Maryland's Geospatial Program
Where we are going?
How do we get there from where we are?

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Background and Qualifications

- GIO, Maryland (1.5 months)
  - Much of that time traveling the state
- GIO, Washington, DC (8 years)
- Member, National Geospatial Advisory Committee* (3 years while in DC job)
- GIS Manager, Michael Baker Jr., Inc. (6 years)
- Community Planner GIS, National Capital Planning Commission
- Master of City Planning, GA Tech
- BA, Vanderbilt
- Montgomery County, Maryland, resident since 1995

* A lot of NGAC material/ideas used in this presentation.

Disclaimer

- This presentation is aspirational not operational.
  - Believe it when you see it.
  - If you like something, help make it so.
  - If you don't like something, let's talk.

Where are we going?

We will know we are there when:

- Marylanders, including state agencies and local governments, take for granted a geospatial infrastructure that serves to foster economic vitality, manage resources, educate, save and restore the natural environment, advance health initiatives, protect the homeland, support science, and govern the state;

We will know we are there when:

- Authoritative and interoperable geospatial information and tools are available, accessible, shared, and routinely used;

We will know we are there when:

- All levels of government operate under a shared governance structure, share a common set of goals and objectives, coordinate and leverage each other's efforts;

We will know we are there when:

• The roles and responsibilities of all partners are well defined and participants have <u>incentives</u> and are accountable for producing results;

We will know we are there when:

• Partners work collaboratively with a common set of policies, procedures, standards, and data models, yet maintain enough independence to be highly innovative and responsive to their specific missions;

We will know we are there when:

- The value of Maryland's geospatial resources is so well understood by citizens and elected officials that its ongoing development is easily and continuously sustained.
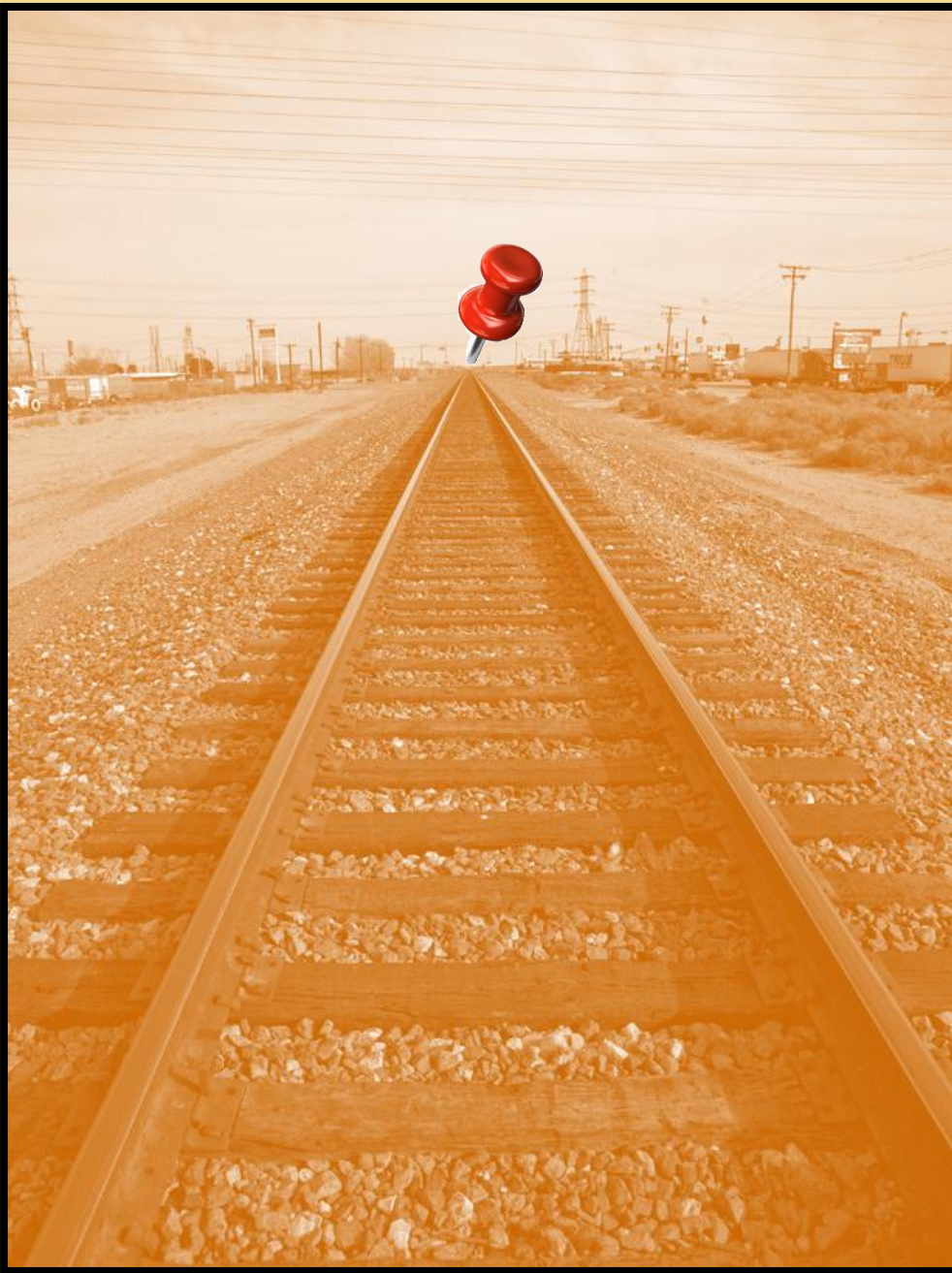
We can debate and improve those words, but we know the direction we are traveling.

