

# **FINAL REPORT FOR THE NORTHEASTERN LOCAL, REGIONAL AND STATE RS/GIT OUTREACH WORKSHOP, OCTOBER 2004**



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Intergovernmental relations, geographic information technology, geographic information systems, GIS, remote sensing, satellite imagery, global positioning system, GPS, geospatial data, homeland security, GIT outreach, public management, municipal government, county government, state government, federal government, multi-jurisdictional networking.

## **CREDITS AND DISCLAIMER**

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Due to the quickly-changing nature of various websites referenced in this report, some HTTP locations may not be accurate over time.

## **PREFACE**

The following report is the major written output from the Northeastern Local, Regional and State RS/GIT Outreach Workshop, held by the Institute for the Application of Geospatial Technology (IAGT), and supported by a host of sponsors, in late October 2004—a few short weeks ago. As such, it is reflective of the workshop itself and the creative exploration of concepts and ideas that preceded the event and contributed to its structure. It is not surprising that this same creative energy, having been carried into the workshop and synergized by the participants, has subsequently flowed into the discussion surrounding the exploration of findings and the presentations of written material generated for and by the participants in the workshop.

Special thanks are due to all participants for providing the “stuff” of the workshop; and yet the responsibility for the interpretive and descriptive synthesis contained herein must rest with the authors. Such is always the way of participation in collaborative processes. The individual may differ widely in opinion from the consensus of the larger group of participants, and there is no reason to assume that this will not be the case in some measure with this report. Added to this dynamic is the reality that much of the report is the result of the additional individual intellectual synthesis of the authors, facilitators and domain experts. We at IAGT shall be particularly indebted to those who, having read the report, choose to share those differing opinions or added insights with us.

The preliminary structure of this report was the result of internal conversations between IAGT staff, facilitators, and domain experts also involved in the workshop planning and execution. The participating IAGT staff brought together the skill sets of a scientist equipped with geospatial technology expertise, an outreach activities specialist, and an administrator focused on geospatial application potential. It was immediately clear that there were differences in our individual perspectives on how the workshop material might be handled and presented.

Our scientist, Matt Mercurio, a geologist, and the IAGT government programs coordinator, suggested that the application of a rigorous scientific process would lead to a very short paper, noting the brevity of scientific journal articles. The hypothesis, the source material (original documents, flip charts, evidence) needed to be re-checked, inventoried, and otherwise collected and archived and presented.

The outreach activities specialist, Beth Miller, correctly insisted that we be very clear about our intended readers before anything was written; and I worried about the largely subjective process of reporting output from facilitated meeting structures, and “administering” through the political process of collaborative writing, given the number of participants.

*The Tao of Science* by R.G.H. Siu provided the foundational insight supporting the approach to reporting that is used herein. I had recently happened upon a copy of this wonderful book at the Mobile Book Faire just outside Boston, and was struck by the applicability of some of Siu's early thinking to the writing of the workshop findings.

“...Oversimplification or reductive fallacy is a frequent blunder in management. This occurs when one feature of the total is singled out and a judgment of the whole is pronounced on the basis of that single element...

“...One profession is not an edited copy of another. For an organization involving many disciplines and operational classes, only a broad, all encompassing managerial code should be adopted, one which is capable of adjusting in turn to each of the individual elements. The degree of dispersion of the administration of authority should be guided by the latitude necessary to balance the optimal expression of the separate natures against the simultaneous diffusion of synthesis by top management...” (p. 41)

So, perhaps we, as attendees and participants of the workshop, would have been described by Siu in the late 1950's as, “... an organization involving many disciplines and operational classes...” (I had asked the workshop group to think of themselves as an “Ad Hoc task force,” surely an organization, albeit a temporary one.)

As “NASA ambassadors,” IAGT has been focused for some time on accelerating the societal benefits from data and technologies developed by NASA in the Science Mission Directorate's Sun – Earth Systems Division. Thus we exist within an “application domain” where our work is designed to make practical use of technology that is sometimes developed in pursuit of basic understanding, the world of pure science. So it is from this view that I suggest the importance of remembering why the structure of GIT outreach programs is so important; and it is not to promote geospatial informational technology (GIT).

GIT is a route to an end; and it is the end that is so important—that is, the acceleration of such benefits from GIT as increasing efficiencies in operations, reducing redundant costs, and literally improving decision-making at all participating levels of government. GIT “outreach” is not marketing; it is collaboration. That is why this workshop was structured so carefully to include municipal, local, county, regional, state, and federal representatives from both the legislative and executive branches. We must continue to nurture policy and management attention to GIT at leadership levels if such collaboration is to grow. The power of this technology is offered at a time when societal governing issues have become global and increasingly complex, particularly in the areas of water

and natural resources management, planning and community growth, emergency management and homeland security. These are the three functional areas of focus at the workshop. Such is the core of GIT's value at the application level: service to the citizen—to all citizens.

Are GIT application potentials really big enough to matter? According to the January 2004 issue of *Nature*, "...The U.S. Department of Labor identified geotechnology as one of the three most important emerging and evolving fields..." and it is expected to become a 30 billion dollar market by 2005. Over 140,000 organizations globally use geographic information systems, a subset of GIT, according to the same article. So we are particularly indebted to the wide range of participants that attended the workshop and represented these sectors so well. This technology is a powerful, transformational tool that is offered at a time when we are confronted by a barrage of complex and difficult problems that require collaboration across levels of government, even at global levels. Hopefully this unique workshop will have helped us better understand those dynamics that make GIT collaboration efforts successful and further accelerate the rate at which the technology can be put in ever expanding service to all citizens.

*Robert N. Brower, CEO  
Institute for the Application of Geospatial Technology  
at Cayuga Community College, Inc.  
January 2005*

## **ACKNOWLEDGEMENTS**

The Institute for the Application of Geospatial Technology (IAGT) gratefully acknowledges the following cosponsors, conference organizers, steering committee members and panelists who diligently helped to shape the focus, approach and agenda of the *Northeastern Local, Regional and State RS/GIT Outreach Workshop*:

### **Cosponsors:**

Federal Geographic Data Committee (FGDC)  
National Aeronautics and Space Administration – Applied Science Program (NASA/ASP)  
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Paul Young, Program Officer for Eastern Region Geography, USGS

## **LEAD AUTHOR'S NOTE**

Over 20 years of involvement, analysis and advocacy in geographic/geospatial information technology (GIT) have enabled me to see how collaboration can maximize GIT benefits. This certainly was the case with this workshop. We are grateful to all steering committee members, speakers, facilitators, participants and others who helped create a beneficial workshop, both for attendees, and also others in the Northeast and Nation.

The workshop originated with the vision and support of IAGT, particularly Bob Brower, Matt Mercurio and Beth Miller. Early external funding support helped make it a reality. We extend our sincere thanks to Anne Hale Miglarese, formerly of the NOAA Coastal Services Center (now EarthData), Milo Robinson of FGDC, Barbara Ryan of USGS, Leslie Wollack of the Geospatial One Stop Project, and others from NASA and these agencies.

We very much appreciate the crucial guidance and assistance provided by these and other friends and colleagues. Many thanks to lead contacts in all 14 states, and particularly Dave Brotzman, Chris Cialek, Ted Koch and Rob Surber. The states and several national associations recommended superb workshop invitees. Thanks to Beverly Nykwist (National Association of Regional Councils [NARC]), Kevin Neimond (IAGT/National Association of Counties [NACo]), Dave Borak (International City/County Management Association [ICMA]), Mike Frischkorn (National Association of Towns and Townships [NATaT]), Chris Becker (National League of Cities [NLC]) and Wendy Francis (Urban and Regional Information Systems Association [URISA]).

The quality of breakout sessions was due in large part to exceptional facilitators and helpers. Many thanks to Alan Leidner (Booz Allen Hamilton, and Sue Kalweit for supporting Alan's involvement); Martin Roche (formerly of Canin Associates, Inc. and now EarthData); and Kevin Neimond (IAGT/NACo), who helped prepare and led the day-long governing functions breakout sessions. Tim Haithcoat (University of Missouri) also aided these sessions. John Bossler (Ohio); Dave Brotzman (Vermont); and Tom Wieczorek (Ionia, Michigan) joined the others as excellent facilitators for the governing sector sessions.

Finally, many people noted above and others helped to ensure the usefulness of this report in the evolving path toward more effective GIT outreach. I am very grateful to excellent co-authors, the facilitators for validating participant input; Dr. Zorica Nedovic-Budic (University of Illinois) for statistical help; Dr. Bruce McDowell (National Academy of Public Administration), Gaylord Burke (Merrimack Valley Planning Commission, Massachusetts), and Chris Cialek (Minnesota) for their guidance, Paul Opel for web design; and Carolyn Bean (formerly of IAGT) and Melanie Ochs (IAGT) for administrative support. While extensive efforts were made to ensure accuracy, any omissions or errors are the responsibility of the authors and sincere apologies are offered in any such cases.

*Lisa Warnecke, Ph.D., MBA*  
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## EXECUTIVE SUMMARY

Selected municipal, county, regional and state leaders and representatives from 14 northeastern states met at the *Northeastern Local, Regional and State RS/GIT Outreach Workshop* in October 2004. The Institute for the Application of Geospatial Technology (IAGT) hosted and organized the event with sponsorship from the:

- National Aeronautics and Space Administration,
- U.S. Geological Survey,
- Federal Geographic Data Committee),
- National Oceanic and Atmospheric Administration/Coastal Services Center,
- National Association of Counties, and
- National States Geographic Information Council.

Workshop participants explored experiences and perspectives, and uniquely provided input directed to federal organizations concerning outreach strategies and programs about remote sensing (RS) and other geographic/geospatial information technology (GIT).

Key among the conclusions drawn from this three-day event was the clear sense that intergovernmental GIT coordination and outreach must be elevated as a critical component of federal programs. This is necessary in order to leverage and maximize GIT investments, opportunities and results across all levels of government to meet the common goal to better serve the public. Data redundancy and underutilization seem to rise with the increasing proliferation of federal GIT activities and corresponding data development efforts and requests. Many federal GIT deliberations have been too protracted, and increasingly redundant outreach activities can be counter productive.

Workshop participants indicated a new sense of urgency and opportunity exists today given recent advances and increasing recognition of GIT benefits and potential to address many growing societal needs. Real collaboration, more effective government, and better service to the public can be a reality through strengthened and synchronized intergovernmental GIT and outreach efforts. Many recent federal initiatives can be strengthened with attention to local, regional and state entities, needs and outreach, including the Integrated Earth Observing System.

The unique workshop brought together an invited set of 53 municipal, county, regional and state decision-makers. Eight federal organizations from seven agencies were represented, serving primarily as facilitators and resources to help non-federal participants refine and reveal unique perspectives and input. Unlike

other federally sponsored events, municipal, county, regional and state representatives constituted the majority of participants.

The workshop program provided plenary presentations complemented by two sets of breakout sessions. The first set of sessions included facilitated dialogue focused on three critical governing functions:

- Water and Other Natural Resources Management
- Planning and Community Growth Management
- Homeland Security and Disaster/Emergency Management

Synthesis of input from each session's deliberations resulted in the delineation of 12 essential traits of successful GIT outreach strategies and programs:

- Defined Measures
- Incentives
- Sustainability
- Early User Engagement
- Meaningful Interaction
- Local Training
- Build Mission Capacity
- Flexibility
- Active Champions
- Effective Communications
- Unified Federal Voice
- Simplicity

This list was evaluated through multiple facilitated discussions among peer groups representing municipal, county, regional, state and federal sectors. Additional important traits were identified, particularly by local and regional participants. Subsequent input and synthesis yielded a series of recommendations aimed at improving intergovernmental GIT collaboration and outreach approaches. Significant recommendations include suggestions to:

1. Recognize that technology and/or data is not the goal. GIT, however, can be promoted as a uniquely efficient transformational tool for modeling reality and addressing common issues and needs across governments.
2. Develop bottom-up and sustained outreach approaches, seeking broad participation from target audiences and ensuring meaningful and cost effective partner participation.
3. Ensure effective communications and interactions by articulating messages and documenting results in terms that resonate with local government.
4. "Extend the reach of outreach" to the Nation's varied local, regional and state entities, employing federalism principles and opportunities – and proven intergovernmental approaches - to create customized, multifaceted approaches while helping disadvantaged jurisdictions and others.

5. Establish integrated intergovernmental GIT approaches leveraging state, regional and county intermediaries and existing GIT and other outreach organizations, structures, channels, programs and events to create economies of scale.
6. Seek to understand and help strengthen local, regional and state capacity and capability, both institutionally and technically, and particularly to help address local policy needs and governing and business missions.
7. Ensure that outreach is an essential part of federal GIT programming, and dedicate financial and human resources to emulate and synchronize with successful outreach programs at USGS, NOAA and USDA.
8. Revisit past recommendations in several reports concerning reorganization of federal GIT roles and responsibilities, and engage local, regional and state leaders to design an integrated national public sector GIT program. A key component of this program should be to develop and maintain key data sets with sufficient accuracy to ensure local government utility, and provide for cost sharing and benefits across levels of government.
9. Inventory and synchronize federal government GIT strategies and programs – both in general and concerning outreach - within and across agencies, and particularly in regional and field deployment.
10. Strengthen the focus on improving, using, investing in and sharing local data, while reducing emphasis on software and technology development.

The full list of workshop findings found in this report provide a foundation for: 1) governmental leaders to develop and implement action plans that advocate improved GIT outreach and intergovernmental collaboration, and 2) federal and other GIT outreach providers to apply in evaluating current programs and designing future efforts. Implementation of these recommendations will provide value by refining national policy and outreach strategies and programs to strengthen GIT institutionalization and collaboration across governments to meet the common public good.

