



**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
February 14, 2011
Location: USGS MD Water Science Center**

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)

Regional Caucus Co-Chair:

Brad Spittel, Baltimore Metropolitan Council (BMC)

State Caucus Co-Chair:

Jim Cannistra, MD Department of Planning (MDP)

Local Government Caucus Co-Chair:

Debbie Carpenter, Garrett County

Data & Resources Subcommittee Chair:

Ashley Buzzeo, Center for GIS @ Towson University (CGIS)

Education Caucus Chair:

Eric Cromwell, Harford County Public Schools

State GIO:

Kenny Miller, MD Department of Information Technology (DoIT)

Members:

Tim Abdella, JMT

Zachary Baccala, PBS+J

Frank Bowne, Anne Arundel County – DPW

Patrick Callahan, Prince George’s County GIS

Jen Chadwick-Moore, Maryland Historical Trust (MHT/MDP)

Nick Chamberlain, City of Salisbury

Sandi Cone, City of Laurel

Jeff Cox, Anne Arundel County – DPW

Mary Creamer, Eastern Shore Regional GIS Cooperative (ESRGC)

Joe Deluca, EA Engineering

Mark Dunlevy, Worcester County

Kaushik Dutta, Maryland Transportation Authority (MDTA)

Jeff Edgin, St. Mary’s County

Bill Fearington, Maryland Department of Juvenile Services (DJS)

Mario Field, District of Columbia GIS

Matt Folley, Maryland Department of Planning (MDP)

Tess Foster, Worcester County

Doug Goldsmith, KCI

Michelle Guck, USDA – Natural Resources Conservation Service (NRCS)

Bud Gudmundson, Washington County GIS

Peter Hanna, Baltimore City Fire Department

Kelly Henry, Worcester County – DRP

Chris Holub, Dewberry

Sam Householder, Frederick County GIS

John Hudgins, Coppin State University

Taylor Keen, University of Maryland

Matt Kennedy, Esri

Yeon Kim, Frederick County GIS

Kathryn Kulbicki, Westat

Sal Licausi, U.S. Army – Fort Meade

Lauren McDermott, Eastern Shore Regional GIS Cooperative (ESRGC)

Jeremy Monn, Center for GIS @ Towson University (CGIS)

Bill Orsinger, Fox & Associates, Inc

Hermina Paczynski, State of Maryland

Virginia Peterman, Howard County

Anthony Puzzo, Esri

Fred Schenerman, Maryland Department of the Environment (MDE)

Martin Schmidt, McDonogh School
James M. Shaw, Jr., G.W. Stephens/Maryland Society of Surveyors
Bill Shinar, Fugro EarthData
Erin Silva, Eastern Shore Regional GIS Cooperative (ESRGC)
Dan Smith, Chesapeake Environmental Management, Inc
Julie Spangler, Maryland Poison Center
Ryan Spielman, Mercado Consultants, Inc
Kevin Stevens, Carroll County
Marshall Stevenson, KCI
Michael Stranovsky, Frederick County GIS
Calvin Strozier, St. Mary's County
Jim Thomas, Maryland Department of Health and Mental Hygiene (DHMH)
David Thompson, Baltimore County
Marek Topolski, Maryland Department of Natural Resources (DNR) – Fisheries Survey
Tricia Valentine, Straughan Environmental, Inc
Susan Wooden, Center for GIS @ Towson University (CGIS)

Guests:

Matt Airola, Westat
Nancy D'Evasmo, Eastern Shore Regional GIS Cooperative (ESRGC)
Vicki Defries, Baltimore County
Dave Doyle, NOAA/National Geodetic Survey (NGS)
Renee King, Maryland Department of Planning (MDP)
Ryan Mello, Critical Area Commission
Benjamin Overholt, Salisbury University/ Eastern Shore Regional GIS Cooperative (ESRGC)
Kyle Satterfield, Eastern Shore Regional GIS Cooperative (ESRGC)
Aaron Steely, Eastern Shore Regional GIS Cooperative (ESRGC)
Deborah Sward, Maryland Department of Planning (MDP)
Tom Wallace, Eastern Shore Regional GIS Cooperative (ESRGC)