We know we have a long way to go, but the place to start is with an honest assessment of our current situation.

Where are we now?
Maryland Geospatial Program **SWOT** Analysis

S

Strengths
- MSGIC volunteerism
- Governor O'Malley
- iMap: executive order, data, services, participation
- Universities & Colleges
- 911 Numbers Board
- Agency competence & capabilities

W

Weaknesses
- The common services problem
- Decentralized IT infastructure (local offices of state agencies)
- Duplicative & decentralized data
- Pass-the-hat funding model
- Role of contractors & employees
- Maintenance plan
- Busy making small decisions

O

Opportunities
- GIO now in Governor's office
- StateStat, BayStat
- ESRI enterprise license
- Network Maryland / SwGI
- Budget shortfalls
- Global geospatial revolution
- Underutilized private sector
- Statewide property assessment

T

Threats
- O'Malley will move on
- Overlap iMap & MSGIC
- State/local governments ignoring each other
- Data selling and licensing
- Budget shortfalls
- Tyranny of good ideas
- Hidden costs of coordination

Where we are? Sustainable funding

Statewide successes	Funding situation	
iMap	1/3 of funding from BRAC is gone; remaining funds from DNR (real estate transfer fund) dwindling and likely gone July 1, 2012.	
Ortho program	Likely to be sustained by 911 Numbers Board.	
OSPREY	Out of money, will compete for declining homeland security funds.	
Property View	Dependent on dwindling sales and is unsustainable in its current form.	

To reach our vision: 4 priorities

1. **<u>Improve the iMap executive order.</u>** Make our state geospatial program more ambitious, inclusive.

2. **<u>Establish a Geospatial Information Office with sustainable funding.</u>** Provide and manage enterprise services and data for the common good.

3. **<u>Champion open data in Maryland.</u>** Make geospatial data easy to find, obtain, and use.

4. **<u>Work as a team of state agencies and local governments to develop and maintain the very best geospatial data of any state.</u>** (addresses, transportation networks, photography, land ownership, live data feeds...)

1

Improve the iMap Executive Order

More Ambitious and Inclusive

The State of Maryland
Executive Department

WHEREAS,   The Maryland Integrated Map (MD iMap) is a statewide basemap that will serve Maryland agencies and be a model for other states;

WHEREAS,   MD iMap will enable State agencies to better implement and coordinate policies and programs across the State;

Departments of Transportation, Environment, Natural Resources and Planning, has developed plans for the key elements of MD iMap, including transportation features, imagery, elevations, parks and other protected lands, feature/place names and boundaries;

WHEREAS,   A collaborative effort has been made by multiple levels of government (State, regional, county and municipal) to construct the MD iMap program, and representatives from each level of government are participating in the development of MD iMap policies, procedures, standards and guidance; and