**Table of Contents**

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**SUGGESTED CITATION..... I**  
**KEYWORDS..... I**  
**CREDITS AND DISCLAIMER..... I**  
**PREFACE..... II**  
**ACKNOWLEDGEMENTS..... V**  
**LEAD AUTHOR’S NOTE ..... VII**  
**EXECUTIVE SUMMARY ..... VIII**  
**TABLE OF CONTENTS ..... XI**

**1 CHAPTER 1. INTRODUCTION: SETTING THE STAGE ..... 1**

1.1 IAGT MISSION TO ADVANCE REMOTE SENSING IN LOCAL AND STATE GOVERNMENTS ..... 1  
1.2 WORKSHOP PURPOSE AND GOALS: SHARPENING THE FOCUS ..... 5  
1.2.1 *Enhance RS/GIT Outreach Strategies and Programs..... 6*  
1.2.2 *Emphasize Remote Sensing, but in the Context of other GIT Implementation..... 7*  
1.2.3 *Reveal More Extensive Institutional Complexities and Challenges in the Northeast 7*  
1.2.4 *Provide Benefits for Individual Workshop Participants..... 7*  
1.3 REPORT SCOPE, METHODOLOGY AND CONTENTS ..... 8

**2 CHAPTER 2. BACKGROUND AND CONTEXT ..... 10**

2.1 FEDERALISM IMPACTS ON GIT..... 10  
2.2 UNDERSTANDING LOCAL GOVERNMENTS ..... 11  
2.2.1 *Unique Local Government Conditions in the Northeast ..... 13*  
2.2.2 *County Governments..... 13*  
2.2.3 *Municipal and Township Governments..... 16*  
2.2.4 *Local Government Autonomy and Authority..... 17*  
2.2.5 *Regional Councils..... 20*  
2.2.6 *Impacts on Local Functionality and Data..... 22*  
2.3 STATE AND FEDERAL GOVERNMENTS ..... 23  
2.4 AUTHORIZING DIRECTION FOR GIT INSTITUTIONALIZATION..... 24  
2.4.1 *Federal Government..... 24*  
2.4.2 *State Government..... 25*  
2.5 KEY FINDINGS AND RECOMMENDATIONS BY OTHERS ABOUT RS/GIT OUTREACH ..... 26

**3 CHAPTER 3. WORKSHOP APPROACH AND DESIGN..... 28**

3.1 WORKSHOP PLANNING AND DESCRIPTION ..... 28  
3.2 WORKSHOP PARTICIPATION AND INVITATION PROCESS ..... 28  
3.3 WORKSHOP PROGRAM ..... 30  
3.4 FUNCTIONAL BREAKOUT SESSIONS ..... 35  
3.4.1 *Breakout Session Determinations ..... 35*  
3.4.2 *Breakout Session Design and Speaker Guidance ..... 36*

**4 CHAPTER 4. PROGRAM HIGHLIGHTS ..... 42**

4.1 PERSPECTIVES ON GIT AND OUTREACH ACTIVITIES ..... 42  
4.1.1 *Congressional Interest and News..... 43*  
4.1.2 *Lessons Learned from Non-GIT Federal Outreach Programs ..... 45*  
4.1.3 *Perspectives of a Local Elected Official..... 46*  
4.1.4 *Institute for the Application of Geospatial Technology Outreach Efforts and State Remote Sensing Applications Projects..... 47*  
4.1.5 *Views from Mars ..... 47*

4.2	FEDERAL REMOTE SENSING/GIT OUTREACH PROVIDERS AND STRATEGIES – WHAT’S NEW?	48
4.3	STATE REMOTE SENSING AND GIT EFFORTS TO ASSIST LOCALITIES AND REGIONAL ENTITIES	51
4.4	ORIENTATION SESSION FOR MUNICIPAL, COUNTY AND REGIONAL REPRESENTATIVES.....	53
4.5	NEAF MEETING HELD AT THE WORKSHOP .....	54
4.6	WATER AND OTHER NATURAL RESOURCES (WNR) MANAGEMENT BREAKOUT SESSION ....	55
4.7	PLANNING AND COMMUNITY GROWTH MANAGEMENT BREAKOUT SESSION .....	59
4.8	HOMELAND SECURITY AND DISASTER/EMERGENCY MANAGEMENT BREAKOUT SESSION ....	63
<b>5</b>	<b>CHAPTER 5. FINDINGS FROM BREAKOUT DISCUSSIONS.....</b>	<b>68</b>
5.1	DETERMINATION OF NEEDED GIT OUTREACH TRAITS.....	68
5.2	VALIDATION AND SYNTHESIS OF NEEDED GIT OUTREACH TRAITS.....	69
5.3	DIFFERING PERSPECTIVES BY GOVERNING FUNCTION.....	71
5.3.1	<i>Water and Other Natural Resources (WNR) Management.....</i>	<i>73</i>
5.3.2	<i>Planning and Community Growth (PCG) Management.....</i>	<i>74</i>
5.3.3	<i>Homeland Security and Disaster/Emergency (HSDE) Management.....</i>	<i>75</i>
5.4	DIFFERING PERSPECTIVES BY GOVERNING SECTOR.....	76
5.4.1	<i>Municipal Governments.....</i>	<i>77</i>
5.4.2	<i>County Governments.....</i>	<i>79</i>
5.4.3	<i>Regional Councils.....</i>	<i>80</i>
5.4.4	<i>State Governments.....</i>	<i>81</i>
5.4.5	<i>Federal Government.....</i>	<i>82</i>
<b>6</b>	<b>CHAPTER 6. RECOMMENDED GIT OUTREACH APPROACHES .....</b>	<b>84</b>
6.1	OVERALL GIT OUTREACH VISION AND PRINCIPLES.....	84
6.2	GIT OUTREACH STRATEGY COMPONENTS.....	85
6.3	GIT OUTREACH PROGRAM CHARACTERISTICS, ELEMENTS AND RESOURCES .....	87
6.4	OTHER KEY GIT PRIORITIES TO AID OUTREACH.....	91
<b>7</b>	<b>CHAPTER 7. WORKSHOP FEEDBACK .....</b>	<b>93</b>
7.1	EVALUATION FORM FORMAT .....	93
7.2	RESPONDING TO QUESTIONS WITH NUMERIC RANKINGS.....	93
7.2.1	<i>Overall Workshop Value.....</i>	<i>94</i>
7.2.2	<i>Workshop Logistics.....</i>	<i>94</i>
7.2.3	<i>Tuesday Sessions.....</i>	<i>95</i>
7.2.4	<i>Wednesday Sessions .....</i>	<i>95</i>
7.2.5	<i>Thursday Sessions .....</i>	<i>96</i>
7.3	SHORT ANSWER QUESTIONS .....	96
7.3.1	<i>Please tell us what parts of the workshop you found most useful.....</i>	<i>97</i>
7.3.2	<i>Were there any aspects of the workshop which detracted from its effectiveness?.</i>	<i>98</i>
7.3.3	<i>Were there additional topics you would add to make a more effective workshop?.</i>	<i>98</i>
7.3.4	<i>Do you have any other suggestions for improving the workshop?.....</i>	<i>99</i>
7.3.5	<i>How will you use what you learned at the workshop within your jurisdiction?.....</i>	<i>99</i>
7.3.6	<i>What are your next steps?.....</i>	<i>100</i>
7.3.7	<i>Do you have any overall or additional comments?.....</i>	<i>101</i>
7.4	CLOSING WORKSHOP PANEL .....	101
<b>8</b>	<b>CHAPTER 8. CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>105</b>
8.1	WERE THE WORKSHOP GOALS MET?.....	106
8.1.1	<i>Goal one: Provide multi-jurisdictional networking and feedback opportunities ....</i>	<i>107</i>
8.1.2	<i>Goal two: Enable federal officials to hear differing local, regional, and state needs, experiences, and perspectives. ....</i>	<i>107</i>

8.1.3	Goal three: Determine key issues, principles, characteristics, components and other recommendations for federal and other RS/GIT outreach strategies and programs to assist local, regional and state entities. ....	108
8.1.4	Goal four: Inform decision makers and technologists about the “why” and “how” of remote sensing from outreach experiences and successful applications. ....	109
8.1.5	Other Outcomes and General conclusions.....	110
8.2	SUMMARY OF WORKSHOP INPUT AND FINDINGS.....	115
8.2.1	Calls for Action.....	115
8.2.2	Recommendations from the Workshop .....	117
8.2.3	Lessons Learned and Suggestions for Future Workshops.....	121
<b>REFERENCES CITED .....</b>		<b>125</b>
<b>ACRONYMS.....</b>		<b>127</b>
<b>APPENDIX A WORKSHOP AGENDA .....</b>		<b>129</b>
<b>APPENDIX B ATTENDEE LIST .....</b>		<b>139</b>
<b>APPENDIX C WORKSHOP EVALUATION .....</b>		<b>145</b>
<b>APPENDIX D GOVERNING FUNCTIONS BREAKOUT SESSIONS - COMPILATION OF RAW DATA .....</b>		<b>147</b>

## **List of Figures**

Figure 1-1: States Included in the IAGT Northeast Affiliates (NEAF).....	2
Figure 1-2: IAGT Northeast Remote Sensing Application Projects .....	3
Figure 2-1: Local Governments in the Northeast.....	12
Figure 2-2: Local Elected Officials (in Addition to Governing Bodies).....	15
Figure 2-3: Source of Local Government Authority and Home Rule Status in the Northeast.....	19
Figure 2-4: Local Government Structure and Responsibilities in the Northeast .....	19
Figure 2-5: Example Data Activities in a State with Regional Councils Active in GIT: Merrimack Valley Planning Commission, Massachusetts .....	23
Figure 2-6: Example Data Activities in a State with Counties Active in GIT: Three Counties in Pennsylvania .....	23
Figure 3-1: Workshop at a Glance .....	32
Figure 3-2: Common Local, Regional and State Functions Addressed in Three Workshop Breakout Sessions .....	36
Figure 5-1: List of Needed GIT Outreach Traits.....	70
Figure 5-2: Percentage of Responses by Function.....	72
Figure 5-3: Distribution of Responses by Function.....	72
Figure 5-4: Percentage of Responses by Sector.....	78
Figure 5-5: Distribution of Responses by Sector .....	78
Figure 7-1: Ranking of Overall Workshop Value .....	94
Figure 7-2: Ranking of Workshop Logistics .....	94
Figure 7-3: Ranking of Tuesday Sessions .....	95
Figure 7-4: Ranking of Wednesday Sessions.....	96
Figure 7-5: Ranking of Thursday Sessions .....	96
Figure 8-1: GIT Field Structures and Primary Partners of Selected Agencies.....	112
Figure 8-2: Intergovernmental Cooperation Act of 1968: Federal Authority for GIT Outreach Across Federal, State, and Local Governments to Improve Program Results .....	114

## **1 CHAPTER 1. INTRODUCTION: SETTING THE STAGE**

As society's challenges grow more complex, demand for effective use and management of geographic/geospatial information technology (GIT) is also increasing. The growing convergence of many forms of GIT, such as geographic information systems (GIS), remote sensing (RS) and the Global Positioning System (GPS), provide unprecedented opportunities for essentially all governments to better make decisions and manage operations to meet the needs of the citizenry. Despite documented GIT advances for over 20 years, and growing demand for better approaches and tools to improve governance, challenges continue to fully institutionalize GIT as part of regular business practice in most governments. GIT coordination challenges are intensifying due to the growing proliferation of GIT outreach by federal agencies to state and local governments. As demand for more and better data grows, it is increasingly realized that local governments in particular are critical sources of quality data. In many respects these outreach efforts can result in many positive impacts, but concerns are rising about the "stovepiping" and lack of synchronization of many outreach efforts. Missed opportunities also seem to be increasing because knowledge of local government authorization and functionality is not fully considered in outreach strategies, and distinctions between GIT "haves" and "have-nots" continue to grow.

This report provides a summary of a workshop hosted by the Institute for the Application of Geospatial Technology (IAGT) to begin to specifically and uniquely address GIT outreach challenges and opportunities. This initiative specifically endeavored to address these conditions and issues from a public management perspective. Much dialogue is expressed about partnerships, but sharper focus is needed about sharing missions and enhancing intergovernmental relations to help make a practical difference in terms of governing outcomes. With this context, this chapter provides an overview of the events leading up to the workshop, the goals as determined by the workshop steering committee and an overview of this report.

### **1.1 IAGT MISSION TO ADVANCE REMOTE SENSING IN LOCAL AND STATE GOVERNMENTS**

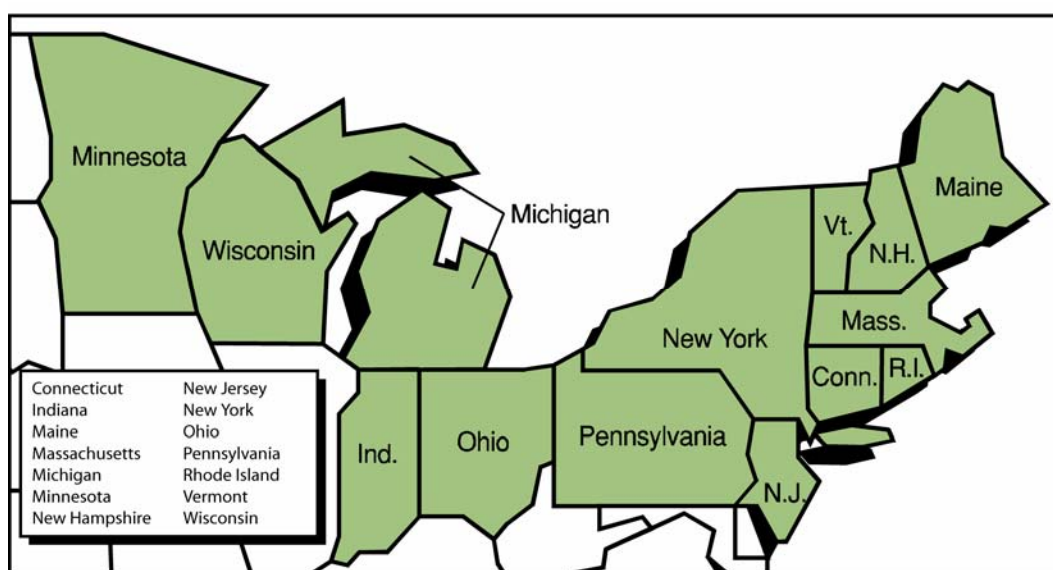
The Institute for the Application of Geospatial Technology (IAGT) was established to help advance the use of remote sensing resources sponsored and developed by the National Aeronautics and Space Administration (NASA), and particularly in state and local governments. With this goal, IAGT acts as an ambassador for NASA and has conducted several related efforts. NASA now concentrates efforts to help federal agencies and others develop decision support tools for the following 12 priority application areas, and IAGT has provided assistance in this regard:

- Agricultural Efficiency
- Air Quality
- Aviation
- Carbon Management
- Coastal Management
- Disaster Management
- Ecological Forecasting
- Energy Management

- Homeland Security
- Invasive Species
- Public Health
- Water Management

During the late 1990s, NASA initiated a regional approach to help serve state and local governments. IAGT was asked to lead this effort in the Northeastern region defined by 14 states shown in Figure 1-1. A leading component of this strategy was to organize a regional remote sensing workshop. IAGT sponsored this workshop in October 2000 with NASA, and a diverse group of local, tribal, regional and state government officials benefited from participation.

**Figure 1-1: States Included in the IAGT Northeast Affiliates (NEAF)**



Based on needs expressed at the workshop, IAGT asked representatives of each of these 14 northeastern states to serve as IAGT “Northeast Affiliates” (NEAF) to advise and conduct activities with IAGT to help advance remote sensing applications in state and local governments. Recent programs with the 14 state Affiliates include:

- **State Remote Sensing Workshops** – IAGT helped sponsor one remote sensing workshop per state to provide an educational program for local, tribal, regional and state officials that would not have otherwise existed in the state.
- **Funding Assistance for Remote Sensing Applications** – IAGT sponsored one project per state to demonstrate a remote sensing project carried out in collaboration with at least one local government, having applicability to at least one designated NASA priority applications area, as shown in Figure 1-2.