Welcome:

Executive Committee Elections and MSGIC Updates (Power Point Available)

Opening Remarks:

- **Science Center Director – Bob Shedlock (Power Point Available)**
 - **USGS MD-DE-DC Water Science Center Program Highlights**
 - § **Work to involve in more interdisciplinary programs**
 - § **Water supply studies**
 - **Ecological flow studies**
 - § **Contaminant Fate and Bioremediation Studies**

- Engineered bacteria to eat contaminants – big part of program
- § Chesapeake Bay Studies
- § Real time water Quality monitoring and modeling
 - Temperature and conductance – see changes over time (hourly or seasonally)
 - Analyze turbidity
- § Hydrologic Networks – observation well sites for the most part
 - Land use distribution and hydrography datasets are examined
- § Urban Hydrology
 - On campus – Headquarters for long term ecological research site
 - Urban waters initiative working to reconnect people with their waters
- § Geospatial Tools and Capabilities and how they are being used here
 - Development of a data model and IT infrastructure, GIS-enabled system, being used by MDE
 - Uses ArcHydro Groundwater Data Model
 - MDE used to have to assemble reports by hand, now the tool is used to assist in this process
 - GIS tools used for processing and spatial analysis, scientific analysis
- Questions: TMDL issues – Any interest at the Federal level to monitor phosphorus levels
 - § River inputs program to monitor sediment and phosphorous
 - § Real-time water quality studies are backed up with discrete site readings
 - § Analyze dissolved organic matter, analysis tool kept in the field long term

Maryland GIS Inventory: Kenny Miller and Bill Burgess (Power Point Available)

- Demo of gisinventory.org @ Ramona
- Launching this month an effort to collect an inventory of state, local, federal GIS assets
- Not a metadata record, like metadata, but different
- Inventory of what you have, but not the data itself
- CGIS orchestrating this process and webinars through an available grant
- Managed by Bill for NSGIC
- Tracks status of state and local government inventories to improve coordination throughout the nation
- Datums, coordinate systems, distribution policies, cost policies
- Work in concert with federal systems – Geospatial one stop for example, Data.gov, GOS portal

- Compliant/starter metadata is included in the process because it helps maintain the integrity of the system, but can't import metadata from individual systems – will destroy the integrity of the system because no longer uniform within the system, considerable amount of variation in naming conventions, etc
- Everyone is welcome to participate in the inventory
- Partnerships are created through information in the system
- All open source software
- 99.9% up time over the past six years – very reliable
- Every 6 months adding 20% users to the system, each year a few more states add their info to the system
- GIS inventory has regular communication with multiple federal data repositories (FEMA, GOS, NDEP , NDOP)
- No cost to users or organizations for participation
- Training is available on-demand, but currently being provided through CGIS (on-line)
- Request information on policies (copyright, charges), on geography, on systems (operating system, map service locations)
- User Profile will take approximately 25 – 30 minutes to complete
- Inventory data layers into the system will take approximately 1 – 2 minutes per layer to document
 - Does not all have to be completed at once, log-ins allow the users to come back and update inventory at any time
 - Can also include layers in-development or for future development
 - Have had past experiences where funding has been provided based on information extracted from the system
- Questions:
 - How is the system kept current? How are users asked to keep the system current?
 - § Maintained at the state level in many instances, statewide gatherings where data layers are shown and shared
 - § Transfer tax goes to local government, but don't get money until data has been updated in the system (Wisconsin)
 - § Central individual who would remind and encourage updates
 - § Each state must figure out the model used to motivated people to keep data up to date
 - Profile creation can it be completed in phases?
 - § With log-in this process can be completed over time
 - Future funding commitment?
 - § Sponsored through NSGIC and being supported into the future

