

**Interim Report**

**Metadata Training and Outreach for Virginia:  
A Comprehensive Approach**

**CAP 2006 Metadata Training Grant**

**Submitted to the Federal Geographic Data Committee**

**Organization and Project Leader:**

John McGee  
The Virginia Geospatial Extension Program\  
Virginia Tech  
319 Cheatham Hall  
Mailcode 0324  
Blacksburg, VA 24128  
(540) 231-2428  
jmcg@vt.edu

**Collaborating Partner:**

James Wilson  
Old Dominion University  
(757) 683-3852  
jwwilson@odu.edu

## **Background and Project Narrative**

The Virginia Geospatial Extension Program, in partnership with Old Dominion University, and with the support of the Virginia Information Technologies Agency (VITA, formally called the Virginia Geographic Information Network [VGIN]) was provided funding through an FGDC 2006 CAP Grant to support the development of six metadata training workshops in the Commonwealth. These workshops were designed to support the efforts of local governments, as well as state agencies, the private sector, and federal agencies working in Virginia. This document provides a summary of the approach and outcomes to date.

### Marketing and Registration

Marketing efforts have been crucial to support the *Virginia Metadata Trainers Workshop circuit*. Marketing was conducted through several avenues. The Workshop circuit was initially advertised through an extensive email list-serve. Since the major focus of the workshop circuit was to provide local governments with access to metadata training opportunities, the Virginia Geographic Information Network (VGIN) was initially tasked with sending an email announcement to local government GIS professionals. We followed by marketing the workshop a week later to state agencies, Virginia's private sector, and federal agencies with interests in Virginia. The email announcement was soon followed by the Spring 2006 edition of the Virginia Geospatial Newsletter which included information on the workshop, as well as general information on metadata (See Figure 1). Also note that all editions of the newsletter are archived on the Internet. The spring edition of the newsletter (as well as all archived newsletters) is available online- <http://www.cnr.vt.edu/gep/pdfFiles/VAGeoNewsletter-Spring2006.pdf>.

Marketing was also provided through announcements and presentations at regional GIS User Group meetings.

In order to provide additional information about the workshop circuit, and to support an efficient means of registration, a metadata Website was developed. This webpage includes general information about the workshop circuit, an online registration form, sponsorship information, and other metadata resource information. The Webpage can be accessed through <http://www.cpe.vt.edu/usgsmt/index.html> . While there was no fee for registering for a workshop, it was essential to monitor registration in order to provide materials and handouts, lunches (provided by sponsors), and to cap registration when demand exceeded facility limitations.

To encourage local government participation in the workshops, travel stipends were offered to local government personnel. It was clearly evident that local government

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## Metadata Creators Workshops Offered Across Virginia

By:  
John McGee  
Virginia Geospatial Extension Specialist

commissions (PDC's) and state agency personnel. Workshop participation by non-profit organizations, federal employees, and private sector companies working in Virginia is also encouraged.

The Virginia Geospatial Extension Program, in partnership with James Wilson at Old Dominion University (ODU) is providing a circuit of free metadata training workshops at six locations across the Commonwealth during the summer of 2006. These workshops are funded by a 2006 CAP grant through the United States Geological Survey (USGS) and the Federal Geographic Data Committee (FGDC).

This project will facilitate Virginia's metadata development and coordination efforts, by providing "Metadata Creator Workshops". These workshops have several targeted audiences including: local governments, planning district

One-day Metadata Creator Workshops will be held at six locations across the Commonwealth:

- July 24<sup>th</sup> - Harrisonburg, VA (JMU)
- July 27<sup>th</sup> - Richmond, VA (VCU Center for Environmental Studies)
- July 28<sup>th</sup> - Norfolk, VA (ODU)
- August 9<sup>th</sup> - Blacksburg, VA (VT Center for Environmental Applications of Remote Sensing)
- August 15<sup>th</sup> - Abingdon, VA (Southwest VA Higher Edu. Center)
- August 16<sup>th</sup> - Danville, VA (Regional Center for Applied Technology [RCATT])

The metadata training workshop circuit builds upon a previous CAP project ("Documenting Local Government & Research Data in the Shenandoah Valley") that acquired 150 free seats for the ESRI Virtual Campus Course on creating metadata with ArcGIS. These seats will be distributed to targeted key personnel in every local government in Virginia. In addition, the workshop circuit builds on the efforts of the Virginia Geographic Information Network (VGIN) to develop a statewide

metadata clearinghouse.