- **Loan/Grant for Remote Sensing Data Acquisition** – IAGT sponsored one project per state with a loan/grant of imagery from Digital Globe to serve as a demonstration project to test state and local utility and interest in further use of such resources.
- **National Association of Counties (NACo) Partnership** – While not a direct Affiliates activity, this ongoing IAGT initiative provides a GIT staff presence and assistance to help NACo serve its membership and represent county needs to federal agencies, while helping state representatives work with their corresponding counties.

**Figure 1-2: IAGT Northeast Remote Sensing Application Projects**

<b>State</b>	<b>Lead Entity</b>	<b>Workshop Function</b>	<b>Project Subject</b>	<b>Partner(s)</b>	<b>NASA Application Area(s)</b>
Connecticut	University of Connecticut	Water and Other Natural Resources (WNR) Management	Invasive Species Monitoring	Municipal Government, Regional Council, State Government, Academia, NGO	National Invasive Species, Coastal Resource Management
Indiana	Indiana University Purdue University Indianapolis (IUPUI)	Water and Other Natural Resources (WNR) Management	Locating Underground Tile Drains	County Government	Agricultural Competitiveness, Community Growth, Public Health, Water Management and Conservation
Maine	Maine Office of GIS	Homeland Security and Disaster/ Emergency (HSDE) Management	Statewide Incident Management System (SWIMS)	Municipal Government, County Government, State Government	Disaster Preparedness, Homeland Security, Public Health
Massachusetts	Massachusetts Executive Office of Environmental Affairs	Planning and Community Growth (PCG) Management	Investigating the Utility of 3D Modeling for Planning	Regional Council	Community Growth
Michigan	Michigan Center for Geographic Information	Water and Other Natural Resources (WNR) Management	Identifying Failures in Residential Septic Systems	County Government	Community Growth, Public Health, Water Management and Conservation

Minnesota	Minnesota Land Management Information Center	Homeland Security and Disaster/ Emergency (HSDE) Management	Distributing Remote Sensing Data via the Web	Municipal Government, Regional Council, State Government	Disaster Preparedness, Homeland Security, Community Growth
New Hampshire	University of New Hampshire	Homeland Security and Disaster/ Emergency (HSDE) Management	Delineating Floodplains	County Government, State Government, Federal Government	Coastal Management, Community Growth, Disaster Management
New Jersey	New Jersey Office of GIS	Planning and Community Growth (PCG) Management	Facilitate Land Use and Economic Development Decisions	County Government	Community Growth
New York	L-3 Communications, Government Services (on behalf of the NYS CSIC)	Homeland Security and Disaster/ Emergency (HSDE) Management	Cross-border Land Cover Map	State Government, Federal Government, International	Homeland Security
Ohio	Ohio Office of Information Technology	Homeland Security and Disaster/ Emergency (HSDE) Management	Evaluate the use of Remote Sensing Data to Support Quality Control	County Government, State Government	Homeland Security, Coastal Management, Community Growth, Disaster Management
Pennsylvania	Pennsylvania Department of Conservation and Natural Resources	Water and Other Natural Resources (WNR) Management	Agricultural Monitoring at the Parcel Level	County Government Agriculture Extension Offices	Agricultural Competitiveness, Community Growth, Public Health, Water Management and Conservation
Rhode Island	Rhode Island Statewide Planning Program	Planning and Community Growth (PCG) Management	Measuring Impervious Surface Land Cover	State Government, Academia, NGO	Community Growth, Water Management and Conservation
Vermont	Vermont Center for Geographic Information	Water and Other Natural Resources (WNR) Management	Identification of Impervious Surfaces	Municipal Government, Regional Council, Academia	Community Growth, Water Management and Conservation

Wisconsin	Wisconsin Cartographer's Office	Planning and Community Growth (PCG) Management	Using Remote Sensing and Visualization Tools for Public Education	County Government, Academia	Coastal Management, Community Growth
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Crucially important to the Affiliates program is the continuity achieved through regular and consistent communications and support. In addition to IAGT staff contact for these programs, quarterly conference calls are held among the 14 state IAGT Affiliates, IAGT staff and selected federal agency representatives. These calls help to inform and engage each of the 14 states and ensure that issues are raised and addressed. In addition to providing linkages to IAGT, limited travel budgets mean that these calls provide unique opportunities for state officials to converse with each other and query headquarters representatives of federal agencies.

Dialogue during these calls and related discussions led state representatives to decide that remote sensing and GIT issues warranted attention in a new forum similar to the 2000 workshop. However, they concluded that the focus should be on new and broader challenges and opportunities, and with additional federal agencies. IAGT organized a workshop team and steering committee to investigate potential for a 2004 workshop.

**1.2 WORKSHOP PURPOSE AND GOALS: SHARPENING THE FOCUS**

GIT workshops, conferences and related events are held almost weekly in the United States. Many events provide useful GIT application examples, technical updates, and opportunities to gather input. Some provide lessons learned to improve interrelationships or “partnerships.” The committee desired to provide these learning opportunities, but also to more precisely address GIT conditions and concerns with a public management perspective. A particular focus was the growing interest in outreach strategies of federal agencies, particularly with local governments.

The leading workshop purpose became how to improve and maximize the outcomes of federal and other RS/GIT outreach strategies and programs for state, local and regional entities. To make a difference in this regard, it was decided the workshop could be used to uniquely inform, engage and garner input from a wide and unique collection of participants, specifically at local policy levels. The steering committee determined that a careful workshop design would ensure that several benefits could be realized simultaneously:

- Provide multi-jurisdictional networking and feedback opportunities;
- Enable federal officials to hear differing local, regional and state needs, experiences and perspectives;

- Determine key issues, principles, characteristics, components and other recommendations for federal and other RS/GIT outreach strategies and programs to assist local, regional and state entities; and
- Inform decision makers and technologists about the “why” and “how” of remote sensing from outreach experiences and successful applications elsewhere.

Federal GIT coordinators agreed the workshop would provide unique opportunities, benefits and outcomes. The U.S. Geological Survey (USGS) (including its Federal Geographic Data Committee (FGDC) staff and Geospatial One Stop (GOS) project staff) and the NOAA Coastal Services Center agreed to help IAGT fund the workshop. NASA, NACo, and the National States Geographic Information Council (NSGIC) also signed on as cosponsors, and representatives of each sponsor joined state representatives on the steering committee to help design and implement the workshop. The committee articulated the following workshop goals and issues to help understand these conditions and differing perspectives to attract interest, speakers and participants.

### **1.2.1 Enhance RS/GIT Outreach Strategies and Programs**

The committee pointed to several growing issues associated with the increasing attention and outreach of federal agencies to local, regional and state entities about GIT:

- Governing authorities, roles and responsibilities are increasingly multi-jurisdictional in the U.S., while many entities share complementary and, at times, conflicting roles based on varying interests and authorities.
- Societal issues and governing challenges are increasingly complex and interdependent, so mechanisms are needed to increase understanding, consensus and responsiveness to meet growing needs, as evidenced in federal workshop sponsorship and funding.
- The federal GIT community increasingly recognizes the importance of local governments in particular; and demand is growing for highly accurate data developed by and for the vast number and array of local governments in the U.S.
- Some federal and other GIT outreach strategies and programs seem incomplete and/or uncoordinated in practice; and too often, potential benefits do not seem fully realized – either across governments or through time.
- Federal officials need to learn more about differing municipal, county, regional and state interests, functions, roles, data, perspectives and needs to improve attention and responsiveness to them and help meet federal needs.
- These conditions necessitate broader and more extensive understanding, attention and action at all levels of government.

### **1.2.2 Emphasize Remote Sensing, but in the Context of other GIT Implementation**

At the same time, the committee agreed to maintain focus of the Northeast Affiliates programs on remote sensing to provide unique learning opportunities for participants because:

- RS may have unique and more complicated implementation issues than GIT, and adoption of newer capabilities is not as widespread in local, regional and state entities.
- While GIS and GPS advances in the marketplace have translated into greater ease of use and increased adoption, many RS resources, applications and benefits remain unclear and illusive at local, regional and state levels, despite rapid advances, increased options and reductions in costs.
- Imagery resources can be prohibitively complicated to state, local, and regional users, and particularly to high-level decision makers who must make corresponding decisions and resource commitments.
- Developing tools have the potential to help local, regional, and state entities address common issues and create multi-jurisdictional approaches to many governing needs.

### **1.2.3 Reveal More Extensive Institutional Complexities and Challenges in the Northeast**

As federal and state coordinators increasingly seek to understand GIT issues and needs at the local level, more extensive institutional issues that warrant attention are revealed in the Northeast than in other regions of the country:

- Governing and technology deployment is more complex in the Northeast due to the larger number of older, and often overlapping, jurisdictions, as well as population densities often intermingled with poor rural areas.
- More governments in the Northeast suffer from financial constraints and historical institutional complexities.
- Participation in many national GIT meetings is more limited from the Northeast than other regions of the U.S.
- Research reveals a lower level of RS and GIT adoption among northeastern localities.
- These conditions warrant focused attention to understanding issues and strengthening RS and GIT use and institutionalization in the region.

### **1.2.4 Provide Benefits for Individual Workshop Participants**

To meet these goals and help address corresponding issues, a carefully determined set of workshop attendees was needed, and required definitive benefits of attendance to encourage participation:

- Improve federal understanding of unique municipal, county, regional and state perspectives to enhance outreach programs for state, local and regional entities;
- Strengthen interaction among federal and other purveyors to widen the number of beneficiaries, enhance program delivery and improve overall program results;
- Complement federal RS/GIT updates with local, regional and state RS/GIT and other outreach experiences to advance coordinated approaches, and reveal key municipal, county, regional and state perspectives and lessons learned;
- Illuminate specific needs and issues, and priorities of each governing level to determine key recommendations for the design, development and implementation of federal and other RS/GIT outreach strategies and programs;
- Provide an alternative to the frequent under representation of local participants (“token locals”) at federal meetings and events, which often result in critical differences being blurred; and instead empower a critical mass of municipal, county, regional, and state peers to reveal common perspectives of each governing sector;
- Empower non-federal participants to serve as “ambassadors” to advance wise use of remote sensing and other GIT in their jurisdictions and to their neighbors;
- Create new and strengthen old relationships to help build long-term networking and collaboration among multiple jurisdictions in the Northeast; and
- Bring back knowledge, experiences and contacts that participants can use in their own organizations.

These goals and issues provided the foundation for the workshop steering committee and staff team to design a workshop and invitation approach to meet simultaneous needs.

### **1.3 REPORT SCOPE, METHODOLOGY AND CONTENTS**

This report has been prepared to inform sponsors and readers about the knowledge shared at the workshop. Summaries of presentations in plenary and breakout sessions are provided, as well as input provided by participants gathered through two separate sets of breakout sessions and submission of completed evaluation forms at the end of the workshop. This material is augmented by background information to help sponsors and readers better understand American government influences on GIT and corresponding outreach strategies, as well as a brief review of findings and

recommendations from other related materials in which similar issues have been addressed. In sum, this report documents the workshop findings, but also provides more information that federal and other GIT outreach providers can use in the design and implementation of outreach strategies and other intergovernmental efforts. The following seven chapters are described below.

Chapter 2 examines conditions in American government that define and influence public management, intergovernmental relations and outreach efforts concerning RS/GIT, GIT institutionalization direction at the federal and state levels, and past recommendations for improvements.

Chapter 3 outlines the design and approach of the workshop, including the participant selection process, specific agenda item objectives, and explanations of the individual breakout groups. Chapter 4 provides a review of all major presentations, including during plenary and breakout sessions.

Chapter 5 furnishes a synthesis of participant input based on unique experiences, backgrounds and perspectives. It includes both quantitative data and qualitative findings organized according to three governing functions chosen as critical subjects crossing all governing sectors, and five leading governing sectors in the nation, all represented at the workshop. Chapter 6 combines (1) a synthesis of workshop presentations as reviewed in Chapter 4; and (2) the input presented in Chapter 5 regardless of which breakout session was the source of the recommendation. The combined material in Chapter 6 is organized by key themes.

Chapter 7 brings forth the findings and analysis of information gathered from workshop participants as part of the evaluation process and final wrap up panel at the end of the workshop. This process collected data in a numeric rating scale manner, as well as in a question and answer format to allow attendees the flexibility to supply key feedback.

Chapter 8 provides a discussion on the conclusions and recommendations resulting from the workshop. Topics of this chapter include: Were the workshop goals met?; Summary of Input and Findings; Calls for Action; Overall GIT Outreach Vision and Principles; GIT Outreach Strategy Components; GIT Outreach Program Characteristics, Elements and Resources; Other Key GIT Priorities to Aid Outreach; Lessons Learned and Suggestions for Future Workshops.

## **2 CHAPTER 2. BACKGROUND AND CONTEXT**

The goals and issues addressed by the workshop clearly require thorough understanding of American government, especially the authority, structure and functionality of local governments. These conditions have a direct impact on GIT outreach issues and needs, particularly from a public policy and management perspective. Knowledge about these conditions was used to help design the workshop approach, program and participant profile as described in Chapter 3. Another important issue concerning GIT outreach is the corresponding need for GIT institutionalization across all governments, and particularly the authorization to carry out such initiatives. Attention to this matter and related intergovernmental issues has been a repeated subject of research and gatherings over time. Review of current conditions concerning American government, authorization of GIT institutionalization and some key findings and recommendations of others provide context to help the reader interpret the findings of the workshop.

### **2.1 FEDERALISM IMPACTS ON GIT**

Although the United States Constitution was written at a time when computers and information technology were yet to be imagined, its consequences guide intergovernmental relations and outreach activities. The U.S. government is characterized by two sets of checks and balances. The Constitution spells out that the federal government has legislative, executive, and judicial branches, and that they share authority horizontally. At the same time, authority also is shared in a vertical dimension, in which state governments have specific powers and share in the balance of roles in relation to the federal government, known as “federalism.” This “federal system,” with shared authority between the states and the federal government, is in contrast to a “unitary system,” whereby a nation’s central government has authority over sub-national governments.

The constitution outlines that both the states and the federal government have law making authority, but how local governments are established and administered was left to the states. Early state constitutions generally created local government as an arm of the state, bound to carry out the tasks and programs specified by state laws. More recently, local governments have received much greater autonomy from the states, giving them greater flexibility in the development of policies and services that shape their communities.

The increasing importance of federalism is evidenced in many ways. Federal authority has been devolving to states and localities in many areas of public policy since the 1970s. At the same time, state and local governments protest against federal pre-emptions, regulations and “unfunded mandates,” especially since federal grant funding has diminished in recent decades. Tensions also exist in relationships between states and local governments because localities derive their authority from states.

Each level of government has differing interests, roles, authorities and constituencies. In practice, division of governing roles and responsibilities can be very unclear. Numerous government actors can address related issues, each with their own unique approaches, directives and programs. These efforts can be complementary, or may be duplicative or conflicting. As a result, authorities, roles and solutions are increasingly complex, interdependent and multi-jurisdictional in the U.S. As societal and governing challenges become more extensive and complex, federalism factors continue to have direct influence on the development of government approaches to address growing needs.