WHEREAS,   To fully implement an effective MD iMap program, it is necessary to establish an organizational structure to guide and coordinate interagency and intergovernmental efforts.
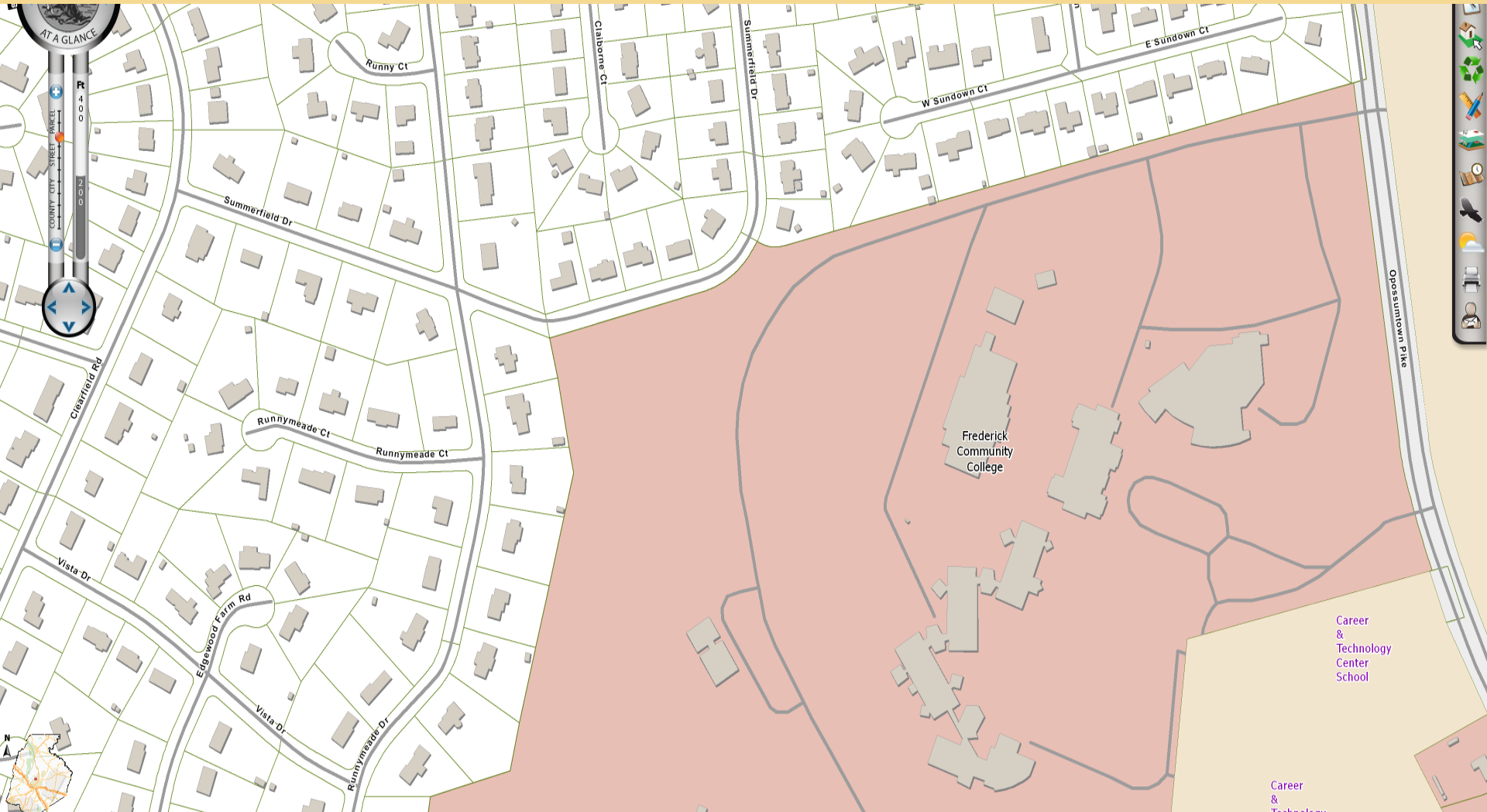
IN ME BY THE CONSTITUTION AND LAWS OF

A.   Established. There is an Executive Committee to implement the Maryland Integrated Map (MD iMap).

With only state agencies

Executive Order 01.01.2009.20

Local data is often the best data
Frederick County Web Site

Summary of proposed executive order changes

- **Expand the mission "to build an enterprise system of systems"** with iMap as the foundation.
  - In broad strokes (that will stand the test of time) describe the ambitions and limits of such a system.
- **Ensure local government participation by appointing municipal/county representatives from each of these regions:**
  - Western, DC vicinity, Baltimore vicinity, Southern, Eastern Shore (upper/lower?)
  - Nominations to be solicited from MSGIC, MML, MACO, public safety associations.
- **Ensure extra-governmental participation, setting aside appointments for non-government members**.
  - Nominations to be solicited from universities, Maryland Society of Surveyors. A&E community, and MSGIC…

2

Establish a Geospatial Information Office with sustainable funding

An enterprise system professionally operated and maintained

Maryland Geospatial Information Office

Mission (based on DC GIS)

Part 1

The mission of the Maryland Geographic Information Office (MD GIO) is to improve the quality and lower the cost of services, through collective investment in and effective application of geospatial data and systems.

Part 2

Furthermore, MD GIO will reach beyond the government by making data freely and publicly available to the fullest extent possible in consideration of privacy and security.

Metrics
Measures of utilization
- Total calls to central database
- Web hits included services
- Data downloads

Measures of breadth
- Number of unique state agencies using the system
- Number of unique local governments hitting the system
- Number of local governments contributing data

Feedback
- User feedback about data and or systems

Bureaucratic Condsiderations
- Could be an agency, but much more likely within DOIT
- Physical location TBD

What we won't do
- Get between agencies and their primary customers.

Geospatial Information Personnel and Functions

Systems & Development Team

Services

- Build and maintain the next generation of server side systems (cloud or VM)
- Develop services and applications for general use and Governor's office initiatives
- Interface with IT departments, developers, who consume or publish services

Personnel / Contractors

- Developers
- Systems Architect / Administrator
- Database Administrator

Customer Service Team

Services

- Website content
- Email, social media communications
- Helpdesk, ESRI ELA support
- Requirements Analysis & Consulting
- Training
- Special interest liaisons

Personnel / Contractors

- Writer/Editor/Social Media
- Help desk, training and consulting
- Public safety liaison
- Local government liaison
- StateStat Liaison

Data Team

Services

- Maintain central data store and data distribution site
- Manage major data development projects
- Work with data creators to gather data and metadata
- Provide quality assurance and control of data and metadata
- Data aggregation and integration
- Maintain a schedule of data updates
- Leverage and support the StateStat team with data gathering and analysis

