Maryland State Geographic Information Committee

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

Martin O'Malley — *Governor*

Anthony G. Brown — *Lt. Governor*

MSGIC Quarterly Meeting
April 27, 2011
Location: Caroline County Health and Public Services Building (Denton, Maryland)

Attendees:
Chair:
Chris Slavin, Anne Arundel County

Chair-Elect:
Michael Scott, Salisbury University/Eastern Shore Regional GIS Cooperative (ESRGC)

Secretary:
Julia Lukens, MD Department of Business & Economic Development (DBED)

Federal Caucus Chair:
Roger Barlow, U.S. Geological Survey (USGS)

State Caucus Co-Chair:
Jim Cannistra, MD Department of Planning (MDP)

Data & Resources Subcommittee Chair:
Ashley Buzzeo, Center for GIS @ Towson University (CGIS)

State GIO:
Kenny Miller, MD Department of Information Technology (DoIT)

Members:
Bill Burgess, Ramona (gisinventory.net)
Megan DelGaudio, Queen Anne's County Government
Joe DeLuca, EA Engineering
Kate Donovan, Dorchester County Government
Mark Dunlevy, Worcester County Government (WCDRP)
Jeff Edgin, St. Mary's County Government

Jerry Feldman, JMT
Tess Foster, Worcester County Government (WCDRP)
Caroline Gaulke, Anne Arundel County
Lamere Hennessee, DNR/RAS
Kelly Henry, Worcester County Government (WCDRP)
Maureen Kavanagh, MD Department of Planning (MDP)
Kathryn Kulbicki, Westat
Joe Miller, Caroline County Government
Bill Orsinger, Fox & Associates, Inc
Anthony Puzzo, Esri
Doug Reedy, Frederick County Government
Erica Rhoades, McCrone, Inc
James M. Shaw, Jr., MD Society of Surveyors (MSS)
Scott Shores, City of Cambridge
Erin Silva, Eastern Shore Regional GIS Cooperative (ESRGC)
Sam Stanton, Queen Anne's County Government
Marshall Stevenson, KCI
Calvin Strozier, St. Mary's County Government
Henry Weissenberger, Spatial Systems Associates, Inc
Eric Williams, STV Incorporated
Karen Zera, Town of Ocean City

Guests:
Peter Claggett, USGS
Chris Cortina, MD Department of Natural Resources (DNR)
Nancy D'Erasmo, Eastern Shore Regional GIS Cooperative (ESRGC)
Eric Flint, Salisbury University
Tu Hoang, Eastern Shore Regional GIS Cooperative (ESRGC)
Justin Lahman, Axis Geospatial, LLC
Ryan Mello, Eastern Shore Regional GIS Cooperative (ESRGC)/Critical Area Commission
John O'Brien, Salisbury University
Ben Overholt, Eastern Shore Regional GIS Cooperative (ESRGC)
Tim Quinn, MD Society of Surveyors (MSS)
Andrew Ross, geographIT
Danny Saner, Salisbury University
Kyle Satterfield, Salisbury University
Aaron Steely, Eastern Shore Regional GIS Cooperative (ESRGC)
Tom Wallace, Salisbury University

Welcome:

Executive Committee Elections and MSGIC Updates (Power Point Available)

- Summer Quarterly – Silver Spring, MD (pending location)

LinkedIn

- Question of the Month
- Encourage MSGIC participation through LinkedIn
- Discussions and postings on-going concerning events and technology usage

Wiki

- Need someone to take lead on this
- Ideas for getting people involved through this outlet
- Currently filtering all contact updates through one person (Lisa Lowe)
- This is another tool "in the tool belt" – manage your own information and content
- Always looking for project highlights and self-promotion

Exec Comm

- Elections coming up and encourage new participants
- Strategic plan being put together
- Geomentor Program – encourage participation, educate others using GIS

Kudos

- Brad Wolters/CGIS – DHCD Mapper
- Salisbury University – Business Plan Competition
    - Received word that GIS management Master's student accepted as finalist – Chris Maxa
    - Final selections in two weeks
    - Elevates use of GIS to professionals evaluating business plans

Project Updates:

<u>Mapping Broadband Access</u>: Michael Scott

- Map all of broadband/high speed internet availability in the state
- Head up by Maryland Broadband Cooperative (MBC)
    - MBC facilitates wholesale of broadband technology in rural areas of Maryland
- ESRGC and CGIS are technical leads for Broadband Mapping efforts
- Third delivery of data was recent and on time
- Recent launch:
    - Broadband.maryland.gov
    - Mdbroadbandmap.org