Federalism is a key factor in the institutionalization and coordination of data and GIT. GIT poses yet another challenging function that requires governments to work together to govern more effectively. However, at the same time, GIT advances provide unprecedented modernizing approaches, resources and tools to help address these pervasive challenges in and among governments.

## **2.2 UNDERSTANDING LOCAL GOVERNMENTS**

American local government arrangements are arguably the most complex in the world. Over 87,000 individual local units exist, and they vary greatly in terms of size and activity. Moreover, their authority, roles and responsibilities differ considerably by state. An official census of governments is conducted by the U.S. Census Bureau at five year intervals. As shown in Figure 2-1, the United States had 87,525 units of local government in 2002, categorized into five forms, including counties, municipalities, townships, special districts and school districts (U.S. Census Bureau 2002). General purpose local governments include counties, townships and municipalities. The total number of these governments has remained almost constant for decades, though the number of municipal governments increased by over 550 in the 25 year period since 1977.

Several characteristics of local government jurisdictions help to understand GIT institutionalization and coordination. Local government incidence, functions, roles and responsibilities vary significantly by state and region, with all local governments having important data and GIT roles and activities. For example, townships only exist in some states, but they may have important data roles, such as property records management and assessment. The roles of a county in one state can be those of a township or municipality elsewhere. American and local government structure, level of professionalism, revenue generation capability, and additional factors across the broad range of jurisdictional types also have direct influence on GIT adoption, applications, institutionalization, financing, and ultimately on outcomes (Warnecke et.al. 1998, Haithcoat et.al. 2001). These conditions are critical factors for GIT outreach providers to understand in order to design and implement appropriate approaches.

**Figure 2-1: Local Governments in the Northeast**

Geographic area	Total	General purpose			Special Purpose	
		County <sup>1</sup>	Subcounty		Special Districts	School Districts
			Municipal	Town or Townships		
<b>United States</b>	<b>87,525</b>	<b>3,034</b>	<b>19,429</b>	<b>16,504</b>	<b>35,052</b>	<b>13,506</b>
<i>Northeastern 14 States</i>	<i>29,575</i>	<i>610</i>	<i>5,604</i>	<i>10,744</i>	<i>7,889</i>	<i>4,728</i>
Connecticut	580	-	30	149	384	17
Indiana	3,085	91	567	1,008	1,125	294
Maine	826	16	22	467	222	99
Massachusetts	841	5	45	306	403	82
Michigan	2,804	83	533	1,242	366	580
Minnesota	3,482	87	854	1,793	403	345
New Hampshire	559	10	13	221	148	167
New Jersey	1,412	21	324	242	276	549
New York	3,420	57	616	929	1,135	683
Ohio	3,636	88	942	1,308	631	667
Pennsylvania	5,031	66	1,018	1,546	1,885	516
Rhode Island	118	-	8	31	75	4
Vermont	733	14	47	237	152	283
Wisconsin	3,048	72	585	1,265	684	442

<sup>1</sup> Excludes areas corresponding to counties but having no organized governments

Modified from U.S. Census Bureau, 2002 Census of Governments, Volume 1, Number 1, Government Organization, GC02(1)-1, U.S. Government Printing Office, Washington, D.C. 2002.

Specific sectors were determined for the workshop to classify and provide meetings of participants from similar governmental entities. This was done to best obtain input from peers representing the same types of governments. Given the number of workshop participants and other factors, it was not feasible or productive to have five separate sectors of local government. Accordingly, two local government sectors were designated: “county” and “municipal” as described below. However, outreach providers need to understand the differences and roles of the five forms of local government in America. By definition, each of the five local government forms has authority, provides important roles, and applies resources to meet their missions. There are numerous examples of how all five types of government can and do make use of GIT.

Special districts were not addressed at the workshop, nor were they included in one of the designated local government sectors. Almost 50,000 of the nation’s local governments exist to operate schools (13,506) or are classified as special districts (35,052). These independent entities have substantial administrative and fiscal independence from general purpose local governments discussed below, though they

may operate for the same geographic area or a part thereof. More special districts have been created in recent history than any other form of local government, with over 2000 established in the ten years between 1992 and 2002. Over 90% of the special districts perform a single function. Natural resources, such as drainage and flood control, irrigation, and soil and water conservation, are performed by more than 36% of the districts. The next most common function is fire protection, followed by housing and community development, with several others having water, sewerage, cemetery, parks and recreation, library, hospital, and other functions.

### **2.2.1 Unique Local Government Conditions in the Northeast**

Local government structures, roles, responsibilities and relationships are especially complex in the Northeast, helping justify specific workshop focus on this region. This complexity can be traced to early settlement patterns. Settlers in New England found the conditions less spacious and the climate much rougher than did their southern peers. This forced people to build homes closer together, and localities even established local laws requiring that residents be located no more than a mile from a village center.

Consequently, villages, towns, and cities emerged in much of the Northeast as more important units of government than counties. In fact, as discussed below, the township form of local government did not become popular, nor does it exist today, beyond 20 states in the Northeast and Midwest. New England states that did create counties were structured similarly to those in the southern region in terms of county officials; but most of the functional tasks were assumed by city and town governments. New York (and several other northeastern states) developed a hybrid approach to governance structure whereby town supervisors were automatically members of the county governing body (Byers 2004). The more complex local government structures, roles, responsibilities and relationships across the Northeast translate into several challenges affecting many specific local programs, data development and management, and GIT coordination within and among governments.

### **2.2.2 County Governments**

Organized county governments are found throughout the U.S. except for Connecticut, Rhode Island, the District of Columbia, and limited portions of other states where certain county areas lack a distinct county government. For example, counties exist in the other New England states, but have limited functional roles. Counties were originally granted their authority from and serve as political subdivisions of state governments. Accordingly, they are known as "parishes" in Louisiana and "boroughs" in Alaska.

The U.S. had 3034 distinct county governments in 2002, with over 70% serving fewer than 50,000 residents. Counties can have less than 1000 residents as in the West, or more than 9.5 million as in Los Angeles County. However, 201 county governments have at least 250,000 residents. The number of counties per state ranges from 254 in

Texas down to less than 20 in several states. Not all governmental areas known as counties have county governments, and more than 10% of the nation's population is not served by a county government. This situation exists because some county and municipal governments have merged, as in several large urban areas such as New York City and Philadelphia. In these cases, the composite units are typically considered statistically as municipal governments. Most counties serve relatively few people but have jurisdiction over large land masses.

County governments are considered to be very important regarding data because they often are legally responsible for land information, for property tax administration and land ownership or title recordation. Counties also perform other important functions that make use of GIT, such as highway management, land use planning, public safety, and social services functions. Some counties also are responsible for various types of water management, landfills, libraries, fire protection, airports and other facilities. Counties also may provide what are commonly municipal services.

As shown in Figure 2-2, many county governments are characterized by a predominance of elected officials for departments responsible for single functions. These officials exist in addition to county governing boards, which provide oversight over multiple functions, budgets, administrative functions, etc. State directives and local conditions can mean that different elected or appointed officials might be responsible for data used with GIT, such as assessors, appraisers, clerks, recorders, and registrars or registers of deeds. For example, a recent survey found that 86.9% of the nation's county recorders are elected, and 56% of the county assessors are elected (International City/County Management Association, 2002).

Local offices also can have differing names, roles and duties, and they might be at the county, and/or the town or township level. Misunderstandings and confusion can result even among neighboring governments. For example, the work of a county engineer might be that of a county surveyor or public works director in another county. Assessors may exist at the county or town level. This complexity, and particularly the multitude of elected officials in one government, can complicate governing in many ways, and can impact data and GIT applications. Inter-jurisdictional relationships and coordinating efforts are unique and often challenging based on individual conditions. However, coordination is always necessary within and among local governments because they have jurisdiction over small and sometimes overlapping geographic areas, Coordination is becoming even more important with time, as more and more governing challenges cross jurisdictional boundaries.

**Figure 2-2: Local Elected Officials (in Addition to Governing Bodies)**

State	County Elected Officials	Municipal and Township Elected Officials
Connecticut	N/A*	Assessor (D), Police Commissioners, Economic Development Commissioners (D), Inland Wetland and Watercourse Commission (D), Planning and Zoning Commissioners (D), Zoning Board of Appeals (D), Clerk, Treasurer, Collector of Taxes
Indiana	Clerk, Auditor, Treasurer, Sheriff, Assessor, Recorder, Surveyor, Engineer	Clerk, Clerk-Treasurer
Maine	Treasurer, Sheriff, Register of Deeds	Assessor
Massachusetts	Treasurer, Sheriff, Register of Deeds	Sheriff, Register of Deeds, Clerk, Assessor (D), Assistant Assessor (D), Auditor (D), Board of Public Works (D), Collector of Taxes (D), Treasurer (D), Tree Warden (D), Water Commissioners (D), Highway Surveyor (D), Road Commissioner (D), Park Commission (D), Planning Board (D), Sewer Commissioner (D)
Michigan	Clerk, Treasurer, Sheriff, Register of Deeds, Drain Commissioner, Board of Road Commissioners (D)	Treasurer, Clerk, Assessor, Park Commissioners
Minnesota	Auditor, Treasurer, Sheriff, Recorder, Surveyor (D)	Clerk, Treasurer
New Hampshire	Treasurer, Sheriff, Register of Deeds	Water Commissioners (D), Board of Assessors, Board of Auditors, Land Use Planning Board (D), Sewer Commissioners, Collector of Taxes, Clerk, Highway Agent (D)
New Jersey	Clerk, Sheriff, Register of Deeds	
New York	Clerk (D), Treasurer (D), Sheriff (D), Register of Deeds (D)	Assessor, Receiver of Taxes and Assessments (D), Superintendent of Highways (D), Tax Collector (D),
Ohio	Auditor, Treasurer, Sheriff, Recorder, Engineer	Auditor, Treasurer, Clerk

Pennsylvania	Auditor, Treasurer, Sheriff, Register of Deeds, Recorder	Assessor, Treasurer, Auditor (D), Assistant Assessor, Tax Collector
Rhode Island	N/A*	Assessor, Clerk, Treasurer
Vermont	Clerk, Auditor, Treasurer, Sheriff	Chief Engineer, Clerk, Collector of Taxes, Treasurer, Tree Warden, Auditor, Road Commissioners (D), Water Commissioners (D)
Wisconsin	Clerk, Treasurer, Sheriff, Register of Deeds, Surveyor (D)	Assessor, Clerk, Treasurer

(D) = Discretionary, Appointed or Elected

\* = Connecticut and Rhode Island are divided into geographic regions known as counties, but they do not have functioning governments, as defined by the Census Bureau.

Sources:

Crayton, Christina, "Elected or Appointed County Officials? Who's Really on the ROW!," (Washington, D.C.: National Association of Counties, 2004).

U.S. Department of Commerce. "Census of Governments." Volume 1 Government Organization, Number 2 Popularly Elected Officials. 1995.

[http://www.census.gov/prod/2/gov/gc/gc92\\_1\\_2.pdf](http://www.census.gov/prod/2/gov/gc/gc92_1_2.pdf) (18 March 2005).

### **2.2.3 Municipal and Township Governments**

Municipalities are the other leading form of general purpose local government, with almost 20,000 located throughout the nation. Municipalities can include units officially designated as cities, boroughs (except in Alaska), towns (except as noted below) and villages. While population size generally determines whether a municipality is a city as compared to a town or village, this determination is also a function of its organization as legally defined by individual states. Almost half of all Americans reside in approximately 200 cities with more than 100,000 inhabitants. Of the remaining municipalities, more than 2000 serve between 10,000 and 100,000 people, and over 16,000 jurisdictions serve fewer than 10,000 inhabitants.

An additional 16,504 township (including town) governments exist, as also shown in Figure 2-1. Municipalities and townships differ primarily according to the historical situations that existed at the time they were incorporated. The township form of government as defined by the Census Bureau only exists in 20 states, with all located in the Northeast and Midwest. Towns in other states are considered to be municipalities. Many townships essentially serve as political subdivisions of counties similar to how counties are subdivisions of states, but they do not cover the entire area of these states except in Indiana. In the other 19 states townships only exist in some counties, though in the Northeast they exist in the vast majority of each state's area. In 11 states, the area

served by municipal and township governments overlap, and thus citizens receive services and pay taxes to three levels of government at the county level or smaller, in addition to school districts and perhaps special districts.

Together, municipalities and townships provide many of the services received by the public, and usually have the strongest involvement with citizens. They are distinct from counties in that a municipal corporation has been established to provide local government for a specific geographic area. According to the Census Bureau, municipalities and townships perform similar functions with similar authorities, particularly in the Northeast. Municipalities most commonly provide water and wastewater utilities (some operate other utilities such as electric), fire protection, public works, planning, and other urban services, with larger jurisdictions generally providing multiple services. Townships range widely in the scope of their governmental powers and functions, with some of them having similar roles as municipalities—particularly in New England. Township functions may also include those similar to counties elsewhere, such as fire protection, landfills, libraries, and water and sewerage services.

All of the 14 Northeast Affiliate states have the town or township form of government in addition to municipalities. Only six of the remaining 34 other states do so. The existence of townships as an additional level of local government provides a key example of how governing is more complicated in the Northeast. This is one of the reasons for the workshop focus on this region of the country. However, the designated number of invited participants and workshop logistics required the designation of only two local sectors. Accordingly, two sectors, “county” and “municipal,” were determined to classify and understand the differing perspectives of local government participants. Townships, towns and municipalities have similar functions, as determined by the Census Bureau. Accordingly, the workshop’s “municipal” sector was defined to include townships and towns.

#### **2.2.4 Local Government Autonomy and Authority**

The large number and vast differences in American local governments complicate understanding of local data and GIT roles and activities. Conditions vary considerably by state, but also within individual states. Most important when comparing all governing levels and their data needs and GIT applications is that localities are responsible for a broader array of governing functions than state and federal governments. Accordingly, they have a wider range of GIT applications, and often have a wider variety and more detailed data needs than other governments.

A continuing issue that also impacts data and GIT institutionalization is the autonomy and authority that local governments have to act. Their authority and powers are technically derived from states through federalism. Results of a recent survey were that over 80% of the nation’s counties have their structure or form of government established by state law rather than by local action, such as a charter, local ordinance or council resolution (International City/County Management Association 2002).

Tensions have existed between state and local governments in regard to local autonomy for over a century. In general, local autonomy and authority have increased over time, but actual conditions still vary by state. In 1886, Iowa Supreme Court Judge John F. Dillon helped settle these tensions that continue today about how state and local governments determine authority and provide public services. His ruling (dubbed “Dillon’s Rule”) occurred when the nation was at a crossroads in terms of local autonomy and state supremacy. Many citizens distrusted local government due to the power and corruption of political machines. Alternatively, others called for an increase in state constitutional rights for local governments. Dillon settled the matter by ruling that local governments had only those powers specifically given to them by state constitution or legislative statute.