Personnel / Contractors

- GIS Analyists

MARYLAND
FOUNDED 1634

Required enterprise system elements

- Central license server on SwGI.
- Central SDE with read-only access on SwGI.
- Support of live data feeds (SwGI & Internet)
- Map Services (iMap is a great start)
  - Features
  - Public
  - Government (SwGI)
  - Secure
- Geocoding/Gazetteer services
- Geoprocesing services
- Managed development, staging, production environments
- Managed play area
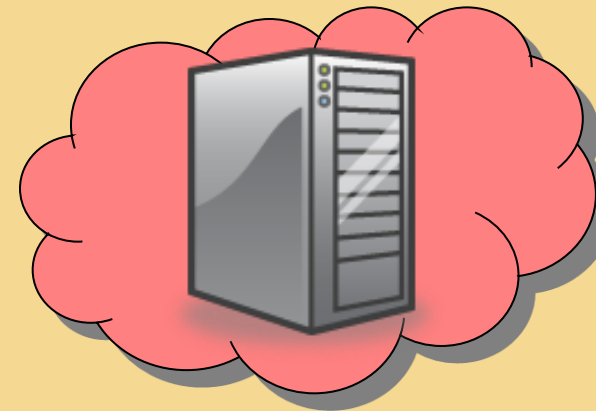
24x7x365 with published maintenance windows

MD iMap

Welcome to the Maryland iMap Portal

One Maryland-One Map

This is the gateway to all things MD iMap. Here you can discover what MD iMap is, how to access its resources, how to get your data into MD iMap, how to get MD iMap map services into your application and the standards, policies and procedures that govern its use.

Budget Map | AgPRINT | GREENPRINT | Recovery Investment

What is MD iMap?

Maryland's Internet Map - MD iMap - is a diverse and flexible "system" that provides a wide variety of products and services to the citizens and government employees in Maryland. It represents a centralized collection of the most commonly used map data, such as roads, streams, place names, government boundaries, property information and detailed imagery. These products and services assist in capturing, storing, analyzing, managing, and presenting data linked to a location. Much of the data contained in MD iMap is shared from Maryland state and local government agencies and represents the best data available. There is no cost associated with accessing and using MD iMap or the data contained in it. This site is a portal into the system, and includes:

- The goals and purposes of MD iMap
- Standards, policies, and procedures of MD iMap
- Partners that make MD iMap possible
- How to get help with MD iMap

Interactive Online Maps

ADMINISTRATION
The MD iMap Technical Committee
Standards, Policies, Procedures

TECHNICAL INFO
Information Architecture
How Data is Collected and Used

MORE RESOURCES
Concept Documents
Hurricane Irene
Ideas for MD iMap Updates
Ramona - Nationwide GIS Inventory

MDiMap Alerts
Alerts on Twitter

Stay tuned with **twitter**
Instructions for Alerts

Governor Martin O'Malley
Lt. Governor Anthony G. Brown

⚙ **Service Alerts**
- System management during the weekly maintenance window (4am - 12noon) Sunday 9/25 may result in some brief disruption of internet connection.

⚠ **MD iMap in the News**
Geographic Information Systems (GIS) technology is great in Maryland, and it just got better! GIS is a strategic, core business enabler, and a valuable analysis and communications tool state agencies use in their work with other state resources and the public. GIS mapping products are increasingly integrated in the state's accountability and business processes, as well as in publicly available applications. Virtually all of Maryland's GIS applications are built on ESRI technology platforms and products. The state has been working with ESRI to forge an Enterprise License Agreement (ELA) that covers widespread GIS software use and support across state agencies. On August 10, 2011, the Maryland Board of Public Works approved the contract. Read More...

View old News items »

📅 **Upcoming Events**
MD iMap Tech Committee Meetings are held on the 1st and 3rd Tuesdays

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STATESTAT

One Maryland Recovery Info
Maryland Maps
MD's Capital Budget Map
BayStat

Maryland Map Center « Welcome

Visit Maryland Tourism Map

Marylanders and prospective visitors can display more than 1,500 historic, cultural, natural and recreational attractions. Selecting an attraction gives descriptions, contact information and directions. Users can also customize the map to reflect their travel interests and use it as a trip planning tool.

OSPREY Emergency Mgmt. Map | AGPRINT | Restore the Bay | MD Broadband

Which Map? Select from possible layers of interest below

Agricultural Land Preservation - Arts - Arts & Entertainment Districts - Bay Critical Areas - Bicycle Routes - BRAC Zones - Breeding Bird Atlas - Broadband Providers - Broadband Service - Census Data - Community Legacy Areas - Congressional Districts - County-owned Lands - Coverage by Service Type - Cover Crops - Culture - Designated Neighborhoods - DNR Managed Lands - Drainage Basins - Ecological Areas - Education Investment - Emergency Shelters - EMS Stations - Energy Investment - Enterprise Zones - Entertainment - Environmental Trust - Environment Investment...