- **Kenny: MEMA NG situational awareness tool à all about the data, many cases at local level**
 - Don't have a good idea of what statewide assets are
 - In emergency don't know what you need ahead of time, hard to predict, answer unknown questions
 - Inventory will help determine what we have available and keeping it up to date
- **Critical infrastructure data put onto site is currently available to everyone**
 - Will authorizations and restrictions be made available (can hide the registry, but already public facing map services – want to understand real business needs for the future)
- **What about inventory of non-spatial assets – licensing assets – how do we go to the next step of wanting to be a spatial asset? Can this tool assist?**
 - If it has an address it is considered a spatial database, doesn't have to be in a GIS format to be considered a spatial asset – state needs to decide for individual policies and considerations
- **More people who are coming to the GIS world and don't know who to reach out to, don't know where to go to the data**
 - Don't want this lack of knowledge to slow down progress
 - Economic development individuals can use this as a place to know where to get data
- **Can for sale data providers put data into system?**
 - Don't encourage putting for sale data into system, but they can
 - Each layer has a text line where fees can be stated
 - In profile can include information about price lists and format availability, copyright info., etc
- **Is there a link from the MSGIC website to gisinventory.org à this should be considered in the future**
- **Looking to include widgets and other options of website to website linkage in the future**
- **Looking for data available to general public, other government agency, but not public, partly finished?**
 - Looking for all of this information, each piece can have unique attributes documented
- **Is there a way to tag the data based on potential industry use?**
 - This is an idea to be put into consideration in the future, haven't been done yet
- **gisinventory.net**
 - sign up for profile even if you don't add data, but to use the system
 - challenge for the state beyond last week
 - 302 data layers in the system for MD (140 since the beginning of the challenge)
 - 88 users that have registered with MD as a geography

- Continue to send out progress reports to see who is participating
- Working to at minimum get framework layers in by March 1st

GIO Updates:

- **AxisGeoSpatial to fly MD west of the Bay – be done this spring**
 - Number of buy up options: 3 in orthos, lidar options, near true orthos, obliques, higher resolution/higher accuracy Jim Cannistra from MDP will be coordinating with buy up options
 - Begin acquisition March 1st – need to know before this date of interest (contact Jim Cannistra quickly)
 - Options Contracted directly for buy-ups
 - Was a competitively bid state contract, should work with local procurement laws
 - RFP document specifications will be put onto MSGIC website shortly
 - Also put status reports on MSGIC website
 - SharePoint site will be created for more details about project status (log-in necessary)
 - Funding comes from 911 Board, viewed as public safety asset and are committed to continuing to spend the money to get centerlines, address points and building footprints and keep them up to date for emergency response purposes
 - Year long process after data collection (April 2012 completion of project, phased deliveries during that time starting in the south and moving NW)
- **ELA**
 - State in the process of negotiating with Esri
 - Cover almost all of the software products from Esri
 - Managed by the state
 - State agencies would work through DoIT to get access to software
- **License Agreement for K – 12 education sector**
 - Schools, teachers and students to get access at almost no cost for education side of things
 - Another statewide ELA
- **Considering a Master Purchasing Agreement (MPA)**
 - For state agencies would cover some of the software products not covered by ELA – available at a discount
 - Affords county/municipal governments to purchase through this agreement
 - Not sure of NGOS and other regional groups, continuing to be worked out
 - Some of the local governments already have some of these agreements in place
 - Terms and conditions have already been determined, cut and paste across various agreements
 - Initial purchases only or reduced maintenance payments – initial software purchases only

- **EMMA NG**
 - MEMA has been using for the last 5 – 6 years (existing one is IMS based)
 - New one is ArcGIS Server 10 (services, etc)
 - Will be a public side for public assets only
 - Looking to come on line sometime this summer

Project Updates:

MD iMap Executive Committee Update:

- No updates available at this time

MD iMap Technical Committee Update:

- **Mini Annual Report**
 - An annual report presentation is being assembled for presentation to the MD iMap Exec. Comm. on 2/23/11 to include:
 - § Summary of 2010 accomplishments
 - § Unfinished business
 - § New initiatives
 - Welcome feedback concerning secondary benefits from the availability of MD iMap to include in presentation (Contact Jim Cannistra jcannistra@mdp.state.md.us)
- **ArcGIS 10 Migration**
 - Discussions have begun about the impact of migrating MD iMap infrastructure to ArcGIS 10
 - CGIS has begun in-house testing of impact and implications
- **Subcommittee Charters**
 - Subcommittee charters for the Application Subcommittee, Data & Resources Subcommittee and Outreach Subcommittee have been drafted, approved by Technical Committee and will be passed to Executive Committee for approval
- **Application Subcommittee Updates**
 - **Rapid Application Prototype**
 - § CGIS has provided a proposal and is updating this proposal based on feedback received from Technical Committee
 - § Funding for this project is not currently available
 - **Posting Code onto MD iMap Portal**
 - § Collecting and assessing currently available Adobe Flex code

- § Developing policy and procedural documentation for future collection and posting of code onto MD iMap Portal
 - Assembling a developer contact list to post on MD iMap Portal
- Data & Resources Subcommittee Updates
 - Cache Map Services
 - § Two additional levels of caching were created for the basemap service
 - § Cache-on-demand is being turned on to allow for the visibility of these additional layers for all other cached map services in MD iMap
 - § Testing was conducted with application developers utilizing cached MD iMap services to assure that the cache-on-demand would not cause problems to develop in their applications
 - § Cache-on-demand has been turned on
 - MD iMap Gazetteer Service Update
 - § Broadband funding will be utilized to cover the costs of updating this service
 - § Updates will include:
 - Color scheme and symbology updates and upgrades of the entire basemap
 - County boundary will be trimmed at water's edge and not extend into Chesapeake Bay
 - Clean-up of labeling
 - Road labels and Place Name labels will cartographically match common usage names, underlying data will not be changed
 - Obtain most up-to-date datasets
 - Provide error list to data owners for clean-up at the source
 - Additional Items:
 - Add National and State Parks to Gazetteer Service
 - Add adjacent state and county boundaries, including NJ
 - Add adjacent state Interstates and US Highways
 - Add Hydrology labels for larger water bodies
 - Google Urchin
 - § CCBC students created a report of compiled and assessed analytics for one year of MD iMap activity
 - § CCBC students presented their findings during the 12/7/10 MD iMap Technical Committee meeting

- § Reports will be posted on MD iMap Portal for review
 - § Utilize the results from these reports in the future to raise funding and analytically represent the impact of MD iMap
- Metadata Services
 - § Efforts have been made to assure that all map services in MD iMap have the metadata which is required through data submission policy standards
 - § An updated list of “offenders” is available for review (“Offenders” include: SHA, MES/Gov Office, DNR, USGS, DHCD and MDE)
- Web Mercator Projection
 - § Costs are being assessed for labor and storage capacity on the infrastructure to add additional services projected to Web Mercator
 - § Thought is to start with the Gazetteer service and potentially include additional services in the future
- WFS
 - § Portions of Data Interoperability extension is free at Version 9.3.1
 - § Successful testing has been conducted on enabling WFS at service level allowing for data downloading
 - § Documentation to be created:
 - Policy and standards for data downloading
 - Instructions on WFS data downloading
- Outreach Subcommittee Updates
 - Twitter
 - § Sign up to follow MD iMap on Twitter (MD iMap)
 - § Currently being used for service alerts and other alerts
 - § Available for additional dissemination of information including:
 - Other public service announcements
 - Data uploads
 - New application launches
 - § Please provide a clearly assembled and edited tweet to Ashley Buzzeo, Lisa Lowe or Kenny Miller
 - Vision Statement
 - § Updated to more clearly represent the current and future objectives of the MD iMap Technical Committee

- Security Subcommittee Updates
 - Security Model Presentation
 - § Future MD iMap Security considerations and costs were presented to the Exec. Comm. on 10/27/10
 - § Funding for this project is not currently available

Mapping Broadband Access:

- MD Broadband Cooperative was selected to participate in this process – expand broadband to rural parts of the state
- CGIS and Salisbury and DBED and DoIT have teamed up to accomplish the project
- Collecting from broadband service providers themselves (where, what speeds, types of service)
- Collecting at the block level based on available census information
- Collecting some at address level, but not able to share this information with the public, middle mile – more major distribution lines
- Last spring major data collection, another collection in fall and another in the spring
 - Providers provide data, processed by team into format appropriate for NTIA and serve it up
- 2/17/11 is when National BB map is to be released to the public
- See a lot of press shortly after this release, encourage getting online and providing comments
- MD BB map has been online since late summer 2010
- Encourage everyone to go out and check it out and provide comments as needed
- Mdbroadbandmap.org
- Governor's site: broadband.maryland.gov it also has a link to the map
- Functionality
 - MD iMap infrastructure being used
 - Google Urchin statistics shows bb map is top application draw to MD iMap
 - All services out on MD iMap server – can create an application that pulls this data into their direct application (iPad, iPhone, also can throw a lat/long against service and get service results)
 - Speeds of services will be made available in the next week or two (10,000 speed tests have been completed – please continue to complete speed tests!!!)
 - Query data directly and can provide to information about the provider connected to the different services, not shown directly inside of the mapping application

- Query an address and comes back with what types of service available and individual providers that provide service to the census block – links directly to individual providers websites for comparison shopping
- Print to pdf is available – realtors can provide these handouts to potential buyers of a property
- Report an unserved area, report an error on the map → provides feedback back to the bb team (goes to an email address and is monitored regularly) – provides some test of the data
- 14 different tests are completed to validate what providers are providing for this project and provide feedback to the providers
- Encouraging providers to provide information at the address level, for more accurate reporting to the public through the website (not sharing address information, but can provide more accurate reading within the census block)
- Bb capacity building – DoIT to have three bb staff – build a bb strategic plan for Maryland (all of MD, not state agencies specifically) – need to understand where funds should be spent – more information to come in the near future
- Questions:
 - How did providers report geographically to bb team?
 - § Lots of different ways, sometimes just block level, sometimes address level, sometimes street segments – some have to be processed and sometimes others are already processed
 - § Technical assistance is available if providers can't figure out how to get the data out of their system for this project

Presentation: “Upgrading to ArcGIS 10 and ESRI Certification” – Matt Kennedy & Anthony Puzzo (Power Point Available)

- Highlight ArcGIS as a complete system
- Add basemap is a new, easy enhancement
 - A number of templates readily available
- Connect through ArcGISonline.com and search and add directly from ArcGIS Desktop
- Layer Packages:
 - Editable, share symbols, attributes (dropdowns preset to minimize errors)
 - Can come from an on-line group and be shared within a semi-private environment – control who can find and access the layer
 - Feature-based editing – can edit feature types rather than just points, lines and polygons – perception of what you are editing is more readily understood by the non-GIS user
 - Access through Web API and edits of layer package from desktop shows up on the Web API

- Lighter weight Web API can perform feature class geodatabase editing – this geodatabase can be in many different places, as long as it is accessible to the website
 - Editing a layer in a web application
- Idea is that Web APIs are more focused on the purpose of an individual application (“City Park Development App”, “City Park Call Center App”, etc)
 - Instead of one application performing a large number of functions
- Question: Licensing level of Server needed to do web editing – Standard
- ArcGIS Mobile can also be integrated with the system and edits can be accessed, completed and viewed through a mobile device
- Seeing the geodatabase as the central feature of the system
- Universal access to basemaps and features, so all access points present an almost identical view and allows almost identical capabilities
- Web and Mobile uses a map service for editing and layers symbology has to manual set, desktop can utilize a layer package where symbology is already designated

ArcGIS Desktop Enhancements

- Symbology improved
- Searching capabilities expanded
- Searching inside of ArcDesktop window
 - Pre-indexed where to search
 - Also isolate where GIS data should be searched for
- Export and import data through ArcGIS Online
- ArcCatalog and ArcMap are joined in the same application in the same window
 - ArcCatalog stand-alone is still available to users
- Worked to improve the efficiency of the screen real estate available
- Symbol has an added search capability
- Tables now open in a window, where tabs denote the different tables, instead of all individual boxes
 - Can make multiple tables visible at the same time
- esri.com/ideas à opportunity to enter new ideas or add comments on an existing idea
- Create new basemap layer
 - This isolates layers into a designated basemap layer, which are identified as to be viewed only and not edited à optimize performance
- Some of the automatic redrawing has been minimized