“Dillon’s Rule,” however, did not ring true for Californians at the turn of the twentieth century. They believed that it was state governments that were being controlled by special interest political machines. Lack of trust in the state’s ability to be responsive to the needs of local governments spurred the idea of “Home Rule,” or local self-government. Enactment of Home Rule in California paved the way for 36 additional states to approve some form of Home Rule government, whether via a charter or the “optional” form of Home Rule (Coester 2004). Following this precedent, the influence of Dillon’s Law has decreased over time in most states. Today, Dillon’s Rule and Home Rule influences continue to co-exist in most states. Balance between the two forces varies from state to state.

Figure 2-3 includes a summary of the Home Rule status for each of the 14 Northeastern states participating in the workshop. The difference between the two forms of Home Rule: charter and “optional,” also is critical to understand the amount of local autonomy a local jurisdiction holds. The charter form of government calls for the creation of a local “constitution” that is developed and ratified locally by the voters. Charter governments have greater power over fiscal, functional, and structural components of their system. The “optional” form of home rule allows the local electorate to select the type of governmental structure it will utilize from a presubscribed set of options.

Differing local government structure, autonomy and authority have direct impacts on roles, responsibilities and functionality. For example, Figure 2-4 shows the type of local government jurisdictions that exist in each of the Northeastern states represented at the workshop. It also reveals which jurisdictions have leading roles for four local government functions that often make use of GIT. This figure illustrates that learning about states on an individual basis is important to ensure that the proper local jurisdictions are engaged. For example, developing a “one size fits all” outreach strategy that calls for working with county land records departments will not be effective in states such as Connecticut and Maine where counties do not perform this function.

**Figure 2-3: Source of Local Government Authority and Home Rule Status in the Northeast**

State	Dillon's Law	Home Rule Status
Connecticut	Yes	Optional Form
Indiana	Yes* (Applies to Townships Only)	Optional Form
Maine	Yes	Charter Form
Massachusetts	No	Charter Form
Michigan	Yes	Charter Form
Minnesota	Yes	Charter and Optional Form
New Hampshire	Yes	None
New Jersey	No	Charter Form
New York	Yes	Charter Form
Ohio	No	Charter Form
Pennsylvania	Yes	Charter Form
Rhode Island	Yes	Limited
Vermont	Yes	None
Wisconsin	Yes	Optional Form

Source:

Coester, Adam, "Dillon's Rule or Not?" (Washington, D.C.: National Association of Counties, 2004).

**Figure 2-4: Local Government Structure and Responsibilities in the Northeast**

State	Local Government Jurisdictions in State	Lead Jurisdiction(s) with Primary Local Responsibility			
		Assessment and Land Records Information	Highway Management	Land Use	Emergency Management
Connecticut	Town, Borough, City	Municipal	Municipal	Municipal	Municipal
Indiana	Town, City, Township, County	County	Municipal, County	Municipal, County	County
Maine	Town, City, County <sup>1</sup>	Municipal	Municipal, County	Municipal	County
Massachusetts	Town, City, County <sup>2</sup>	Municipal	Municipal	Municipal	Municipal, County
Michigan	Village, City, Township, County	County	Municipal, County	Municipal	County
Minnesota	City, Township, County	County	Municipal, County	Municipal, County	County

New Hampshire	Town, City, County <sup>3</sup>	Municipal	Municipal	Municipal	Municipal
New Jersey	Village, Town, Borough, City, Township, County	Municipal, County	Municipal, County	Municipal, County	Municipal, County
New York	Village, Town, City, County	Municipal, County	Municipal, County	Municipal, County	County
Ohio	Village, City, Township, County	County	Municipal, County	Municipal, County	County, Regional
Pennsylvania	Town <sup>4</sup> , Borough, City, Township, County	Municipal, County	Municipal	Municipal, County	County
Rhode Island	Town, City	Municipal	Municipal	Municipal	Municipal
Vermont	Village, Town, City, County <sup>5</sup>	Municipal	Municipal	Municipal	Municipal
Wisconsin	Village, Town, City, County	County	County	Municipal, County	County

<sup>1</sup>The Counties are responsible for only limited functions in Maine: principally the maintenance of the courthouse and county jail, maintenance of the roads in unorganized territory, and a few police functions. Most local government services are performed by towns and cities.

<sup>2</sup>Currently there are only seven functioning county governments in Massachusetts.

<sup>3</sup>New Hampshire county governments have relatively few responsibilities. Towns and cities perform most of the functions of local government.

<sup>4</sup>The Town of Bloomsburg is the only incorporated town in Pennsylvania.

<sup>5</sup>Vermont county governments perform limited functions, which consist chiefly of maintaining the courthouse and county jail.

## **2.2.5 Regional Councils**

Regional council is the generic term used by the National Association of Regional Councils (NARC) to denote councils of government, planning commissions, and development districts, which may be called by a variety of names. Regional councils are public entities established by two or more independent local governments, under state enabling legislation, to plan, coordinate and/or deliver services on behalf of their states and their local government members. In most states, boundaries of regional councils have been determined by the state, based on similarities among local governments, the presence of a "growth center" and a population mass to support the council. In other states, regional councils are formed through interlocal agreements. Most regional councils have been in existence since the mid-1960s, although some were formed in the mid-40s and early 50s.

Almost all regional councils are not in themselves "governments" like the entities described above. However, they conduct public functions and are governed via boards

comprised of municipal and county leaders representing their jurisdictions. As such, local leaders direct the long term agenda of their corresponding regional council. The relative strength of regional councils compared to the localities within them varies considerably across the country. Some regional councils have authorized governing roles and corresponding revenue generation capability. Portland Metro in Oregon and the Twin Cities Metropolitan Council in Minnesota are leading examples of the country's strong regional councils. While the term "regional government" is not appropriate generally across the country and only is applicable in a few cases, lack of understanding about regional councils is widespread and often causes use of inaccurate terminology.

Another example of local governments working together within an institutionalized regional framework is the existence of Metropolitan Planning Organizations (MPOs). The federal government requires the establishment of MPOs to conduct transportation planning, but it is up to state and local governments to determine whether the MPO function is housed with a regional council. About half of the nation's regional councils also serve as MPOs.

Examples of how regional councils are active in governance are described below. Federal environmental programs are generally conducted with states, including block grants. States may pass through water quality planning money to regional councils, and may designate regional councils as Clean Air Agencies.

An area in which regional councils are significantly active is economic development. The federal government designates them as economic development districts through the Department of Commerce's Economic Development Administration. The states do not make such determinations. The Appalachian Redevelopment Act requires multi-jurisdictional approaches to redevelopment. States and local governments are directed to determine what entity should be the local development district for these programs. Regional councils have been designated to have this role in every case. The Delta Regional Authority legislation actually requires the use of designated economic development districts as program delivery mechanisms.

Social services are another governing function with regional activity. For example, the Older Americans Act requires that smaller jurisdictions combine to provide aging services. The state, with the concurrence of affected local jurisdictions, may decide that a regional council will house the Area Agency on Aging. The Workforce Investment Act (WIA) is a block grant back to states, but requires that any municipality of 250,000 or more be a workforce investment area. However, in smaller communities, the law requires a regional approach. Regional councils are often designated to serve in this role, though sometimes states set up separate WIA regions, as in New England. Some regional councils are also designated as Community Action Agencies, but this is more a state designation than a federal one.

Most other functions that regional councils provide have been determined by states, or locally by local government members. Provision of assistance to localities is a common function of regional councils. Some councils have been designated by their states to have active roles regarding GIT, particularly to provide assistance and/or data development or management. Regional councils also have facilitated GIT coordination among participating localities, sometimes empowered and assisted by states.

### **2.2.6 Impacts on Local Functionality and Data**

Localities, like all governments, develop data and apply GIT to meet their governing roles, responsibilities and functional requirements. However, American government arrangements mean that local functions are not necessarily performed by similar jurisdictions. In some cases public functions, such as utilities, are performed by the private sector, while in other cases these functions are performed by governments. Recognition of these conditions is important when designing and implementing outreach strategies.

Varying local government conditions directly impact data development and management. A plethora of independent, inconsistent and uncoordinated data activities and resources may exist at the local level as at other governing levels in America. Resulting data redundancy and conflict can exist when governments have similar missions and overlapping jurisdictions.

To help, some local governments or regional councils have evolved or have been designated by states to serve as GIT coordinators and/or data custodians. Coordination approaches and data activities and responsibilities differ widely. For example, Massachusetts is a New England state that relies heavily on municipal government to carry out functional roles and responsibilities that are administered by county government in many other states. Figure 2-5 illustrates the direct effect of this government structure on what data are developed and how GIT is implemented and managed. This sample region is comprised of 15 local governments in northeast Massachusetts. They are linked together by a regional council (Merrimack Valley Planning Commission) that provides professional planning services. Each locality in the region elects a commissioner and one alternate to represent their interests at monthly board meetings. These meetings serve as a forum to discuss project plans and results related to assistance activities in transportation, environmental, economic development planning, and GIS. Through this collaborative forum, the regional council has emerged as the primary data custodian for the region.

**Figure 2-5: Example Data Activities in a State with Regional Councils Active in GIT: Merrimack Valley Planning Commission, Massachusetts**

Substate Areas		Number of Localities and Regional Councils with Identified Data Layers							
Type	#	Aerial Imagery	Parcel Centroids	Roads	Utilities	Demographics	Natural Resources	Open Space	Build-Out
Cities/Towns	15	4	Not Known	0	5	5	5	5	2
Special Districts	3	0	0	0	0	2	0	0	0
Counties	0	----	----	----	----	----	----	----	----
Regional Councils	1	15	12	15	13	15	15	15	15

Source: Gaylord Burke, Executive Director, Merrimack Valley Planning Commission, Massachusetts

In contrast, Pennsylvania relies heavily on county government to carry out functional roles and responsibilities required by state law. Consequently, the counties may be the leading data custodians. Figure 2-6 depicts specific data layer availability for three sample counties in Pennsylvania. Both examples reveal the rich array of data at the local level that could potentially be shared to help meet missions at other levels of government, and for which these agencies might be willing to help share costs to ensure data reliability to help meet these additional needs. These factors provide impetus for enhanced intergovernmental collaboration to perform governing functions more effectively and efficiently.

**Figure 2-6: Example Data Activities in a State with Counties Active in GIT: Three Counties in Pennsylvania**

County	Aerial Imagery	Parcels	Roads	Buildings	Land Use	Zoning	911 Service Areas
Lycoming	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Tioga	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Mifflin	Yes	Yes	Yes	Partial	Partial	Yes	Yes

Source: Pennsylvania Geological Survey, 2004. County Geographic Information Systems (GIS) Survey, Middletown, Pennsylvania: Pennsylvania Geological Survey.

### 2.3 STATE AND FEDERAL GOVERNMENTS

State and federal governments in many respects have similar functions to each other in terms of civilian government, and have more in common in terms of functionality than

states have with local governments. Federalism guides these interrelationships as described above, and states have historically had their own authorities in many regards. However, the importance of states relative to the federal government is increasing due to federal devolution and decentralization.

Federal authority has been devolving to states and localities in many areas of public policy since the 1970s, resulting in shared implementation of many federal programs. Some federal legislation, such as for environmental regulation, does set minimum national standards and objectives. These laws provide for states to have greater roles, responsibilities and discretion in designing and implementing their own laws and programs. In other cases, states serve as “arms” of the federal government because legislation finances state programs where federal jurisdiction is limited, such as forestry programs on private lands. In addition, states also are taking their own initiatives to develop programs without federal counterparts.

Changes in the relationships between states and their local governments as described above are also increasing the role of states in the nation’s governance. Direct federal relations with local programs are diminishing in several areas, and states are replacing federal agencies in providing local programs in some governing areas.

## **2.4 AUTHORIZING DIRECTION FOR GIT INSTITUTIONALIZATION**

Authorizing direction is a leading component of GI/GIT institutionalization at all levels of government, and also has a direct impact on GIT outreach. A brief summary of federal and state GIT direction is provided. Unfortunately, there is little omnibus knowledge about local governments’ GIT directives, though examples are available of localities adopting ordinances and/or resolutions as GIT policy instruments.

### **2.4.1 Federal Government**

The primary authorization for GIT coordination today is by the Office of Management and Budget through Circular A-16, which has been updated periodically over recent decades. Executive Order #12906, signed by President Clinton in 1994, urged the federal government to seek innovative ways to build a National Spatial Data Infrastructure (NSDI), including technology, policies, standards and human resources necessary to acquire, process, distribute and improve utilization of GI (Clinton 1994). However, the relevance of the order is diminished given a new administration.

Several limitations have been identified because national direction for GIT and related data is not via a stronger authorization such as Congressional action. (For reference, see: *Geographic Information for the 21<sup>st</sup> Century: Building a Strategy for the Nation* [National Academy of Public Administration 1998], and *Toward a Coordinated Spatial Data Infrastructure for the Nation* [National Research Council 1993]).

The Federal Geographic Data Committee (FGDC) has welcomed representatives of state and local governments to participate as ex officio members. However, the Committee primarily remains federal in terms of direction and membership. While over a dozen federal agencies have participated in FGDC for several years, multiple governments and agencies continue to develop and maintain data for the same geographic areas to meet individual mission requirements. These federal directives lack sufficient strength and “teeth” to alter internal federal agency conditions to meet stated goals, and, in particular, to maximize connectivity with state and local governments. Moreover, additional federal direction and groups address remote sensing and the Global Positioning System (GPS). Accordingly, more than three separate federal policy approaches to GIT exist, and there is no overarching legislative or executive direction, though the fact these technologies are increasingly used together poses new challenges and opportunities.

Federal legislation was recommended in the Academy to establish a national approach and institutional infrastructure in order to more effectively lead and coordinate GIT direction and activities. Legislative action was also recommended to move from voluntary federal agency participation to achieve greater connectivity, measurable results and accountability, while enabling federal agencies to better synchronize goals, approaches, performance measures, budgets and data development and maintenance plans with each other, states, localities and others. Consolidation of federal GIT programs also was recommended. Many of the study’s recommendations have not been followed.

#### **2.4.2 State Government**

Some state governments have enacted authorizing direction for GIT that is stronger than the federal government. This direction is typically provided through Gubernatorial Executive Order, similar to that signed by President Clinton, or more forcefully, by a state’s legislature. The statement of a high-ranking official, or a memoranda of understanding or agreement signed by agency leaders also have established GIT direction in some states; and multiple directives may direct or influence data and GIT.

Statewide GIT authorizing directives today provide official sanction for coordination among state agencies, but also in some cases include external organizations, such as local governments, federal agencies, utilities, academia, the non profit and/or private sector. These directives commonly authorize or recognize establishment of GIT and related data coordination groups, while some of them also authorize and fund related offices and/or roles. Other state directives may uniquely provide assistance to local and regional organizations and authorize GIT use for specific missions such as water or natural resources management, environmental protection, growth management, or most recently, homeland security. Funding for coordinated statewide GIT initiatives seems to be increasing over time to help implement such direction.