    - Broadband availability map and speed test map application
        - Pulls in information about whether BB is available and how fast it is
        - Critical data to try and validate from the technical perspective
        - Take the Speed Test to assist in validating the accuracy of speed numbers
        - Tracking where speed tests have been taken and how many in an area
- CGIS is developing ETL tool allowing BB providers to log into website and upload data directly
- ETL tool will be generic and will be made available for other MSGIC state initiatives, such as statewide address points or centerline project

<u>MD iMap Executive Committee Updates</u>: Kenny Miller

- State's Enterprise GIS – MD iMap
- Almost 200 maps services available
    - Rest services, .kml services
- Executive Committee – policy makers concerning MD iMap
- Technical Committee – state, county, municipal, local agencies and private companies participate
    - Deal with technical issues and send to execs for funding and agreement of policies moving forward
- Interface Branding
    - Standardized template for mapping interface
    - Take template and 30 – 40% of work already done
        - Location of widgets
        - Location of navigational tools
        - Location of slide bars
- Statewide Addressing initiative
    - Identify address ranges
    - Locate address points from county jurisdictions and include these also
    - Series of pilots are being completed (PG Co, AA Co…)
    - Determine funding required and find funding to create seamless, integrated centerline with ranges and address points statewide
    - Requires partnership between state agencies and local jurisdictions (SHA lead)
    - Statewide product for use by general public
        - MOUs and other agreements must be put together in the future
        - Collect, share and use the best data we've got as a state
        - Locals have best data and state ties it together
- Question: timeline for address point initiative?
    - Objective in the span of a month to identify project scope to work with Allegany County to address cross boundary issues

MD iMap Technical Committee: Julia Lukens (PowerPoint available)

- Mini Annual Report 2010
    - System Statistics:
        - 8 New Mapping Applications Added (17 Total)
        - 202,976 Unique Page Visits to All Applications
        - 129 New Map Services Added (183 Total)
    - Technical Committee Accomplishments:
        - Latitude/Longitude Geocoding Service Created & Available
        - Twitter Account Established (MD iMap)
- Rapid Application Prototype
    - Background:
        - Provide non-programming GIS groups a resource to quickly deploy mapping applications
        - No funding available for development, alternative resources were explored
        - Esri's arcgis.com My Map has been evaluated and determined to meet the basic functionality that the Rapid Application Prototype was anticipated to provide
- WFS Enabled Map Services
    - Facilitates importing features from map service onto local machine for analysis purposes
    - Announcements on Twitter and Portal, in near future, concerning what services are WFS-enabled and instructions on how to import this information
- Interface Branding
    - Provide a standard look and feel to web mapping interfaces
    - Meeting: Tuesday, May 3 (3 – 4p.m.) @ MDE
- Eastern Shore Imagery Assimilation
    - Current 6" imagery service will be updated with most recent data
    - No changes need to be made to applications utilizing imagery service
    - Another service with historic imagery information will be made available
    - Timeline: 3 to 4 months
    - Announcements on Twitter and Portal
- Code Users Group/Code Sharing
    - Organize communication about code sharing
    - Discuss procedures and establish standards
    - All languages are open for discussion
    - Please contact Frank Siano (fsiano@mde.state.md.us) to participate
- Gazetteer Map Service (Basemap)
    - Currently being cached, available in near future

    - Announcement on Twitter and Portal
    - Cartographic updates include:
        - Removed county boundaries in Chesapeake Bay
        - Provide common usage names for roads and place names
        - Include boundary features for adjacent states
- Additional Items:
    - Arc10 Migration discussion in progress
    - WGS Coordinate versions of map services will be made available in the near future
    - Google Urchin statistics updated quarterly and posted to Portal
    - Cache-on-demand has been turned on for imagery
- Next Technical Committee Meeting:
    - Tuesday, May 3, (1 – 3p.m.) @ MDE
    - Call-in Number: 410-537-4281
    - Meetings: 1st & 3rd Tuesdays of the Month @ MDE
    - Please contact Julia Lukens (jlukens@choosemaryland.org) or Frank Siano (fsiano@mde.state.md.us) to participate

Business Plan Workgroup – Orthos: Jim Cannistra (PowerPoint available)
Western Shore Imagery Acquisition