ArcGIS Server Enhancements

- Compact caching
- resources.esri.com à template Web APIs are available
- ArcGIS Viewer for Flex 2.2 is now supported à can call customer service for support

- Individual basis receive support migrating from 1.x to 2.2 version
- Flex-based widgets webinar will shortly be available on-line
- GeoPortal now an open source software product for manipulation and sharing data to the public

ArcGIS Mobile Enhancements

- Licensing changes allows for mobile license available for every desktop license now
 - Share out license for switching between mobile and desktop
- ArcPad still recommended if survey grade (sub-meter) data collection is necessary
- ArcMobile is available for those not needing sub-meter data accuracy
- SDKs for creating mobile apps for smartphones (iPhone, Android, etc.) – free for application development
- JavaScript API is for mobile devices, not an app, but still designed for phone screen rather than larger screens
- Mobile Project Center
 - Used for creation and deployment of a project
 - Create a new project
 - Add operational and basemap layers (can access services or caches – has to be Arc10 cache)
 - Create a task and provide names and more non-GIS triggers in the workflow
 - Build application differently based on whether users need to be continuously connected or if they can be connected periodically or only need to data download/upload on a daily or weekly basis
- Mobile Workflow for the Desktop
 - Mobile Toolbox
 - Create Mobile Map – create cache that can be placed in a location that is accessible by the mobile app
 - Sync Mobile Map – allows for resynchronization after work has been completed in the field

On Premise (Portal) version of ArcGIS.com (Timeframe: out end of first quarter)

- Reskin and include into existing websites
 - Potential for MD iMap to assist with data sharing
- Product cost not yet determined, might just be included in ArcGIS Server license
- Self-contained environment, hosting internally, not hitting outside web sources

ArcGIS Online

- Create presentations and share those out through ArcGIS Online

- **Esri Imagery and StreetMaps** – can be updated up to 12 times a year
 - Continue to go back to the source of information (local governments and state governments) for updates, keeping the data accurate and up-to-date

Cloud

- Option to deploy Server, Desktop or Development Environment
- Can be used part-time during peak hours (elastic scalability)
- Amazon is currently provider (Amazon AMI – machine instance)
 - Preconfigured Server instance on the Cloud – up and running in short period of time

Licensing Manager

- New borrowing process – check in and check out for a certain amount of time on administrators side
 - Can cut from administrator side – fewer hanging licenses
 - Can check out for a fixed period of time
 - Allows inactive licenses to be checked in through an administrator
 - Open LIM – tracks those using licenses, good for license management, third party software
- Virtualization White Papers are available from Esri

Training

- New classes coming up
- Live training classes over web conference (12 – 15 people in class), replaces some of the in-person classes
- New Virtual Classroom classes available
- New recorded seminars (60 minutes) – training.esri.com

Esri Certification (Power Point Available)

- Starting this year, certification project has been established
- Various areas where certification can be established
- Three Tracts and sub-tracts:
 - Desktop
 - Developer
 - Enterprise
- Desktop Certification Associate and Professional is currently available
 - Associate: broad understanding of the desktop capabilities
 - Professional: broad understanding of the desktop capabilities, dives deeper into extensions and methodologies