The majority of the 50 states have some type of direction to facilitate or encourage statewide GIT coordination among state agencies and others. However, less than half of the states have enacted specific, comprehensive legislation in this regard—particularly legislation authorizing funding (since direction by executive order typically does not provide for new funding). Moreover, few directives fully institutionalize GIT within government, such as by requiring compatibility or sharing of state-funded data among agencies; by establishing agency oversight through strategic planning or budgeting approaches to ensure compliance with direction; or by directing the private sector or others to provide compatible data to use in permitted or regulated actions. There seems to be some increase in the enactment of direction that provides for such planning and management oversight of GIT activities, particularly as synchronized with other forms of information technology, but this phenomenon has not been well documented to date.

## **2.5 KEY FINDINGS AND RECOMMENDATIONS BY OTHERS ABOUT RS/GIT OUTREACH**

GIT outreach in particular has not been addressed in many evaluations of nationwide conditions concerning GIT. Several studies have encouraged further coordination and cooperation among federal agencies and state and local governments, but they have limited analysis or specificity in terms of findings or recommendations concerning outreach.

Two frequently quoted documents are the *Geographic Information for the 21<sup>st</sup> Century: Building a Strategy for the Nation* (National Academy of Public Administration 1998) and *Toward a Coordinated Spatial Data Infrastructure for the Nation* (National Research Council 1993) as mentioned above. Both recommended improvements to overall coordination of GIT in the federal government, and with states and localities, but recommendations were limited about specific outreach efforts. For example, related recommendations in the Academy report included: “(e)ncourage development of a strategy for all states to have greater commonality of GI capacity and infrastructure” and “Federal agencies should lead and encourage other levels of government to be involved in remote sensing activities through example and partnering.” However, these and earlier related reports such as *Need for a Multipurpose Cadastre* (National Research Council 1980) have provided important insight and advances in terms of findings and recommendations relevant to outreach.

Analyses of governing missions also provide useful recommendations. For example, the Academy more recently suggested that Federal fire policy leaders should “replace the existing ad hoc approach to technology transfer with a professional interagency unit” to get the outcomes of research and development efforts “into the field more quickly, systematically and efficiently,” including the development of “technology transfer and education professionals” (National Academy of Public Administration 2002). This specificity in terms of outreach approaches concerning technology more broadly is also useful.

The National Research Council also has conducted investigations about remote sensing adoption that are helpful. For example, the large gap between research and widespread usage is particularly evident in remote sensing. Efforts are needed to both "push" (research capabilities) and "pull" (operational needs) for technology transfer to be successful (2003). Another related Council study found that "(a)cquisition of data is merely the first step in developing successful applications of remote sensing" and "the cost of a remote sensing information product begins rather than ends with the cost of the data." While obvious to some, this is an important conclusion from a public management perspective that can translate directly to outreach strategies. In the same study it was observed, "(t)he lack of communication among remote sensing specialists, data users, and potential information consumers is one of the greatest barriers to expanding the use of remote sensing data." This conclusion too, provides insight as to problems that can be addressed with effective design and implementation of outreach strategies.

### **3 CHAPTER 3. WORKSHOP APPROACH AND DESIGN**

The goals and issues outlined in Chapter 1 and conditions described in Chapter 2 provided the rationale and direction for the workshop approach and design. The planning and organization of the workshop was aided by the fact that IAGT had organized a successful state and local workshop for the same 14 northeastern states in October 2000. As a result, several state representatives and staff had experience with designing and hosting a similar event to inform, engage and solicit input from participants. NASA primarily defined the former workshop approach and program. However, this time, IAGT and its 14 state representatives, known as IAGT Northeast Affiliates (NEAF), decided independently to hold the workshop. As a result, organizers had more flexibility in the workshop program and participant design. Additional federal agencies also expressed willingness to actively support and help fund the workshop.

#### **3.1 WORKSHOP PLANNING AND DESCRIPTION**

Several state and federal representatives volunteered to serve on the Workshop steering committee to help ensure that multiple interests would be balanced. The final workshop design provided a forum for discussion between representatives of municipal, county, regional, state, and federal government sectors, and helped enhance interrelationships among various levels of government, with the long term effect of strengthening outcomes and benefits of RS/GIT outreach programs.

The committee met regularly by teleconference, phone and email over the months prior to the workshop to provide guidance and review workshop plans. IAGT offered to host the workshop and had lead administrative and funding responsibility to ensure its success. Favorable feedback about the 2000 workshop venue led organizers to again hold the gathering at the Welch Allyn Lodge in Skaneateles Falls, New York in late October.

#### **3.2 WORKSHOP PARTICIPATION AND INVITATION PROCESS**

With limited space and resources, the workshop steering committee indicated early in the planning process that attendance should be “by invitation only,” and that funding support should be provided to those invited. This approach helped ensure that a balance of representatives from all governing sectors would participate in the event. Many attendees at the 2000 workshop indicated this approach was an important success factor to ensure diversity of participants and organizations.

The 2000 workshop provided other useful lessons. For example, a NASA goal was to include tribal representatives, and some did participate. However, it was more difficult to recruit these individuals than people from other sectors, particularly given the small size of most tribes in the Northeast. Moreover, the network of tribal GIT interests in the

Northeast seems to have diminished in recent years with the departure of some of its leaders. As a result, tribal governments were not defined as a specific workshop sector.

The 2004 workshop focus and goals required an even more robust design and effort to garner appropriate participants, particularly at the local and regional policy level as a goal was to address GIT outreach matters from a public management perspective. The need to understand potentially differing local perspectives was expressed. While more sectors could be defined, it was determined that a critical mass of individuals could participate from five different governing sectors: municipal, county, regional, state and federal. Each of these sectors is defined in Chapter 2.

Funding was made available for approximately four representatives per state, including the state representative in NEAF, and three additional local and/or regional participants. As shown in Appendix B, a total of 53 participants attended, with each local and regional invitee personally nominated by their lead state representative and/or one or more national associations, including the National Association of Counties (NACo), the National Association of Regional Councils (NARC), the National League of Cities (NLC), International City/County Management Association (ICMA) and/or National Association of Towns and Townships (NATaT). Given differences in local government structure within the region, at least one regional representative was selected from each of the New England states, and at least one county representative attended from the eight other northeastern states.

Each state was treated on a case-by-case basis to determine the most appropriate and balanced mix of local and regional participants. Each person represented a specific type and size of jurisdiction as well as job position complementing others. An important aspect of the "by-invitation-only" policy was that funding support was only provided for surrogate attendees as approved on a case-by-case basis. Past experience in 2000 was that follow through of this policy resulted in a better set of attendees and results. In the end, a wide variety of participants attended the workshop, including elected county officials, regional council directors, city managers, planning directors, and GIS managers.

Representative(s) of sponsoring federal agencies and national organizations also participated in the workshop. However, the steering committee decided that the number of federal participants should be limited to ensure that most attendees were not from the federal sector, and to maintain attention to state, local and regional perspectives and needs.

Because of the participant selection process, organizers knew that few of the workshop participants would know each other except for the state participants, and this situation might adversely impact local and regional interactions and input. However, attendees were encouraged to meet others through various approaches, and the program provided a local and regional orientation session to help address this situation. In addition, name tag lanyard colors corresponded to the governing sectors to encourage attendees to seek out and meet peers from other states.

### **3.3 WORKSHOP PROGRAM**

The workshop was designed to maximize opportunities for formal and informal dialogue among participants, as well as to inform participants and gather input from them based on their unique backgrounds and experiences. In addition to plenary topics, the workshop steering committee determined to have three sets of concurrent events as shown below.

#### **Workshop Breakout Sessions**

<b>Part 1: Meet Participant Needs</b>				
Local and Regional – Orientation/Introductions		State – Meeting, Advanced RS		
<b>Part 2: Governing Functions</b>				
Water and other Natural Resources Management	Planning and Community Growth Management		Homeland Security/Emergency Management	
<b>Part 3: Governing Sectors</b>				
Municipal	County	Regional	State	Federal

The first concurrent part of the program enabled local and regional participants to meet each other, many for the first time, while state participants had the opportunity to address common issues related to their work with IAGT, and learn about remote sensing advances. The second concurrent part consisted of governing function breakout sessions as described below in Section 3.4. The third concurrent part enabled peers representing similar government organizations to meet together. As described in Chapter 2, five governing sectors were defined to characterize all workshop participants by government affiliation. A lesson learned from the IAGT 2000 workshop was the benefits derived by enabling peers from the same sector to meet together to draw conclusions near the end of the workshop, so this approach was repeated and again found to be useful.

As shown in Figure 3-1, and detailed in the agenda in Appendix A, the final agenda embraced a variety of experiences, including presentations and demonstrations, poster sessions, panel discussions, and breakout sessions. This approach provided learning opportunities, as well fostered interactions, and long term relationships and results.

A particular concern in the agenda development was to ensure that participants brought back tangible knowledge about remote sensing and/or GIT that could have applicability to their government back home. At the same time, participants expressed the desire to learn from various GIT and other outreach programs to generate feedback about them and recommendations for improvements. An expressed desire was to learn from participants at all levels, but also to encourage participation of and learn from multiple federal agencies. Meeting these diverse goals with the same program was challenging, particularly given the available time and diversity of participants, ranging from those with policy and public management interests and insight, to others desiring to learn about technical advances and experiences.

**Figure 3-1: Workshop at a Glance**

**Tuesday, October 26, 2004**

8:00	<u>Plenary Workshop Welcome: Robert Brower, CEO, IAGT</u>	
	<u>Session 1: Municipal, County and Regional Representatives</u>	<u>Session 2: State Attendees: Remotes Sensing Updates and IAGT Northeast Affiliates Discussion</u>
8:30	<p><u>Session Overview: Kevin Neimond, GIS Program Manager, NACo</u></p> <p>Paired Participant Introductions, followed by:</p> <ul style="list-style-type: none"> <li>• <u>Key Concepts, Players, and Developments in Remote Sensing: Tim Haithcoat, Program Manager, Missouri Spatial Data Information Service, University of Missouri</u></li> <li>• <u>Key Federal Remote Sensing / GIT Organizations, USGS: New National Geospatial Programs Office: Milo Robinson, Framework and Cooperating States Coordinator Federal Geographic Data Committee; Leslie Wollack, Outreach and Communications Manager, Geospatial One-Stop Project</u></li> <li>• <u>NASA Applications Program: Martin Frederick, Deputy Program Director, Applications Division, NASA</u></li> <li>• <u>NOAA: Coastal Services Center Overview: Nicholas Schmidt, Chief, Coastal Information Services Branch, NOAA</u></li> </ul>	<p><u>Session Overview: Emily Constantine Mercurio, RS Engineer and Project Manager, IAGT</u></p> <ul style="list-style-type: none"> <li>• <u>Technical Remote Sensing Developments and Techniques: Jeff Liedtke, Director, Sales, Applications and Solutions, Digital Globe</u></li> <li>• <u>Federal Remote Sensing and Land Use/Land Cover Developments and Opportunities: Tim Haithcoat, Program Manager, Missouri Spatial Data Information Service, University of Missouri</u></li> </ul>
10:15	Break	
10:30	Association Updates & Discussion	
	<p><b>Association Updates : GIT Initiatives for Local and Regional Entities</b></p> <ul style="list-style-type: none"> <li>• <u>NACo, Kevin Neimond, GIS Program Manager; NSGIC, William Johnson, NSGIC Past President and Manager of GIS and NYS CSCIC; American Planning Association, Peter Hawley, Outreach Coordinator, Other Associations - all participants</u></li> <li>• <b>Round Robin Discussion and Q&amp;A Key Local and Regional Issues and Concerns to Address during the Workshop</b></li> </ul>	<ul style="list-style-type: none"> <li>• <u>IAGT Activities Update and Workshop Purpose: Robert Brower, CEO, IAGT, Matthew Mercurio, GIT Specialist, IAGT</u></li> <li>• <u>Opportunities for the Future and Feedback – all participants, Robert Brower, CEO, IAGT, Dana Piwinski, Chief Operating Officer, IAGT</u></li> </ul>
11:45	Lunch and Introductions	
1:00	<u>Welcome and Introductory Remarks, Workshop Goals, Opportunities, Expectations, and Plans: Robert Brower, CEO, IAGT</u>	

1:15	<b>Panel: <u>Federal Remote Sensing / GIT Outreach Providers and Strategies-What's New</u></b> Moderator: <i>Dr. John D. Bossler</i> , Consultant and former Director, Center for Mapping, The Ohio State University; <i>Mark L. Demulder</i> , Acting Executive Director, Geospatial One Stop Project, USGS; <i>Martin Frederick</i> , Deputy Program Director, Applications Division, NASA; <i>Dr. Bruce A. Davis</i> , Director, Interagency Modeling and Atmospheric Assessment Center, Science and Technology Directorate, US DHS; <i>Nicholas Schmidt</i> , Chief, Coastal Information Services Branch NOAA CSC
3:15	<b>Panel: <u>State Remote Sensing and GIT Efforts to Assist Localities and Regional Entities</u></b> Moderator: <i>Dr. Lisa Warnecke</i> , President, GeoManagement Associates; <i>Ted Koch</i> , State Cartographer, Wisconsin; <i>Nick Hutton</i> , Project Manager, Emergency Preparedness Information Network, New Jersey Office of GIS; <i>Christian Jacqz</i> , Director, MassGIS, Massachusetts; <i>Stuart Davis</i> , Administrator, Enterprise Shared Services, Ohio Office of Information Technology
4:45	<u>Wrap up for the Day and Introduction to IAGT State Remote Sensing Applications Projects:</u> <i>Robert Brower</i> , CEO, IAGT, <i>Matthew Mercurio</i> , GIT Specialist, IAGT
5:15	Reception and Poster Session, Remote sensing application posters and sponsor displays
6:15	Dinner, <u>Welcome to Central New York:</u> <i>Dr. Dennis Golladay</i> , President, Cayuga Community College
7:15	<u>Congressional Update</u> , <i>Eric Webster</i> , Staff Director, Subcommittee on Environment, Technology, and Standards; House Science Committee <b>Presentation: <u>Views from Mars</u></b> , <i>Diane Bollen</i> , Athena Project Coordinator, Cornell Astronomy