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For more information contact:

The Virginia Geospatial Extension Program  
(540) 231-2428  
www.cnr.vt.edu/gep  
jmcg@vt.edu

The Virginia Geospatial Newsletter is a quarterly publication developed through the Virginia Geospatial Extension Program, a partnership between the Virginia Space Grant Consortium (VSGC) and Virginia Cooperative Extension (VCE). The newsletter is published in conjunction with The Virginia Geographic Information Network (VGIN).

The purpose of the Virginia Geospatial Newsletter is to highlight innovative geospatial products and services throughout the commonwealth and to widely disseminate geospatial knowledge and awareness throughout Virginia.

If you have suggestions or comments, or if you would like to contribute to the newsletter, please contact John McGee at the Virginia Geospatial Extension Program (jmcg@vt.edu or [540] 231-2428).

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Figure 1: The Spring 2006 Edition of the Virginia Geospatial Newsletter  
<http://www.cnr.vt.edu/gep/pdfFiles/VAGeoNewsletter-Spring2006.pdf>

**Virginia Metadata Training**  
 JULY 24 - AUGUST 16, 2006 - VARIOUS LOCATIONS IN VIRGINIA

**Workshop Overview:**

This workshop is appropriate for introductory to advanced GIS users, and GIS managers/coordinators. The goal of this workshop is to create a cadre of trained metadata creators who can then return to their respective organizations, and provide further metadata training to their peers and co-workers. Through this workshop, participants will work with the Virginia Metadata Standard. In addition, participants will be provided with an overview of Virginia's Metadata Clearinghouse, and will receive training on how to generate metadata, and submit metadata to the Virginia Metadata Clearinghouse if desired. It is anticipated that participants will complete a metadata record from start to finish by the conclusion of this workshop. Through the Virginia Metadata Training Workshop, participants will acquire hands-on metadata training. Proposed work flows will be provided to encourage participants to institutionalize the creation of metadata within their respective organizations.

This workshop is offered to government agencies, non-profit organizations, and other interested groups through six locations across Virginia during the summer of 2006.

**What is Geospatial Metadata?**

Metadata is more than just "data about data". Metadata serves as a critical resource for organizations at all levels of government, and the private sector. Metadata characterizes geospatial data investments, and serves to support the cataloging of information that is tied to GPS, GIS, and remote sensing data catalogues. Geospatial metadata effectively serves as a documented record designed to protect the geospatial data investments of any organization. In addition, metadata provides users throughout your organization with information about your data assets. Geospatial metadata is a fundamental component in the development of geospatial data catalogues and clearinghouses. Finally, geospatial metadata provides information to process and interpret data received through a transfer from an external source. Metadata supports the efficient sharing of data resources both within, and between organizations.

**Who Should Attend?**

This workshop is appropriate for anyone working with geospatial (GIS, GPS, Remote Sensing) data. Geospatial users at all levels (beginner, intermediate, advanced) are encouraged to attend. Local government personnel are strongly encouraged to attend, as are regional, state and federal agency personnel, stakeholders associated with non profit institutions, as well as other geospatial stakeholders.

**Instructors**

John McGee, Ph.D. (Virginia Tech) and James W. Wilson, Ph.D. (ODU) bring a wealth of experience in all areas of metadata creation. In addition, both John and James have extensive experience working with local, regional, state, and national government agencies, as well as the private sector.

**For More Information Contact:**  
 John McGee  
 Geospatial Extension Specialist  
 College of Natural Resources  
 (540) 231-2428  
 Email: [jmcg@vt.edu](mailto:jmcg@vt.edu)

[General Information](#) | [Locations](#) | [Agenda](#) | [Sponsors](#) | [Registration](#)

Figure 2: The Virginia Metadata Marketing and Online Registration WebSite



organizations and personnel understood the value of these workshops. We had funding to support ~50 travel scholarships. However, only 2 local government travel scholarships were requested and provided.