Governor Martin O'Malley
Lt. Governor Anthony G. Brown

Related Information
- Map Center: Welcome
- Maryland's Map Inventory
- Additional Technical Information
- County Governments
- Programatic Geographies: More Information on Layers

Most Recent Comments
- Frank Perrelli on Cycle Maryland
- Karuna Pujara on Cycle Maryland

Most Recent Posts
- Osprey: Maryland's Emergency Management Map
- Fast Track Project Screener
- Energy Maryland
- Cycle Maryland
- Chesapeake Science and Security Corridor

Welcome to Maryland .gov

YOUR STATE GOVERNMENT
Office of the Governor
State Legislature
Courts and Judicial
Offices Alphabetically
Find an Agency

⚙ **ONLINE SERVICES**
Financial Problems
Transportation
Health & Wellness

IN YOUR COUNTY
Select a county

MAPPING Maryland

County Governments
- Allegany
- Anne Arundel
- Baltimore City
- Baltimore
- Calvert
- Caroline
- Carroll
- Cecil
- Charles
- Dorchester
- Frederick
- Garrett
- Harford
- Howard
- Kent
- Montgomery
- Prince George's
- Queen Anne's
- St. Mary's
- Somerset
- Talbot
- Washington
- Wicomico
- Worcester

Maryland Services by Location

Government
- County Boards of Election
- County Election Returns
- County Social Service Offices
- County Tax Offices
- Map of Maryland's 157 Municipalities
- Departments of Public Works
- Voter Registration Information

Outdoors MD
- Find A State Park in Your County
- Map of Maryland's Parks and Forests
- Find Your County Parks & Recreation Department
- County Recycling Services
- Farmers' Markets

Business Resources
- Real Property Database Searches
- Reassessment Maps

Favorite Maps
- Maryland Tourism - Popular Destinations
- Maryland At A Glance - State Archives Map
- Create Your Own Maryland Map
- Interactive Culture & Recreation Map
- Order Free Maryland Maps
- Order Maryland Maps and Travel Guides

Interactive Mapping Tools
HistoryPrint | StateStat

MARYLAND STATE
Geographic Information Committee

PUBLICATIONS
MSGIC Newsletter
Standards & Guidelines
Business Documents
Ortho Imagery Partnership
Other Publications
PowerPoint Presentations

RELATED WEBSITES
Federal Government
State Government
Local Jurisdictions
Regional Groups
Other States
Colleges/Universities

OTHER RESOURCES
Hurricane Irene Data Sources

MSGIC

A commitment to excellence in the development and coordination of geographic information technologies.

Welcome to the Maryland State Geographic Information Committee (MSGIC) Website.

MSGIC was established by the Governor of Maryland in 1992 to help better serve the GIS community in Maryland. MSGIC members represent all levels of government, academia, regional organizations, and private industry. Through our volunteer organization, our goal is to help make GIS in Maryland better. Our focus is on providing Maryland:

- Serve as a focal point for coordination of GIS activities statewide.
- Reduce duplication of GIS efforts within Maryland.
- Support development of geographic data sets that are useful for multiple purposes, recognizing that individual entities may be responsible for developing and maintaining specific data sets.
- Develop and work to implement standards and guidelines for GIS in Maryland.
- Promote the preservation of valuable GIS data, recognizing that such data are a capital asset.

Have a good idea? Looking to get involved? This website will help guide you to some of the opportunities to help grow the use of GIS in The State of Maryland.

Join MSGIC

Governor Martin O'Malley
Lt. Governor Anthony G. Brown

News
- ESRI MUG is Dec. 5 - 7 See ESRI website for more details.
- MSGIC Chair in the News, View Baltimore Sun article
- GIS in Action, Maryland Power Outages, Lauren McDermott at Salisbury University for more details.

View old news items »

Upcoming Events
Quarterly Meetings
- Oct 19: Frederick Community College

Executive Meetings
- Oct 12

View More »

Online Services
- Ramona GIS Inventory
- MSGIC LinkedIn
- MD iMap Portal
- Baltimore City Online Maps
- Frederick County, MD
- GreenPrint
- Howard County, MD
- Maryland Mapping Resource Guide
- MERLIN Online

3

Champion open data in Maryland

Make geospatial data easy to find, obtain and use

Assuming we had an authoritative county boundary file, where would we put that file? How would we distribute it?

Banks in DC

Bicycle Count Locations	DDOT via DC GIS			
Bicycle Lane	DDOT via DC GIS			
Bicycle lanes in dc				
Bike Routes - Signed	DC GIS			
Bike routes with signs in DC.				
Bollards	OCTO via DC GIS			
Bollards around main district buildings and landmarks				
Bridges and Tunnels	DDOT via DC GIS			
Bridges and Tunnels				
Bridges with Attributes - point	DC GIS			
Bridges with Attributes -	DC GIS			
Buildings	OCTO via DC GIS		04/29/2011	04/29/2011
Building footprints with firewalls.				
planned				
Part of 2030 transportation plan				
Business Improvement Districts	Individual BIDs via DC GIS			
Business Improvement Districts (BID).				