- Coverage will be out to political boundaries and not stop at the physical boundary
- Vehicle and pricing in place for future acquisition, such as next Eastern Shore collection
- Axis GeoSpatial is prime contractor
- March 1 – April 15th were flying dates
- 31 lifts or times planes took off the ground – acquiring about 1,000 images each time
- 4 band imagery collected allows for switching bands and examining Color IR (Band 4)
- Status report will be posted to MSGIC website (tile layout and flight maps)
- 4 band core deliverable, but not available as core deliverable for Eastern Shore Imagery acquisition
- .jpgs, four band .tiffs and SIDs – part of deliverables
- Suggest discussion between GIS community and PSAPs to determine exact format for delivery, many of the CAD (computer aided dispatch) software being used have requirements that are different than the GIS software or what is currently being delivered
    - Tile grid might need to be adjusted
    - Delivery format might need to be adjusted
    - Short term and long term solutions needed
- Next Gen 911 – working at the national level to come up with national standards

Business Plan Workgroup – Parcels: Jim Cannistra (PowerPoint available)

- Collection of data to support MD iMap initiatives
- Every 4 to 6 month working to collect updates of parcels from local jurisdictions
- Merlin on-line map is the more common on-line application used to access parcels and their general information
- Connect through a map service from MD iMap Portal
- Completed a data collection effort recently and normalized account numbers for next round of collection
- Validation of account numbers is very important – formatted properly is very important – helps integration process
- 99.34% correspondence of account numbers
- Still awaiting: Washington, Charles and Garrett to get parcels data converted
    - Within month or two – Washington
    - Within 6 months – Charles
    - Within the next year – Garrett
- SDAT Map Production – match up spatially with county source data and ancillary data (text and municipal boundaries) – current working with three counties (Caroline, Talbot & Dorchester), , edge matched so data can be shared across county boundaries, will work with three other counties in next phase
- Working to produce a product for assessors to use in office and in the field – account number, parcel, lot number and tax map will be linked

GIS Data Inventory: Ashley Buzzeo (gisinventory.net)

- Effort in February with three week intense data inventory effort – get data into system
- Not metadata repository, place to look up and find available data sources
- Some links to data itself are available in the system
- 1,200 data layers added during the February effort
- Couple hundred more have been added since
- Not all encompassing, still working to get additional information and layers
- Feedback to Ashley Buzzeo, Chris Slavin or Julia Lukens (positive & negative comments)
- Final report for Maryland is located on gisinventory.net
    - Answers to MD specific questions
    - Statistics of data collection
- Looking to get a student to assess what was entered and what is missing
- GIS Day make another effort to make sure that current contributors data is up-to-date
- February make another effort to add more data layers to the system
- Grant used to do initial data inventory efforts – grant from FEMA

GIS Data Inventory: Bill Burgess

- U.S. census bureau – blast message to 44,000 local government contacts encouraging use of gisinventory.net
- FEMA meeting yesterday with flood map modernization efforts – thinking adopting use of gisinventory systems
    - Planned activities will be targeted for partnering efforts from the Federal Government
    - Tentative, not yet confirmed
- Other federal agencies are considering becoming involved and connected to the gisinventory system

Presentation – "Using Land Cover Data in Support of TMDL Applications for the Chesapeake Bay Program" – (PowerPoint available)
Contact: Peter Claggett, USGS Eastern Geographic Science Center
Phone: 410-267-5771
Email: pclaggett@usgs.gov

- Dec 2010 – mandatory and regulated assessing how much nitrogen (nutrients and sediment) comes off the land (EPA requirement) – no longer voluntary – required by Clean Water Act
- Can't use local jurisdiction information because need consistency of LU/LC across 6 states for the past 25 years – use Landsat data
- Low-density residential LC is difficult to capture with 30m x 30m pixel sized satellite imagery
- Agriculture census can be used to supplement agriculture LC determination
- Used ancillary data to determine the impervious and pervious surfaces in the developed land areas around the bay (more impervious surface will be found in local data than was calculated at the regional level)
- Dense urban areas are the areas of impervious surface that satellite data captures best
- New impervious surface capture efforts are compared with local data and found to be closer to capturing the appropriate level of impervious surface based on the local's information
    - Accuracy of the data has improved
- Don't include farm out buildings in impervious surface capture areas
- Use coefficients based on home coverage to calculate coverage of single, detached houses in rural and suburban areas
- Use road GIS data to calculate impervious surface coming from road surface coverage
- Using county level coefficients of impervious surface increases the accuracy of determining the amount of impervious surface coverage