### Sponsorship

Private sector firms across Virginia were contacted and offered sponsorship opportunities for the metadata workshop circuit. Sponsorship responsibilities required that companies provide boxed lunches to workshop participants. Five private sector sponsors were identified. These sponsors included: Anderson and Associates (Blacksburg and Abingdon workshops), Earth Vector Systems (Harrisonburg workshop), GeoDecisions, Woolpert, and Baker (Norfolk workshop) Timmons (Richmond workshop), and Dewberry (Danville workshop). In return, these companies received recognition at their sponsored workshop. In addition, their company logo's were placed on the online metadata information and registration webpage (<http://www.cpe.vt.edu/usgsmt/sponsors.html>).

### **Summary of Training Activities and Outcomes**

*Virginia's FGDC Metadata Creator* workshops were held at six locations across the Commonwealth (see Figure 3). Workshop locations and dates are included below:

<b>July 24th</b>	Harrisonburg, VA (JMU, ISAT/CS Room 336)
<b>July 27th</b>	Richmond, VA (VCU Center for Environmental Studies)
<b>July 28th</b>	Norfolk, VA (ODU)
<b>August 9th</b>	Blacksburg, VA (VT)
<b>August 15th</b>	Abingdon, VA (Southwest VA Higher Edu. Center)
<b>August 16th</b>	Danville, VA (Regional Center for Applied Technology [RCATT])

*Virginia's FGDC Metadata Creator* workshops fully complied with the FGDC's core curriculum. These workshops were hands-on oriented, and were conducted in university and community college computer labs. Participants attending these workshops had access to a networked computer terminal. Instruction included oral presentations, discussions, followed by hands-on exercises provided in a Virginia context to reinforce the material covered.

In order to both facilitate instruction at the workshops, to encourage a "train the trainer" approach, and to encourage an environment by which metadata workshop participants could return to their organizations and provide workshop materials and instruction to their peers and co-workers, the Virginia Metadata Resource Toolkit was developed. This toolkit borrowed extensively from material that was developed by the FGDC, the NOAA Coastal Services Center, and other organizations. The Virginia Geospatial