- Don't expect to have specific analyst tool certifications
- **Developer:**
 - Desktop
 - Web
 - Mobile
 - Not expected to go programming language specific
 - Associate is currently available
- **Enterprise:**
 - Geodatabase Management
 - System Design
 - Administration
 - GM Associate and Admin Associate is currently available
- **How to Certify:**
 - \$225 per exam
 - Proctor facilitated, 2 – 2.5 hour exam, Approx. 95 multiple-choice questions
 - Suggest reading and courses to prepare for the test
 - Do not have to complete specific classes before you can take the test
 - Don't have specific exam prep yet, but will be putting together on-line options starting in April 2011 – Standard Training Prices for 2 Day Course
 - Pearson VUE Testing Centers are facilitating these tests (6 centers within the general Baltimore Area) – www.pearsonvue.com/esri
 - Fail – can retake test after a couple weeks, Second fail – can take after two months, Third fail – need approval before you can retake additional times
 - Recertification might be necessary based on extent of changes in a new release – how often might this take place and cost associated with retaking based on changes in a new release
 - § Certification will never expire – not connected to a specific version at this time
 - One exam per certification (System Design Professional = one exam)
 - Majority of the questions are theoretical do you know when it is appropriate to use a process and how to accomplish, not what mouse clicks to make
 - Results are Pass/Fail, won't tell you what questions you got wrong, multiple versions of the same certification test
 - § Minimal feedback of how well you did or what portions you were lacking
- **Instructors**
 - Can now be an Esri Certified Instructor
 - Certified Training Program
 - § Obtain Esri Tech Certification
 - § CompTIA CTT+ (Certified Technical Trainer) credentials – Adult Learning
 - § Recertification processes are more stringent for instructors

- Questions: certification@esri.com and www.esri.com/certification for FAQs

Presentation: “The Rationale and Plan for Changing the National Geodetic Reference System” (Power Point Available – <ftp://ftp.ngs.noaa.gov/dist/DaveD/MSGIC>)

- National Geodetic Survey – responsible for datums in the U.S.
- Provide access to Nat Spatial Reference System and maintain accuracy over time
- NAD83 is National horizontal datum and NAVD88 is National vertical datum
- Geocenter of globe has gone from 2 meters to about 3 cm in the past 24 years
 - Based on analysis and additional international involvement and technological enhancements
- Satellite availability has increased the accuracy of what has been collected and calculated
- Future real-time, 10cm, 95% confidence, based solely on satellites – when?, by 2020?
- Navstar/GPS is only system at this time that can stand-alone and provide full accurate readings
- Working to get out of the business of putting benchmarks on the ground, working toward cm or sub-cm accuracy, instantaneous results based entirely on satellite input
- CORS – continuously operating reference stations vs. passive survey monuments (benchmarks)
 - Dual frequency
 - Continuously operating
 - Never have to go there, collect remotely through GPS receivers
 - Determined by campaign measurements taken one every some seconds, not months or years
 - Determine long term changes both horizontally and vertically
- Models or Tools → provide these to users to get to approx.. 1 cm accuracy
 - Convert spatial measurements from one system to another system
 - High accuracy geoid model
- International Goal Standard for Positioning
 - Global Earth Orientation parameters established by International Earth Rotation and Reference System Service (IERS)
 - NAD83 and ITRF00 is offset 2.2 meters
- New vertical datum requires using GNSSs and a strong geoid model → don’t yet have the model needed to accomplish this task
 - Collect a gravity reference frame (U.S., Mexico and Canada are all collecting and will meld data)
 - Use a gravimetric geoid to calculate this new datum
- 2 satellites collecting the gravity model of the Earth
- In the future the vertical datum will be a model and not a physical mark on the ground

- **OPUS: Online Positioning User Survey**
 - Solutions where data is sent from a location and coordinates are sent back to the collector
 - Only Geodetic organization globally allowing any user to include data into the National Data Frame
- **High Accuracy Reference Network was created after NAD83 was released**
 - Each state had a different definition: MD NAD83/91
 - Resurveying with GPS
 - National readjustment of GPS data – NAD 83/2007 (enhancements or adjustments, not a new datum)
 - Maryland has all of these options: NAD83/1986, NAD83/1991 (HARN), NAD83/2007 and CORS are in unique coordinate system called NAD83 CORS 96

New Business

Western MD User Group – Friday, 2/18/11 (City of Hagerstown)

- **MDP – LULC Presentation**
- **Non-profits who qualify can receive free software**
 - Volunteer fire departments are eligible
 - Esri.com/non-profit to test applicability
- **Community Analyst and BAO, Redistricting Tool – New Solution Application Available**

Next Quarterly Meeting – Wednesday April 27, 2011

Health & Public Services Building

403 South 7th Street

Denton, MD 21629