- Improving process of determining amount of urban impervious surface allows adjustments toward more accurate estimates of other LC types, such as agriculture
- Alternative Futures Workshop
    - Alternative futures scenarios for 2025
    - Plausible scenarios for 2025 to explore planning for the future
- NavTech road data utilized for regional analysis, to keep information consistent throughout the region
    - State specific road width estimated for four different types of roads for each state to be used to calculate impervious road coverage in each state
- Land Use Data in Chesapeake Bay area – characteristics, usable land use data available?
    - ParcelView/PropertyView provides general land use data coverage for MD
    - Accepting local data requires reconciliation of local schemes across jurisdictions
    - Gaps in local data collection also pose a challenge

Presentation – "Maryland's Coastal Atlas" – (PowerPoint available)
Contact: Chris Cortina, Chesapeake and Coastal Programs for the MD Department of Natural Resources (DNR)
Phone: 410-260-8774
Email: ccortina@dnr.state.md.us

- MD coastal jurisdiction is out to 3 nautical miles, after that it is considered federal waters
- Communicate to stakeholders were federal government leasing activities are occurring
- Joined International Coastal Atlas Network
    - Develop template or common purpose for coastal atlases, how to be developed and tools for development
    - Maryland's Mapper was presented to this group
    - Interoperability – create linkages between atlases
- Mapper is convenient location to put data that is being collected from various programs being funded through Chesapeake and Costal Programs for MD DNR
- midatlanticocean.org
- NOAA digital coast relationship – Mapper has taken advantage of some available data from NOAA which has been incorporated
- NAPCIG connected with Digital Coast project for cross pollination of tools and efforts available to the emergency response community

Presentation – "Lidar Methodology for Verifying Broadband Internet Services Furnished over Wireless Networks in Pennsylvania" – (Availability of PowerPoint Pending)

Contact: Andrew Ross, geographIT
Phone: 717-399-7007
Email: aross@geographIT.com

- Use Lidar to create independent view of wireless coverage
- Terrain, tower location and tower heights used to create viewshed
    - Assumptions included:
        - Hardware transmitting signal was at top of towers
        - Towers transmit in all directions (some towers are uni-directional with their signals)
            - This would result in showing a more robust coverage area
    - Used Esri Viewshed Analysis Module
- Lidar collected for PA collects 5 strongest reflections, collecting 5 levels of depth at a location (5 return Lidar, 5 return per beam) (i.e. – tree branch and ground beneath or powerline stretch across a valley)
    - Collects more because of beams coming straight down versus those coming from an angle
- Lidar saved as LAS file format – www.lasformat.org for more information
    - Class field – 30 classes defined in ASPRS standard – to identify what feature was identified by a laser strike (i.e. – all others, ground, not ground, roads)
    - A subset of these 30 were used for this project, for cost saving purposes, project only concerned with surface
- Lidar was collected at 3 foot intervals, DEM was created at 10foot pixels, which turned out to be higher density than needed for this analysis
- Potential rerun of data for an updated coverage area during Summer 2011

Presentation – "Working with Land Surveyors: A Geospatial Partnership" – (PowerPoint Available)

Contact: James M. Shaw, Jr., Maryland Society of Surveyors
Email: jshaw@gwstephens.com
Contact: Tim Quinn, Maryland Society of Surveyors
Email: tquinn@rodgers.com

- Maryland Society of Surveyors (MSS) – licenses surveyors and non-licensed interested parties
- Provide educational opportunities for land surveyors – rapidly changing technologies and techniques
- Provide legislative support at local, state and federal levels
- Present to students to get them interested in land surveying (middle and high schools)

- Public outreach – increase interest and knowledge of land surveying
- Keep members up to date of technologies and opportunities
    - See GIS and land surveyors on parallel tracks and opportunity to share information
- Surveyors have a lot of accurate information
- Working to get surveyors sharing this information through communication with GIS community
    - Understanding how the two communities can benefit one another
- A subdivision plat is a representation of what is on the ground, but does not always provide an accurate representation of what is on the surface
- Natural monument is the highest ordered Law of Evidence – this can include the shoreline of a river, which is considered a very highly accurate boundary
    - Suggested that coordinates may rise in reliability as a Law of Evidence as more sophisticated and accurate GPS readings are made available
- State Plane is a flat plane cut through the surface of the rounded earth surface, there is some inaccuracy because of this
- County boundary is the domain of survey – these would be retracement surveys, not original surveys
- Need to discuss standards that are cohesive for both MSGIC & MSS and support both groups
- GIS may be an opportunity for preserving historical surveyed data and also get a better understanding of who and how many times land has been surveyed
- Surveyors will need training and understanding of required metadata
- MSS Surveyors have been invited to Exec meeting to discuss educational opportunities

Next Quarterly Meeting – July 2011
Location: To Be Confirmed