A Comprehensive Approach:  
Metadata Training Workshops Conducted to Date

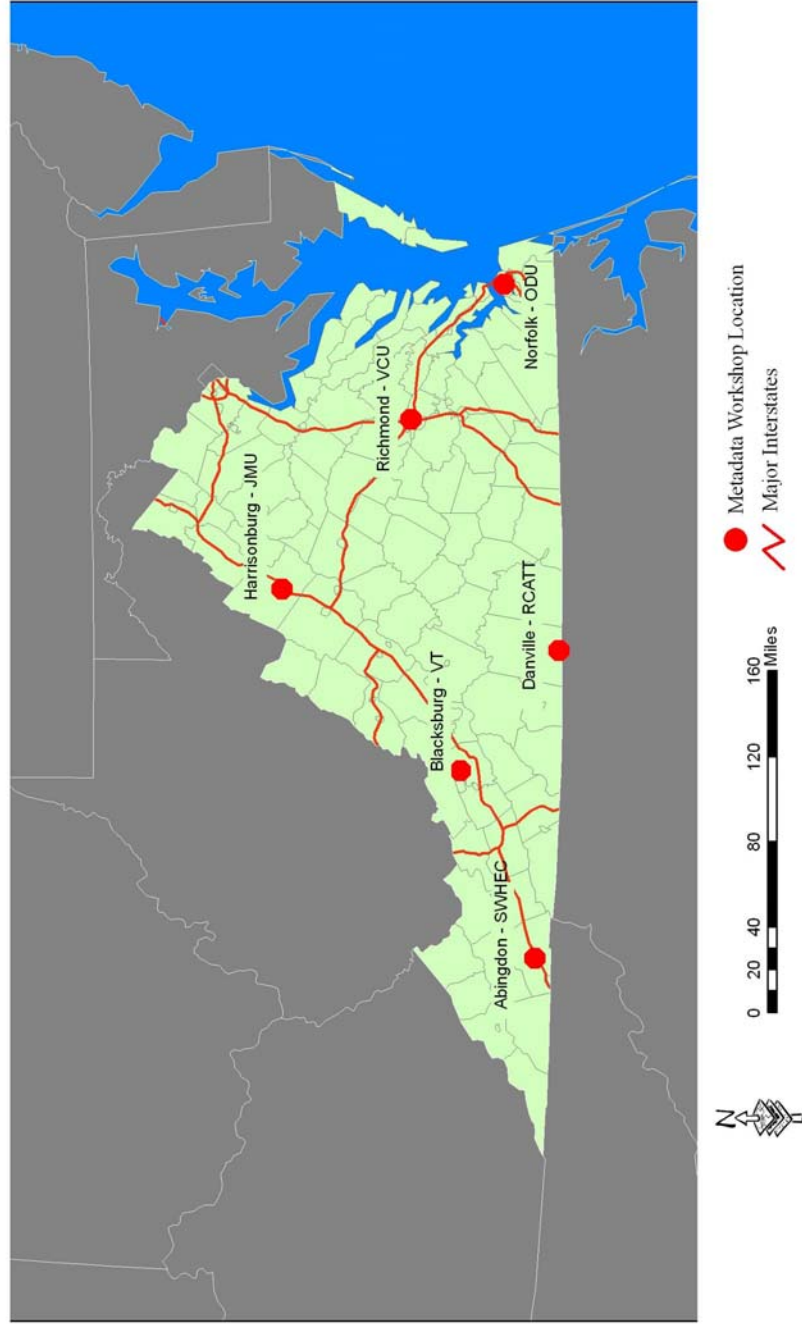
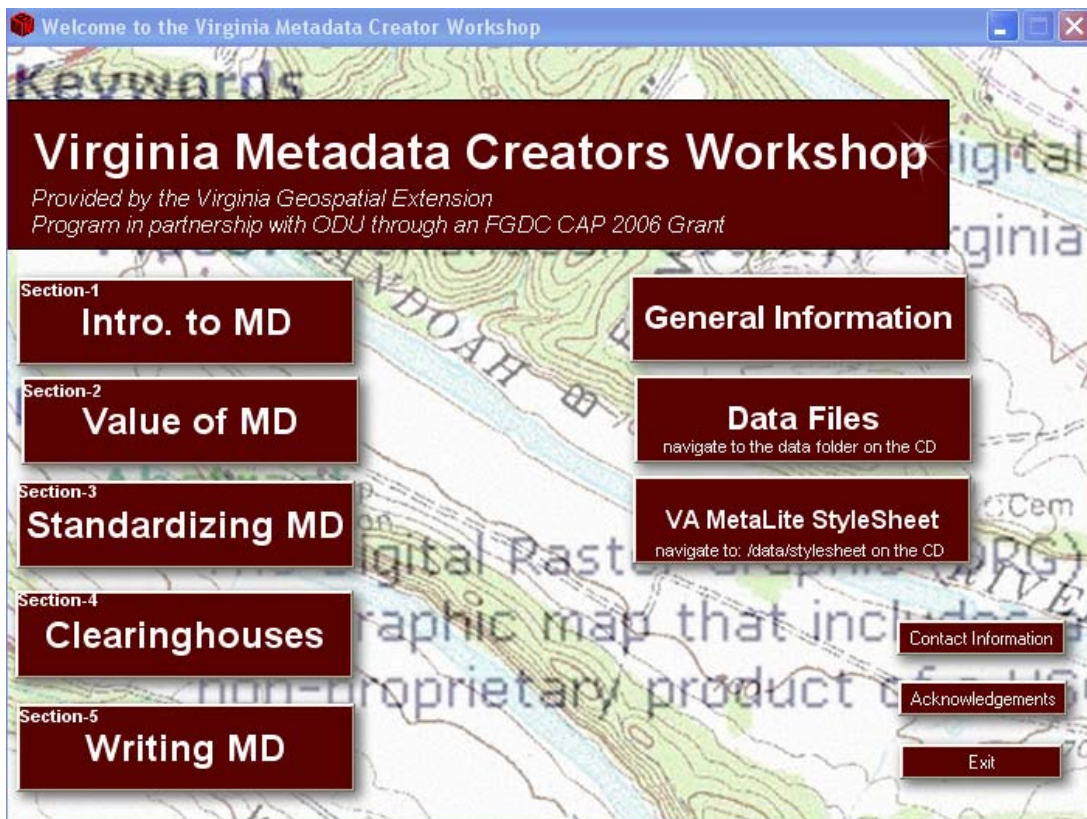


Figure 3: Locations of completed Metadata Training Workshops

Extension Program modified these resources to better fit Virginia’s regional context. One hundred and twenty copies (120) of the Virginia Metadata Resource Toolkit were initially printed.

