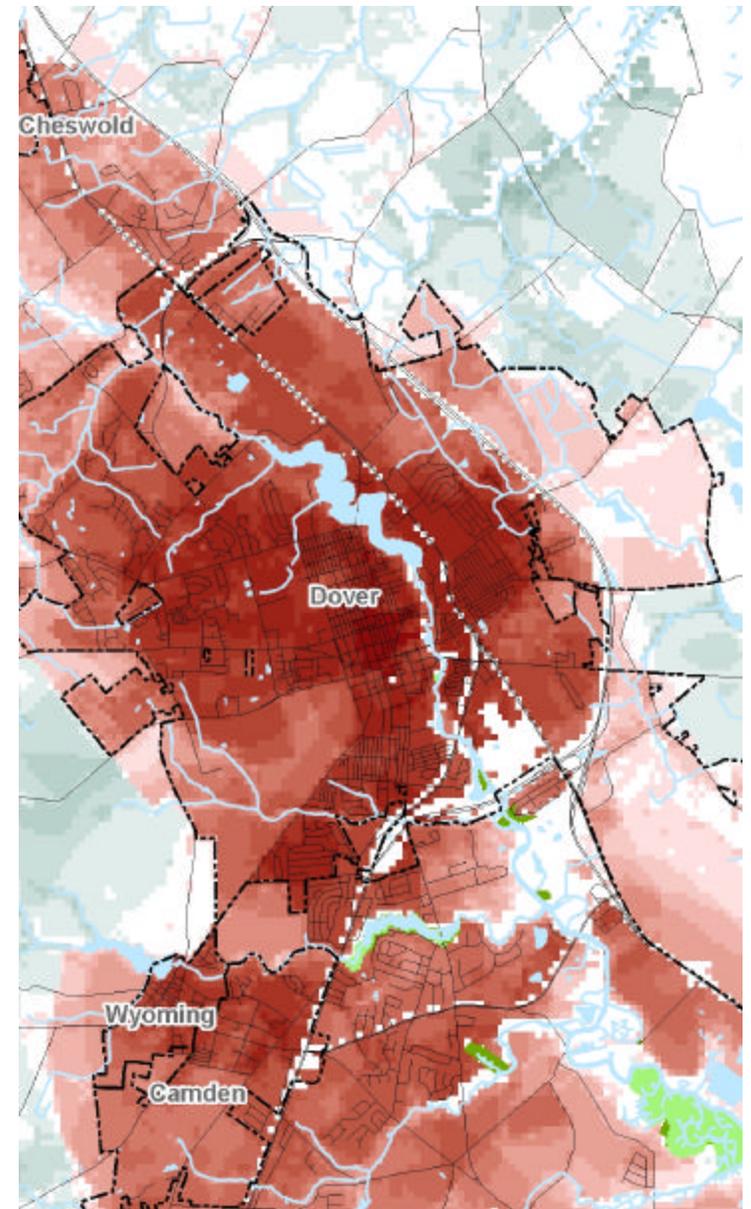
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Added detail

- Existing strategies lack detail at larger scales
- New version more detailed, and
- Can be viewed at full resolution



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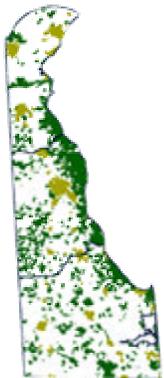


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Many thanks

- To state data providers
- To county data providers
- Mostly to Andrew Homsey and Vern Svatos (WRA, IPA, CHEPP, UD)



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