**Wednesday, October 27, 2004**

8:00	<u>Introductory Session:</u> <i>Robert Brower</i> , CEO, IAGT IAGT State Remote Sensing Workshops, Summary of IAGT / NACo partnership accomplishments and benefits; Related findings of others' investigations and workshops; Purpose, goals and instructions for three breakout sessions		
	<b>Blue Group: Water and Other Natural Resources Management</b> Leader, <i>Kevin Neimond</i> , National Association of Counties (NACo)	<b>Green Group: Planning and Community Growth Management</b> Leader, <i>Martin Roche</i> , Canin Associates, Inc.	<b>Red Group: Homeland Security/Disaster and Emergency Management</b> Leader, <i>Alan Leidner</i> , Booz Allen Hamilton
8:35	<u>Introduction to Breakout Session:</u> Importance of Topic, Participant Introductions, Scope, Goals for the Day		
8:45	<b>Breakout Part 1: Lessons Learned from IAGT State Remote Sensing Projects</b>		
	CT – <i>Sandy Prisloe</i> IN – <i>Robert Weaver</i> MI – <i>Robert Surber</i> PA – <i>Dr. Jay Parrish</i> VT – <i>David Brotzman</i>	MA – <i>Mark Maloy</i> NJ – <i>John Peterson</i> RI – <i>Nancy Hess</i> WI – <i>Ted Koch</i>	ME – <i>Misty Greene</i> MN – <i>Christopher Cialek</i> NH – <i>Fay Rubin</i> NY – <i>William Johnson</i> OH – <i>Stuart Davis</i>
10:30	<b>Breakout Part 2: Remote Sensing/GIT Outreach Strategies and Programs</b>		
	USDA NRCS – <i>Reed Sims</i> USGS Water Discipline NY - <i>Rafael "Willie" Rodriguez</i> NOAA CSC - <i>Mary Culver</i> Wisconsin DNR- <i>Dreux Watermolen</i>	US DOT – <i>Sherry Ways</i> US EPA – <i>Adhir Kackar</i> US HUD – <i>David Chase</i> NOAA CSC – <i>Amanda Rutherford</i>	US DHS – <i>Fred Herr</i> USGS – <i>Mark Demulder</i> US DHS – <i>Jo Jordon</i> US DHS – <i>Zachary Usher</i>

12:00	<b>Lunch with Speaker:</b> <u>Perspectives of a Local Elected Official:</u> <i>Commissioner Randy Johnson, Hennepin County, Minnesota Past President, National Association of Counties</i>		
1:00	<b>Workshop-Wide Discussion:</b> <u>Key points from Morning Breakout Session</u>		
1:30	<b>Workshop-Wide Presentation:</b> <u>Lessons Learned from Non-GIT Federal Outreach Programs for State, Local and Regional Entities:</u> <i>Dr. Bruce McDowell, Academy Fellow and Project Director National Academy of Public Administration</i>		
2:00	<b>Breakout Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: "What Works and What Doesn't"</b>		
	<i>Kate Hackett, Senior Planner, Tompkins County, New York and David Carr, IAGT; Janis Bobrin, Drain Commissioner, Washtenaw County, Michigan; Jon Giles, GIS Coordinator, City of Portland, Maine</i>	<i>Nancy Hess, Principal Environmental Planner, State of Rhode Island; Christina Tait, Deputy City Manager, Hudson, Ohio; Percy Dougherty, Commissioner, Lehigh County, Pennsylvania; David Fricke, Executive Director, Minnesota Association of Towns; Kathleen Lamako, Deputy Director, SEMCOG, Michigan</i>	<i>Christian Jacqz, GIS Director, State of Massachusetts; Jim McConnell, GIS Director, New York City OEM; Nick Hutton, Project Manager, EPINet, New Jersey; Tom Wieczorek, City Manager, Ionia, Michigan; Michele Boomhower, Executive Director, Lamoille County Planning Commission, Vermont</i>
3:30	<b>Breakout Part 4: Facilitated Discussion on Key Needs, Issues, Characteristics, Opportunities, and Recommendations about Successful Local, Regional and State RS/GIT Outreach Strategies and Programs</b>		
4:45	Demonstrations of Decision Support Systems		

**Thursday, October 28, 2004**

8:00	<u>Review of Yesterday's Work and Plans for the Day:</u> <i>Robert Brower, CEO, IAGT</i>				
8:10	<u>Breakout Session Reports from Wednesday Governing Function Groups: Commonalties, Differences, Recommendations, and Priorities Based on Governing Functions; Q&amp;A; Purpose, Goals and Instructions for Concurrent Governing Sector Breakout Sessions:</u> <i>Dr. Lisa Warnecke, President, GeoManagement Associates</i>				
9:15	Municipal	County	Regional	State	Federal
	<b>Facilitated discussion</b> of key, unique and priority needs, issues, characteristics, opportunities and recommendations about successful local, regional and state RS/GIT outreach strategies and programs.				
10:30	<u>Breakout Session Reports from Governing Sector Groups: Commonalties, Differences, Recommendations, and Priorities Based on Governing Sectors</u>				
11:30	<b>Wrap Up Panel – Responses to Findings and Recommendations, Where can and do we go from here? Sending a message to Washington, D.C.</b> Moderator: <i>Dr. Lisa Warnecke, President, GeoManagement Associates; Mark L. Demulder, Acting Executive Director, Geospatial One Stop Project, USGS; Ted Koch, State Cartographer, Wisconsin; Kathleen Lomako, Deputy Executive Director, SEMCOG; Randy Johnson, Commissioner, Hennepin County, Minnesota; Jim Query, GIS Director, Philadelphia, Pennsylvania</i>				
12:15	Closing Comments and Feedback by Workshop Participants				

### **3.4 FUNCTIONAL BREAKOUT SESSIONS**

An important decision made early in the workshop planning process was to establish the two sets of concurrent breakout sessions. The first set was considered to be a primary learning opportunity. Participants were able to devote the greater part of the middle workshop day to hearing about GIT outreach programs and perspectives related to one of three governing functions shared by all levels of government. Research and anecdotal findings show that opportunities for enhanced data sharing, improved efficiencies and better governing outcomes can be achieved if governments at different levels work together on common missions or functions. Many such programmatic and data sharing relationships are strengthening in time, and GIT provides an effective approach and tool to enhance these efforts.

While the goals discussed in Chapter 1 guided the overall development of the workshop, IAGT and the NEAF state representatives also had an important program reason to hold such breakout sessions. One of IAGT's recent state and local remote sensing outreach efforts is the Remote Sensing Applications Program. State representatives were in the process of completing projects under this program during 2004. The program requirements included that each of the 14 states would prepare and present a summary presentation and poster about their project at an IAGT event to share experiences and provide lessons learned. As part of the application process, each project was classified according to one or more of NASA's 12 defined application priorities identified in Chapter 1.

#### **3.4.1 Breakout Session Determinations**

A comparison was conducted of key local and state government interests and concerns at this time, NASA's 12 applications categories, and the topics addressed in the IAGT state projects. At the same time, knowledge of American government structure, authority, responsibility and functionality was considered.

Three proposed governing functions were chosen that were important to all five governing sectors represented at the workshop, as shown in Figure 3-2. The steering committee agreed that these functions would be effective subjects for both learning and feedback during the breakout sessions:

- Water and other Natural Resources Management
- Planning and Community Growth Management
- Homeland Security and Disaster/Emergency Management

An additional reason for strong workshop program focus on governing functions was the growing trends in governing today. Resources are increasingly constrained. Governments face growing requirements for performance and accountability. At the

same time, society’s needs regarding these governing functions are becoming increasingly complex and important. As shown in this figure, each of the sectors at the workshop has important roles for these functional areas. Many opportunities for dialogue and collaboration were provided with the selection of these functions. Potential benefits are overall streamlining and increased efficiency and effectiveness of intergovernmental efforts, as well as in data and GIT coordination—an important driver for attention at a public management level.

**Figure 3-2: Common Local, Regional and State Functions Addressed in Three Workshop Breakout Sessions**

<b>Sector</b>	<b>Water and Natural Resource Management</b>	<b>Planning and Community Growth Management</b>	<b>Homeland Security and Disaster/Emergency Management</b>
<b>Municipal Governments</b>	Storm Water Management, Flood Control, Water and Sewer Utilities, Watershed Management	Long Range (Comprehensive) Planning, Land Development Regulation, Zoning, Addressing, Parks and Trails, Infrastructure Planning	Police, Fire, Emergency Medical Services, Public Health, 911 Emergency Response and Reverse 911, Strategic Infrastructure Protection
<b>County Governments</b>	Storm Water Management, Flood Control, Soil Conservation, Water Quality Management, Pollution Control	Long Range (Comprehensive) Planning, Land Development Regulation, Zoning, Addressing, Parks and Trails, Open Space Preservation, Infrastructure Planning	Sheriff, Fire, Emergency Medical Services, Emergency Management, Strategic Infrastructure Protection
<b>Regional Councils</b>	Water Quality and Resource Planning Assistance to Local Governments	Regional Planning, Metropolitan Planning Organizations, Assistance to Local governments	Coordination Assistance
<b>State Governments</b>	Pollution Control, Soil Conservation, Flood Control, Assistance to Local Governments	Transportation Planning, Planning Policy Development	Emergency Management, Police, Dam Safety, Homeland Security, State Police, Military Affairs

### **3.4.2 Breakout Session Design and Speaker Guidance**

Four periods during the second day of the workshop were dedicated to the functional breakout sessions to provide time to fully explore GIT and other outreach experiences

and opportunities for improvement. Two sessions were held in the morning; and two sessions were held after lunch and two plenary presentations.

Each of the three breakout sessions were comprised of four distinct, but interrelated parts designed to ensure that all participants were (1) able to learn information that they could apply in their own organizations, (2) effectively engaged, and (3) provided helpful input based upon their knowledge, experience and interest. Parts 1, 2 and 3 of the breakout sessions were comprised of presentations followed by question and answer sessions. The intent of these sessions was to help determine implications to enhance and strengthen federal and other RS/GIT outreach strategies and programs and stimulate dialogue to understand differing perspectives. Part 4 did not have speakers, but instead consisted of a facilitated discussion to derive participant input.

The presentations during the three breakout sessions are summarized in Chapter 4. During the presentations, participants in each breakout session were asked to take personal notes, ask questions and provide feedback to determine key success factors in each of the examples, and implications for federal and other local, regional and state RS/GIT outreach strategies and programs. Input gathered through this process is described in Chapters 5 and 6.

Each breakout session included the same format, schedule and timetable. Speakers were given the following common set of questions before the workshop to use as guidance for the content of their presentations.

### **Part 1: Lessons Learned from IAGT State Remote Sensing Projects**

State representatives presented results to date about their projects sponsored by IAGT that were related to the subject of each breakout session. The 14 states were divided into one of the three sessions so attendees were able to learn about at least three projects and associated experiences. Each speaker was asked to address the following points in their presentations based on the IAGT funding assistance program requirements:

- Discuss the overall project purpose, participating organizations, accomplishments and results relating to the cause and solution to the problem or need.
- Describe how remote sensing and other GIT were used or integrated in the project, including any technical breakthroughs.
- Demonstrate outcomes and long-term benefits of the project, internally and/or for others. Examples include improved decision making capability, modernized business process, collaboration, governance, and/or reduced resource or time requirements.
- Describe if and how this use of remote sensing and/or other GIT will be institutionalized and sustained in the long term.

- Detail project lessons learned and critical success factors. These may include policy, management, personnel, data and technical challenges encountered and solutions.
- Based on your experience with this project and others, propose recommendations about the design and implementation of GIT outreach strategies to maximize benefits for direct program recipients, and also for other local, regional and state entities.

## **Part 2: Remote Sensing/GIT Outreach Strategies and Programs**

Selected federal and other representatives were asked to address the following issues and questions as applicable in their agency and concerning the breakout session topic:

### **AGENCY OUTREACH GOALS**

- What is your agency's (formal or informal) outreach goal and strategy for state, regional and local entities and/or concerning GIT?
- How important is outreach to state, local and/or regional entities concerning GIT as part of your agency's overall mission, and is attention to outreach strengthening?
- Is one of your agency's goals to communicate the agency's long term mission, goals, plans and project budgets regarding GIT to state, local and regional entities?

### **PROGRAM COMPONENTS**

- What outreach programs are available in your agency today and will be in the future for state, local and/or regional entities concerning GIT?
- When did the programs start, and what are current and projected funding levels?
- What are the leading program components and activities, such as grants or other funding, educational materials and/or sessions, clearinghouses, technical assistance and/or tools, joint data development and maintenance, others?
- What efforts have been made to communicate and synchronize efforts with other federal agencies having similar outreach goals and efforts to avoid redundant, conflicting or "stovepiped" programs, and to maximize benefits?

### **DEFINITION OF TARGET AUDIENCE**

- Is it your agency's goal to communicate and work with the broadest spectrum of potential local, regional, state and other stakeholders?
- Has your agency defined a specific target audience for these outreach efforts, and if so, how has the audience been segmented and prioritized?
- Does your agency primarily focus on one type of agency (please name), or multiple agencies within state, regional, county, and/or municipal entities, or others?

- Does your agency provide different approaches and programming for differing jurisdictions to maximize results, such as by population size, urban vs. rural or other conditions, “rich vs. poor” in terms of financial resources, geographic region, etc.?

#### IMPLEMENTATION APPROACH AND PROVISIONS

- How are your agency’s outreach efforts and programs being implemented?
- What are the roles and responsibilities of key parts of your agency and others to implement this approach (program offices, headquarters vs. regional and field offices, other agencies, associations, contractors, others)?
- What efforts are being made to:
  - ensure sustained and long term benefits to direct program recipients (beyond the program’s duration), and to other jurisdictions?
  - achieve comparable baseline GIT capacity (in terms of institutional, technical and data resources and capabilities) across multiple jurisdictions?
  - coordinate and synchronize GIT efforts among multiple agencies within an individual jurisdiction (locality or state)?
  - encourage and sustain effective interaction and coordination between states and their counties, municipalities and regional entities?
  - encourage and sustain coordination among neighboring states?
- If your agency’s efforts are directed toward counties, municipalities and/or regional entities, what efforts are being made to:
  - coordinate GIT work among neighboring localities and regional entities?
  - communicate and synchronize efforts with states, and particularly state agencies, with similar outreach missions and programs, to avoid redundant, conflicting, or “stovepiped” programs?

#### RESULTS, CHALLENGES AND OPPORTUNITIES

- What outreach results and outcomes have been realized, and how are performance and results measured in terms of the agency’s outreach strategy?
- What challenges has your agency experienced in the design and/or implementation of this outreach approach, and what issues and/or conditions can impede reaching out to state, local and/or regional entities regarding GIT?
- What opportunities are available to state, local and/or regional representatives to provide input about your agency’s GIT outreach strategy and programs?

### **Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: “What Works and What Doesn’t”**

Selected local, regional and state speakers each discussed experiences and lessons learned by their jurisdictions as being recipients of one or more outreach programs to enhance GIT development or otherwise (non-GIT) regarding the breakout session topic. Each speaker was asked to address the following issues and questions as applicable concerning the breakout session topic:

#### **MATCHING NEEDS WITH OUTREACH PROGRAMS**

- What was the overall problem or need your jurisdiction or region addressed?
- What other agencies or entities did you contact for help, and how was it determined to respond to the specific chosen outreach program(s)?
- Did the outreach program(s) align with your jurisdiction or region’s needs?
- Was the program goal, design, implementation approach, requirements, resources available, and timeline sufficiently clear, flexible and timely to enable your jurisdiction or region to address the original problem or need?

#### **IMPLEMENTATION AND OUTCOMES**

- What results, outcomes and benefits did your organization and others realize by participating in the specified outreach program(s)?
- Did the outreach program adequately provide resources for your organization to devise and implement a long term, institutionalized and sustained approach, or did it primarily provide only a short term or one-time-only answer?
- Did the program encourage and facilitate collaboration with neighboring localities and regions, and with your state? If so, how?
- What efforts were made to synchronize efforts and maximize benefits from multiple agencies’ outreach programs, while also meeting internal needs?
- What challenges and critical success factors were experienced to provide insight for other local and regional entities and states?