The Virginia Metadata Resource Toolkit consists of a hardcopy document (notebook) and a CD that contains digital copies of all of the handouts and presentations. The CD resources are provided through a customized user interface (see Figure 4) that “walks” the user through the workshop (section by section for each of the five sections). All resources (i.e. PowerPoint Presentations, exercises, handouts, articles, manuscripts and documents) are provided on the CD so that any individual can easily provide metadata instruction or generate copies on demand.



**Figure 4: User Interface from the Virginia Metadata Resource Toolkit CD**

Copies of the CD and the notebook were provided to all participants at the workshops. Copies have also been provided to each of the 14 geospatial extension specialists across the United States to promote the transfer of training materials on a national level.

A second printing of the Virginia Metadata Resource Toolkit is scheduled for early December. These additional copies will be used to support further metadata workshops in Virginia (we have been invited to provide geospatial metadata training for VDOT, the Virginia GISExpo, and hold a 1 day training session at next year’s Virginia’s GIS Conference). Copies will also be provided to 4-year college and university GIS faculty

across Virginia, as well as selected GIS Community College faculty and staff in Virginia and North Carolina to support geospatial educational efforts in higher education. Copies have been requested by other organizations (i.e. Maryland Cooperative Extension). It is anticipated that the Virginia Metadata Resource Toolkit can be made into an Extension Publication, and can then be offered to anyone by request indefinitely.

It should also be noted that these resources associated with the Virginia Metadata Toolkit are for download available online through the Virginia Geospatial Extension Program's website ([http://www.cnr.vt.edu/gep/metadata\\_res.html](http://www.cnr.vt.edu/gep/metadata_res.html) - see Figure 5).

The screenshot shows the website for the Virginia's Geospatial Extension Program. On the left is a navigation menu with links: Home, Tools, Training, Resources, Background, Mission/Objectives, News and Information, Contact Information, and Partners. Below the menu are logos for VSGC and VCE. A red box highlights a 'Join our mailing list!' link, and below it is a 'Questions From the Field' icon. The main content area is titled 'Resources' and 'Virginia Metadata Toolkit Resources'. It includes a link 'Want to learn more about metadata?', a note about funding from the Federal Geographic Data Committee, a link to the 'Metadata Workshop Table of Contents', and three sections of resources:

- Section 1: Introduction to Metadata**
  - PowerPoint: Intro. to Metadata
  - Handout: Intro. to Metadata
  - What is Metadata (FGDC)
  - An example of Geospatial Metadata (SSURGO Soils)
  - Exercise: Getting to Know Geospatial Metadata
- Section 2: The Value of Metadata**
  - PowerPoint: The Value of Metadata
  - Handout: The Value of Metadata
  - Article: Institutionalize Metadata before it Institutionalizes You! (L. Wayne)
  - Article: Metadata in Action (L. Wayne)
  - Article: The Mars Orbiter Failure (even NASA needs Metadata)
- Section 3: Why Standardize Metadata?**
  - PowerPoint: Why Standardize Metadata?
  - Handout: Why Standardize Metadata?

**Figure 5: The entire Virginia Geospatial Metadata Toolkit can be downloaded from the Virginia Geospatial Extension Program Webpage.**

Clearly, extensive marketing efforts associated with this workshop circuit paid off. One of the workshops (Richmond) filled to capacity in 24 hours. I was later informed that the Richmond workshop had a waiting list of 50 people. Follow-up workshops are planned



for this region in 2007. In all, four of the six workshops were (more or less) registered to capacity. The other two workshops (Abingdon and Danville) are associated with rural areas of the state. While metadata training was well received and is in demand in these areas, these regions just do not currently have the “critical mass” (or the critical awareness for the need for metadata training) of GIS professionals that other regions of the Commonwealth have.

Approximately 110 individuals pre-registered for one of the six workshops. About 15 individuals were “no shows”, and there were a few last second walk-ins. Approximately 99 individuals attended a metadata workshop to date. A breakdown of participants by workshop follows:

Metadata Workshop	Attendance				Total / workshop
	Local Govt	State Govt	Other (Regional/Federal/Nonprofit)	Private Sector	
Harrisonburg, VA (JMU)	8	1		3	<b>12</b>
Richmond, VA (VCU)	10	4	1	1	<b>16</b>
Norfolk, VA (ODU)	15	2		2	<b>19</b>
Blacksburg, VA (VT)	16	3	4	2	<b>25</b>
Abingdon, VA (SVHEC)	6	3			<b>9</b>
Danville, VA (RCATT)	14	2		2	<b>18</b>
<b>Total / Organization Type:</b>	<b>69</b>	<b>15</b>	<b>5</b>	<b>10</b>	<b>99</b>