From: DC GIS <dcdocs@dc.gov> Sent: Fri 10/14/2011 12:36
To: bkrucoff@verizon.net
Cc:
Subject: DC GIS Posts Data Updates

Washington, DC

DC GIS operates a data maintenance and enhancement program to keep data current and introduce new and valuable GIS layers to the District government and public. The most recent data additions and updates to the DC GIS data services are:

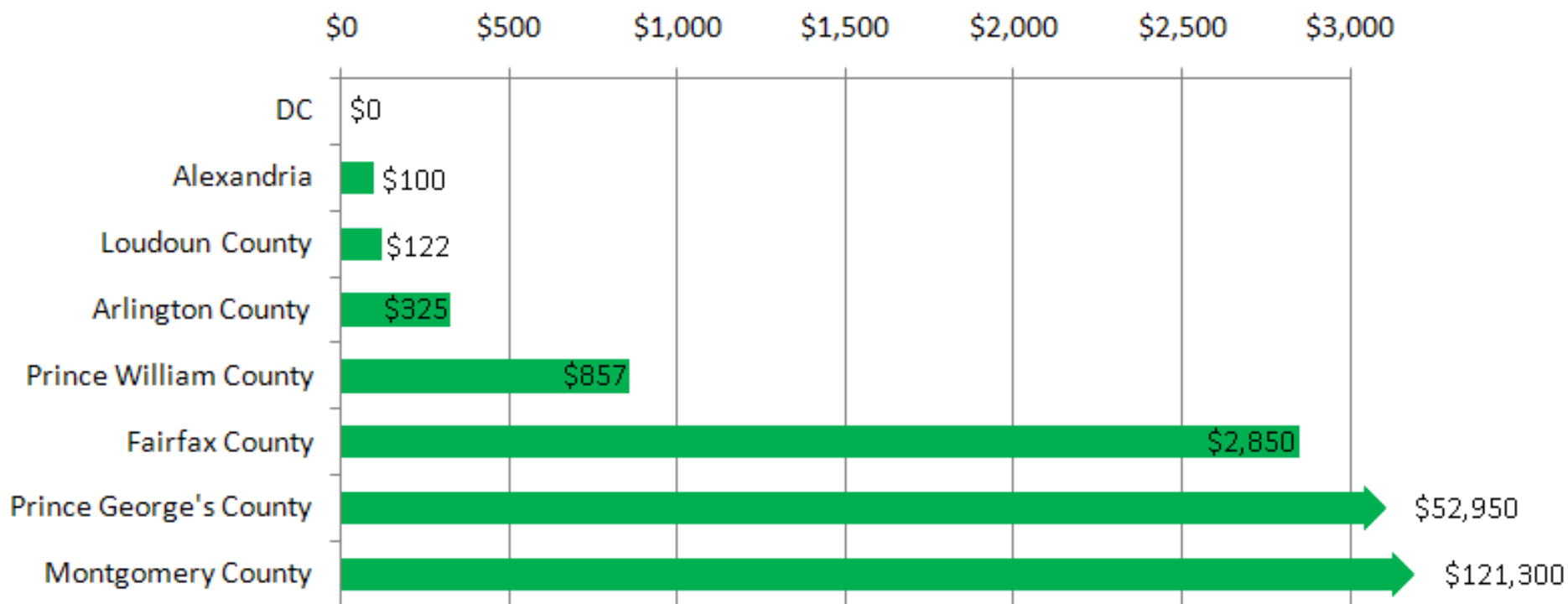| Layer Name	Feature Class Name	Update Date			Summary Update Notes
		Central Database	DC GIS Tools	Data Catalog	
Education					
Charter School	ChrtSchPt	Done	Done	10/19/2011	reflects 2011-2012 school year
Public School	PubSchPt	Done	Done	10/19/2011	reflects 2011-2012 school year
Environment					
Street Tree	StreetTreePt	Done	Done	10/19/2011	update
Green Site	GreenSitePt	Done	Done	10/19/2011	added more Green Buildings
Health					
Primary Care Site	AddressPt	Done	Done	10/19/2011	MAR Monthly Report
Address Point	AddressPt	Done	Done	10/19/2011	MAR Monthly Report
Address Alias Point	AddressAliasPt	Done	Done	10/19/2011	MAR Monthly Report
Miscellaneous					
Leaf Boundary	LeafBoundaryPly	Done	Done	10/19/2011	contains 2011 leaf pickup dates
Notary Public	NotaryPublicPt	Done	Done	10/19/2011	update
Office of Aging Lead Agency Site	OALeadAgencyPt	Done	Done	10/19/2011	several changes
Retail Priority Area	RetailPriorityAreaPly	Done	Done	10/19/2011	revised bndy around metro stations
RSA One Stop	RSAOneStopPt	Done	Done	10/19/2011	new sites
Sidewalk Café	SidewalkCafePt	Done	Done	10/19/2011	new layer
Public Safety					
Red Light Camera	RedLightCameraPt	Done	Done	10/19/2011	new cameras along major routes
Speed Camera	SpeedCameraPt	Done	Done	10/19/2011	new layer

Price for Building, Zoning, and Elevation Contour GIS Data by Jurisdiction

Jurisdiction	Price
DC	$0
Alexandria	$100
Loudoun County	$122
Arlington County	$325
Prince William County	$857
Fairfax County	$2,850
Prince George's County	$52,950
Montgomery County	$121,300

MARYLAND

Greater Greater Washington
The Washington, DC area is great. But it could be **greater**.

We also have too many of these

MARYLAND DEPARTMENT OF PLANNING
MARYLAND HISTORICAL TRUST
SPATIAL DATA PRODUCTS ORDER FORM AND LICENSE AGREEMENT

THIS AGREEMENT (the "Agreement") is made by the Maryland Historical Trust on behalf of the Maryland Department of Planning (MDP), hereinafter called Licensor, and Purchaser of spatial data identified on page 1 of this Agreement, hereinafter called Licensee.

Under State Government Article, Sections 10-901 et seq., of the Annotated Code of Maryland, Licensor is the owner and/or custodian of geographic information system data also known as spatial data. Licensor may disclose and reproduce spatial data and charge fees for its products and services.

Licensee wants the non-exclusive right to use MDP spatial data listed on page 1 of this Agreement.

IN CONSIDERATION of the mutual covenants and promises contained herein, Licensor and Licensee agree as follows:

1. RIGHTS GRANTED

Licensor grants to Licensee the non-exclusive right to use the licensed products ordered on page 1 of this Agreement until this Agreement is terminated under Condition 6 or otherwise expires.

1.1 License of Spatial Data.
Licensor shall furnish Licensee data on the media in use by Licensor unless Licensee pays in advance for conversion to and purchase of another media readily available to the Licensor.

1.2 Restrictions of Use.
Licensed spatial data are solely for the internal use of the Licensee and not for the use by any other person or entity, unless specifically stated under Purchaser Information on page 1 of this Agreement.

1.3 Permitted Use.
a. Copies. Licensee may copy licensed data only for use by the Licensee or for backup purposes and not for use by any other person or entity. The licensed product can not be used by any other person or entity. The licensed product can be used on more than one computer system at any time, provided the systems are owned, leased or controlled by the Licensee.

b. Derived Products. Graphic displays and printed tabular listings derived from the licensed data may be used by Licensee in publications and presentations, provided that credit is given to Licensor as the custodian of the data as noted in the metadata citation and credit is also given to the original source of the licensed product if other than the Licensor.

5. WARRANTIES AND LIABILITIES

Neither the Licensor, nor the owner of these data makes any warranty, expressed or implied, as to the use or appropriateness of the licensed data, and there are no warranties of merchantability or fitness for a particular purpose or use. The information contained in the licensed data is from publicly available sources, but no representation is made as to the accuracy or completeness of the licensed data. Licensor may not be subject to liability for human error, error due to software conversion, defect, or failure of machines, or any material used in the connection with the machines, including tapes, disks, punch cards, and energy. Licensor shall not be liable for any lost profits, consequential damages, or claims against the Licensee by third parties. The liability of the Licensor for any damage, regardless of the form of the action, shall not exceed the license fee paid for the licensed data.

6. TERMINATION

6.1 Causes for Termination. Licensor shall have the right to terminate this Agreement if: a) Licensee attempts to assign its rights without the expressed prior written consent of Licensor; b) Licensee delivers or attempt to deliver the licensed data to another person without the prior written consent of the Licensor; or c) Licensee fails to perform any other of Licensee's obligations under this Agreement.

6.2 Licensee's Obligations Upon Termination. Termination by the Licensor shall not release the Licensee from its obligation to pay any fees owed to Licensor.

7. REMEDIES

Breach or Threatened Breach. In the event of a breach or threatened breach of any of the provisions of this Agreement by the licensee or any employee, representative, or agent of the Licensee, Licensor shall be entitled to preliminary and permanent injunctive relief to enforce the provisions hereof, but nothing shall preclude Licensor from pursuing any action or other remedy, including damages for any breach or threatened breach of this Agreement, all of which shall be cumulative.

8. MERGER

8.1 Acknowledgement. Licensee acknowledges that he/she has read this Agreement and agree to be bound by its terms, and further agrees that it is the complete and exclusive statement of the agreement between the parties and supersedes any oral or written communications or representations outside this written Agreement.

Where can you get free/online county data?

Bill Dollins on his [geoMusings blog](#) recently did a quick search of every county in MD & the city of Baltimore for free downloadable GIS data. He found six sites:

[Carroll County](#) (2000 orthos only)
[Cecil County](#)
[Frederick County](#) (requires registration)
[Harford County](#)
[Howard County](#)
[St. Mary's County](#)

4

Work as a team of state agencies and local governments to develop and maintain the very best geospatial data

Addresses, transportation networks, photography, land ownership, live data feeds…

Reminder of the current situation

- State agencies and locals need game-changing incentives to work together better.

- The state still needs to focus on core data sets.

- The Governor wants jobs, supports GIS, and wants to promote technology transfer from universities.

- We all need to keep costs down.