A panel discussion on geospatial metadata (*Creating Geospatial Metadata the Virginia Way...*) was organized by the project PI’s at the Virginia GIS Conference on October 24<sup>th</sup>, 2006 at the Virginia GIS Conference. Lyle Hornbaker (VITA) provided a state agency perspective of metadata, Inez Pollack provided a local government metadata perspective, James Wilson provided a federal government perspective, and John McGee provided an overview of the Virginia Metadata Workshop Circuit, and lessons learned through this circuit.

In addition, metadata presentations were also conducted at regional user group meetings (the Hampton Roads User Group, the Shenandoah Valley GIS User Group). We have been invited to present / conduct a geospatial metadata workshop at the Virginia GISExpo and the Virginia GIS Conference in 2007. We have also submitted an abstract to present our approach to metadata training at the ESRI Educational User Conference in San Diego in June 2007.

### Next Steps

We had anticipated providing workshop participants with instruction and the opportunity to develop, upload, and publish geospatial metadata records onto the Virginia Metadata Clearinghouse (which was scheduled to be completed in the Spring 2006) as a component of the Virginia Workshop Circuit. Due to the reorganization at the Virginia Geographic Information Network (VGIN), the implementation of Virginia’s metadata clearinghouse has been delayed until the spring 2007.

However, it should be noted that one unintended impact of the Virginia Metadata Workshop Circuit, is that the workshop circuit served as a vital catalyst to reenergize VITA's (the new VGIN) efforts to develop and implement a geospatial metadata clearinghouse for the Commonwealth. VITA took an immediate interest in the metadata training circuit, and participated in all of the metadata workshops. Moreover, workshop participants were encouraged to express their needs, ideas, concerns, and general feedback associated with the potential development of a Virginia metadata clearinghouse to VITA representatives at the workshops (which they did!).

Just in recent weeks, VITA has entered negotiations with ESRI to purchase / implement the GIS Portal Toolkit. As of last week, we were informed that VITA anticipates that the Virginia Metadata Clearinghouse will be operational in the spring or summer of 2007. We anticipate conducting a follow-up metadata training workshops, again in conjunction with VITA to support Virginia's geospatial data stakeholders (local, state, and federal agency personnel, and Virginia's private sector), to further facilitate the development of metadata, and the publishing of metadata on the Virginia Metadata Clearinghouse Portal in 2007.

### **Feedback on the Cooperative Agreements Program**

This workshop circuit was extremely well received. I was confident that local governments would be very interested and engaged in the workshop circuit. These entities are often "left behind", and often do not have the resources to travel to Richmond or Northern Virginia to attend workshops. I was also surprised at the high level of interest in this program by the private sector and by larger state agencies. As mentioned before, we will be conducting metadata training workshops exclusively for the Virginia Department of Transportation in the winter of 2007.

One area where I feel that we came up "short" was on timing. We had anticipated a fully functional and operational Virginia Metadata Clearinghouse that we could work with during this workshop circuit. While we did provide an overview, and developed resources to assist participants in navigating and publishing metadata through the Geospatial One Stop (GOS), workshop participants were clearly interested in interfacing with a customized "Virginia" metadata clearinghouse. This will happen, but through follow-up workshops in partnership with VITA.

One approach that I would conduct differently, would be to attempt to "market" the metadata workshop circuit to localities in bordering states. While this metadata workshop is customized for Virginia, 90% of the information is certainly relevant to other states as well. I think that it is important for stakeholders (especially local governments) in other states to interact more with their counterparts just over state political borders, as many of the issues that they are grappling with (i.e. economic development, sprawl, watershed management) transcend political boundaries. Anything that we can do to promote interstate cooperation is beneficial.

I was very encouraged by VITA's interest in this workshop circuit, and their interest to continue to promote and encourage metadata products and services and training

opportunities in Virginia. I think that it should be mandatory for the state agency GIS coordinating body to not only support similar efforts in other states, but have a hands on role during each of the workshops. I believe that having VITA involved served to encourage their “buy in” for future metadata efforts.

Local and state government agencies provided very positive feedback on the metadata workshops. Comments and evaluations will be tabulated for the final report to the FGDC.