- Many Maryland universities and community colleges are active in geospatial and are producing fine graduates.
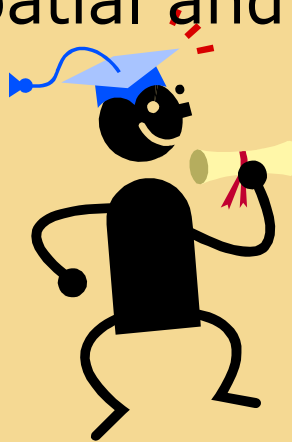
Graduate/Coop Proposal
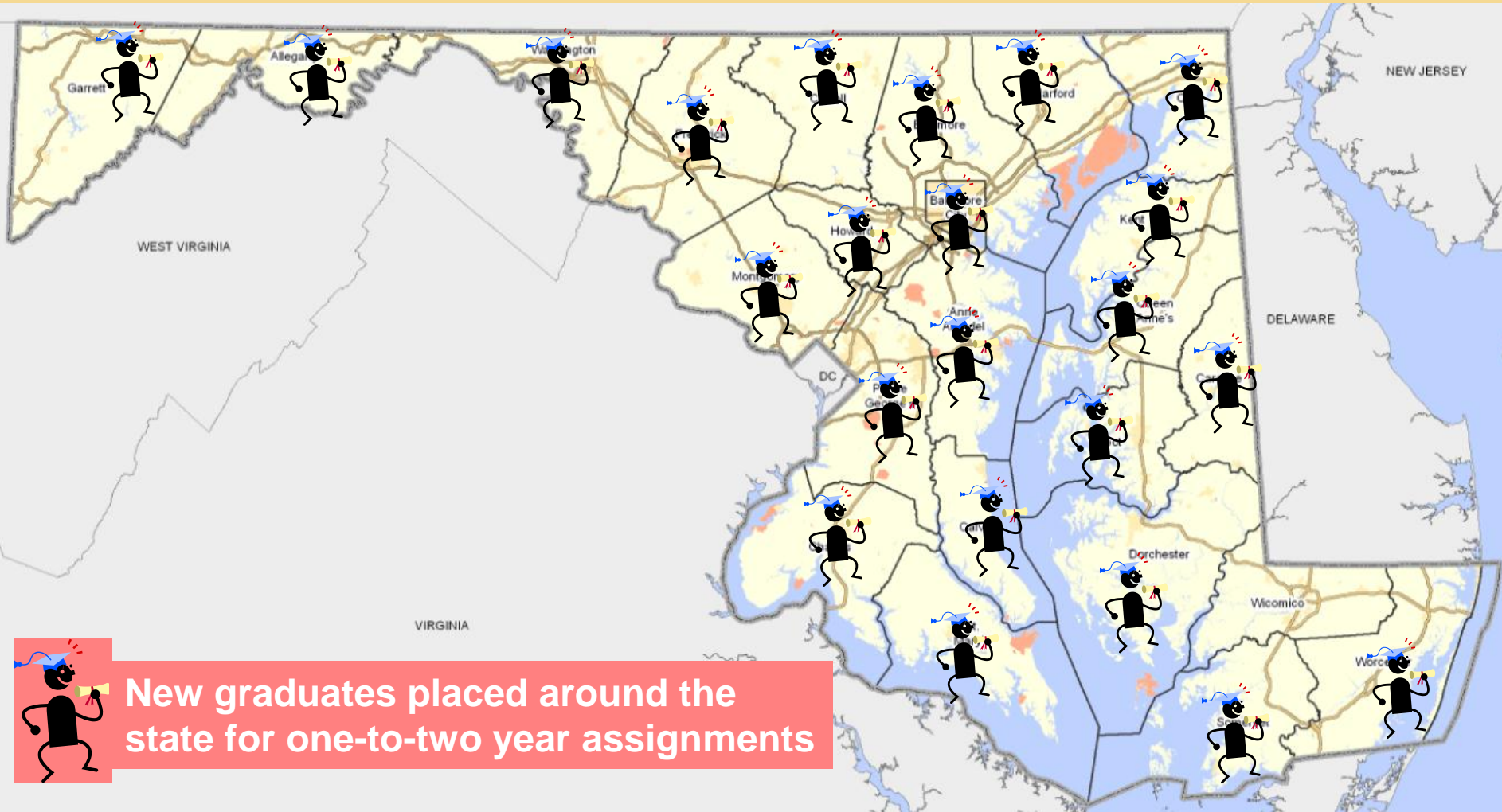
New graduates placed around the state for one-to-two year assignments

Some strings attached

- Graduates can't stay on beyond their one-to-two year terms.
- Graduates assigned to a county will be expected to also support municipalities and local offices of state agencies.
- Positions would be competitive and selected centrally.
- Graduates would work locally but be paid for and to some extent managed centrally with priorities and standards mutually accepted.
- Communities and agencies accepting aid must put all relevant and non-sensitive data in the public domain and post it on the Maryland data portal.
- Ideally there would be a private sector firm as program manager.

What is MSGIC's Role

Outreach, Education, Advocacy

One member's opinion

MSGIC has:

- A very well educated and energetic membership
- A track record of accomplishment

MSGIC isn't a state agency or a day-to-day operational entity

- If the GIO does his/her job, and if we expand the iMap executive committee and the committee does its job, MSGIC doesn't need to be surrogate for the state
- Instead, MSGIC should help those of us in government be successful and accountable

Being outside the government can be a powerful position

- Outreach and education, for example, this meeting
- Advocacy

Proposed MSGIC Advocacy Agenda

1. **Improve the iMap executive order.** Make our state geospatial program more ambitious, inclusive.

2. **Establish a Geospatial Information Office with sustainable funding** to provide and manage enterprise services and data for the common good.

3. **Champion open data in Maryland.** Make geospatial data easy to find, obtain, and use.

4. **Work as a team of state agencies and local governments to develop and maintain the very best geospatial data of any state** (addresses, transportation networks, photography, land ownership, live data feeds...)

Proposed MSGIC Advocacy Agenda

5. Impervious surface fee(s) to protect the bay

6. Chesapeake Bay Critical Area mapping

Discussion