#### **FEEDBACK AND RECOMMENDATIONS**

- Based on your jurisdiction’s experience with this program and others, how can the benefits of outreach strategies be sustained and institutionalized in the long term by recipient organizations and extend to other local, regional and/or state entities?
- What outreach provider efforts would help encourage and sustain long term and institutionalized GIT collaboration among multiple agencies within one jurisdiction?
- What outreach efforts would foster sustained and long term synchronization of GIT initiatives among neighboring localities and regions in an individual state?

- How could similar outreach program missions and requirements of multiple agencies be synchronized to improve outcomes and benefits?
- What outreach efforts would encourage policy leaders to help define geo data needs and priorities to help meet their needs and policy objectives, as well as those of neighboring localities and regions?

#### **Part 4: Facilitated Discussion**

The focus of Part 4 was to enable breakout session participants to synthesize key needs, issues, characteristics, opportunities and recommendations. Participants were asked to specify their input concerning local, regional and state RS/GIT outreach efforts in terms of the applicable governing function addressed by their session. Particular attention was given to build upon lessons learned and critical success factors derived from the projects, programs and experiences presented during the session, and draw from the unique perspectives of local, regional and state participants. The input derived through these deliberations and after the speaker presentations is discussed in Chapters 4 and 5.

## **4 CHAPTER 4. PROGRAM HIGHLIGHTS**

As discussed in Chapter 3, the workshop program provided a rich mix of plenary and breakout session presentations, as well as several opportunities for participant input. This chapter includes an overview of the plenary presentations on the first and second day of the workshop. It also provides an overview of the presentations given by local, regional, state and federal presenters during the three governing function breakout sessions.

Due to the tremendous volume of material that was delivered during the governing function breakout sessions, it is impossible to summarize it all. PowerPoint presentations are available upon request to IAGT. The information reported in this chapter for each of the governing sector breakout sessions represents one to four key outreach themes expressed by each of the presenters.

Information presented in this chapter is augmented by Chapters 5 and 6 and selected appendices. All attempts have been made to capture input heard in each breakout session after each presentation, in addition to broader discussions in these sessions. Detailed input heard from participants in both the three governing function breakout sessions, and the five governing sector breakout sessions, was edited by facilitators and is provided in Appendix D and E of this document. Chapter 5 details this input and feedback in great detail, with attention to understanding different perspectives by function and sector. Chapter 6 includes a synthesis of material presented both in the form of presentations and participant input, derived from this chapter and Chapter 5.

### **4.1 PERSPECTIVES ON GIT AND OUTREACH ACTIVITIES**

Traditionally, GIT professionals have understood the benefits of engaging elected officials and management level staff in conversation about the importance of technology in the decision making process, but in many cases have lacked the knowledge of the issues confronting these officials. This gap is slowly closing as officials gain more familiarity with the benefits of GIT, and GIT professionals become more embedded within the core business processes that drive their organizations.

As part of the perspective sharing and understanding theme, three speakers were invited to present an overview of policy and management outlooks on GIT and outreach to incite new ideas and create interesting points of focus for subsequent dialogues on outreach strategies throughout the workshop.

IAGT supplied key information to attendees on their outreach activities in the context of remote sensing applications undertaken in conjunction with their 14 Northeast Affiliate states. Throughout the workshop there were numerous opportunities to gain

insight from IAGT staff and the 14 Northeast Affiliates on their lessons learned and other suggestions based on their IAGT project and related work.

#### **4.1.1 Congressional Interest and News**

##### **Eric Webster, Staff Director, Subcommittee on Environment, Technology, and Standards; U.S. House of Representatives Science Committee**

Congress has increasing interest in and involvement with GIT. Both elected officials and staff are becoming more aware and active in this regard, and opportunities are growing to make a big difference. However, GIT issues are very complex and difficult to explain briefly. The many local, regional and state officials at this workshop and nationwide were advised to be proactive and inform and educate elected officials, including Congress and staff. Congress will be impressed, and even more willing to help if better informed about local and state GIT issues and needs.

Need for Greater Coordination and Oversight: The Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census of the House Committee on Government Reform asked the U.S. General Accountability Office (GAO) to investigate the coordination and sharing of geospatial assets. It also sponsored the most recent Congressional hearing related to GIT on June 23, 2004. GAO found (1) a new strategic plan is needed to help coordinate resources and activities, (2) federal agencies are not consistently complying with Office of Management and Budget (OMB) direction to coordinate investments, and (3) OMB oversight is not effectively identifying or eliminating duplication (<http://www.gao.gov/new.items/d04824t.pdf>). Similar Subcommittee hearing conclusions were made through testimonies and investigation (<http://reform.house.gov/TIPRC/Hearings/EventSingle.aspx?EventID=1150>). OMB also recognizes exorbitant data redundancies and is trying to better track costs and activities, but has limited resources to do so. An effective institutional infrastructure does not exist for sufficient oversight, coordination or data sharing.

Local and State Government Importance: Federal officials increasingly recognize that local and state governments often hold more and better data than the federal government. However, the federal government continues to expend resources on potentially redundant data collection and development. Despite greater data access, interoperability challenges exist extensively within the federal government, as well as with local and state governments. At the same time, local and state needs are not well understood or advanced in terms of overall data plans, particularly for satellite programs.

Balancing Research and Operational Needs: NASA research and satellite programs are designed for research purposes. Input is garnered from the academic community and federal government through the National Academy of Sciences (NAS) and other

venues, but with limited attention to other operational uses, particularly in local and state governments. For example, a recent NAS study to help plan NASA's Earth Science Applications program has no local or state representatives. Better understanding of local and state informational needs is required in order to help address them.

Lack of Satellite Data Continuity: Even if NASA satellites are found useful for operational purposes, it can take years to understand how to use their data for local applications, but the risk is the satellites could go away. Congress has acted to help, but more is needed to address continuity issues. For example, NOAA's National Weather Service found data and measurements from NASA's TRMM (tropical rain moisture measurement) satellite could help predict/model the eye-wall of hurricanes useful in track forecasting. NASA planned to let TRMM fall to earth. So NOAA and others came to Congress (especially the Science Committee) to help keep it going. Chairman Boehlert and others worked with NASA, the White House, and NOAA to continue the satellite for the 2004 hurricane season, a particularly bad one, but future plans are uncertain.

Landsat is another example. After a series of satellites and decades of use, many programs now rely on these data, but the current satellite could fail any minute. The White House decided to continue the Landsat mission and fly its sensors on the next generation polar weather satellites (NOAA's NPOESS project). However, NPOESS will not go up until 2010/2011 and there is likely no resource to fill the gap if the current Landsat fails. Short term decisions are made about NASA, NOAA and USGS responsibilities, though data management and long term questions remain.

Achieving Useful Results with Financial Tradeoffs: While Landsat-NPOESS plans are in process, the Science Committee is concerned that the overall NOAA NPOESS project is two years behind schedule, and costs have gone up nearly \$2 billion from \$6.5 billion to \$8.5 billion for the six satellites. Expected results must be delivered from these tremendous investments.

At the same time, the President and NASA are strongly committed to a space exploration program which is expensive – and impacts NASA's resources for earth science programs. NASA's earth science expenditures range between \$1 - \$1.5 billion and this may decrease to fund the exploration missions. Public policy debate must consider this tradeoff as sufficient funds likely will not be available for both.

Satellite and data investments also must be judged in terms of understanding, subsequently determining and prioritizing the most important information needs, and finally determining corresponding financial responsibilities. For example, despite many data investments to date, EPA recently did a report about environmental indicators but information was not available in many categories that would make it possible to understand conditions in the country. At the same time, USGS stream gauges are considered extremely useful, but always are under budget pressure.

**Recent Administration and Congressional Attention:** The Administration recently announced a new earth observing initiative which should help bring attention to the need for good information (including satellites and other geodata) and how it can and should be used. Science Committee staff are asking for an assessment of all current related data resources and needs, and how new data would be integrated with these current resources before starting new efforts. Again, determinations are needed about information needs and financial responsibilities.

In recent years Representative Mark Udall of Colorado has been advancing a bill called the Remote Sensing Applications Act. It would authorize funds for pilot programs for state and local governments to do projects and workshops to better understand and utilize remote sensing data. The bill passed the Science Committee in 2004 and could move forward in 2005.

**Opportunities for Improvement and Action:** Areas recognized as needing improvement by the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census's work include: (1) better procurement coordination, (2) improved budget processes to track spending, (3) structural adjustments to align federal efforts, (4) more effective coordination with local and state governments—particularly to eliminate unnecessary data procurement and redundant data requests, and (5) advancement of new applications, new technologies and data availability.

Balance is needed to provide utility and continuity of NASA satellites for both research and operational needs. A critical need is to ensure that useful projects/satellites/data continue, and determine how they will be institutionalized and funded in the long term to reliably meet operational government needs, including at the local and state levels. More efforts are needed to understand local and state government needs for satellite data resources, and to provide opportunities for local and state input into related decision making processes. The Administration's new earth observations initiative and increasing resources for homeland security are promising avenues.

#### **4.1.2 Lessons Learned from Non-GIT Federal Outreach Programs**

##### **Dr. Bruce McDowell, Academy Fellow and Project Director, National Academy of Public Administration**

The Academy is congressionally chartered to help governments manage better. It operates with the same structure as the National Academy of Sciences, and has conducted studies for Congress, federal agencies, state and local governments and others on a wide range of topics. NAPA conducted a landmark GIT study in 1998, *Geographic Information for the 21<sup>st</sup> Century: Building a Strategy for the Nation*, which recommended, in part, strengthening of state and local involvement and intergovernmental coordination in geodata and technology; and strengthened integration of federal geodata responsibilities.

Outreach is one of the most common and oldest requirements for federal aid, essentially requiring getting outside input. Over time, the definition of outreach has expanded to consist of early, frequent and increasingly engaged involvement to provide feedback as well as input. Outreach must increasingly be “the way we do business” to improve government activities, and its value must be sincerely and highly respected to be meaningful.

Distinctions have been made in federal transportation direction between “cooperation” and “consultation,” with cooperation meaning that decisions are to be made jointly to achieve common goals and objectives. Alternatively, consultation means that one party confers with another and considers that party’s views before taking action. Six principles of effective consultation can be used as measures, including:

- Inclusive and well known process
- Effective stakeholder participation
- Extensive two-way communication
- Timely access to decision makers’ feedback to stakeholders
- Satisfaction with the process and
- Influence on results

GIT is essential for many public programs because location is a powerful integrator of otherwise disparate information, similar to fingerprints for human information. Many lessons can be learned from other public programs. At the same time, new applications of GIT can be developed to aid public policy and management, and thus help to further advance GIT support and development. For example, GIT can support “environmental justice” requirements to ensure that federal funds are spent in non-discriminatory ways, including levels of service provided to neighborhoods of different ethnic, racial and income classes. GIT also can be used for program performance monitoring and evaluation, as well as supporting budget and performance integration.

#### **4.1.3 Perspectives of a Local Elected Official**

**Randy Johnson, Chair, Hennepin County Board of Commissioners, Minnesota and Past President, National Association of Counties**

It is not too much of an exaggeration to say that a decade ago, most of those involved with GIS activities in the federal government summarily dismissed those of us who, at the local level, actually used and developed GIS on a very detailed basis to implement our daily programs. The federal attitude was almost: “We’re from the federal government, we know what’s best, and we’ll tell you how you have to do it.”

That clearly changed with recognition by former Interior Secretary Bruce Babbitt and key members of the current Administration that most of the geodata collected and used to make public policy decisions actually comes from local governments. After the

tragic events on 9/11, it became clear that (with some exceptions) most of the geo information that was useful in New York City and elsewhere came from local sources.

We are also moving at the local level to establish property management portals that permit data extraction, integration, and presentation designed to meet our internal needs and those of real estate professionals and the public. At Hennepin County, we will expect to have this portal operating early in 2005 --- and I expect it will have a major effect on reducing property transaction costs. We hired NAZCA, an outside vendor, to do most of this for us. That is a big change for Hennepin County, because we are used to developing these new programs internally. Check back in a few months and we will see if it works!

Another area where GIS is beginning to help policymakers make decisions --- getting GIS out of the computer room and into the Board Room --- is making mapping information so simple that even we elected officials can do it! What did my county get for that public investment in a particular neighborhood in subsidized housing, and more money spent on public safety ... what were the results by neighborhood or precinct? We are beginning to look at what we spend to reduce teen births, intensive child protection attention, and compare it to the results. There is a lot of opportunity for mischief here, but the information should be much better than the "decision by anecdote" that too often predominates in government decision-making.

Those of us here today are "True Believers" in the potential of GIS. I think we are just beginning to see the possibilities!

#### **4.1.4 Institute for the Application of Geospatial Technology Outreach Efforts and State Remote Sensing Applications Projects**

**Robert Brower, Chief Executive Officer and Matthew Mercurio, GIT Specialist**

A key part of the workshop was sharing information about IAGT's Remote Sensing Application Projects in the 14 Northeastern states, as discussed in Chapter 1. As stated in the *Announcement and Guidelines for Funding Assistance Program for Remote Sensing Applications* (January 10, 2003), each state with IAGT project funding had a few requirements to help disseminate their project results and lessons learned to others.

Three mechanisms were used to enable project information to be shared at the workshop, including (1) a poster session, (2) a plenary IAGT presentation introducing each project, and (3) a brief presentation by a representative of each state at one of the governing function breakout sessions.

#### **4.1.5 Views from Mars**

**Diane Bollen, Athena Project Coordinator, Astronomy Department, Cornell University (evening presentation)**

Cornell University had a leading research role in the 2003 missions to Mars, lead by principal investigator Stephen Squyres. Detailed images of the planet's surface and landscapes taken by panoramic cameras on board "Spirit" and "Opportunity," two identical exploratory Mars rovers, were shown. Findings about geological conditions on Mars also were discussed. More information and example imagery is available at (<http://athena.cornell.edu>).

**4.2 FEDERAL REMOTE SENSING/GIT OUTREACH PROVIDERS AND STRATEGIES – WHAT'S NEW?**

**Panel Moderator: Dr. John D. Bossler, Consultant and former Director of the Center for Mapping, Ohio State University**

John reflected that he has been involved for many years and in many ways with nationwide efforts to improve GIT institutionalization. He indicated that progress is evidenced; but needed advances recommended in past reports have not yet been realized. Four speakers presented updates on GIT outreach programs in their agencies. Below are summaries of the federal programs presented by each of the four speakers along with a bulleted listing of outreach components and traits which were highlighted during their presentations.

**U.S. Geological Survey (USGS)**

**Mark Demulder, Acting Executive Director, Geospatial One Stop**

(<http://www.usgs.gov/ngpo/>)

USGS Director Chip Groat recently realigned the geospatial programs for which the USGS has a leadership responsibility into a National Geospatial Programs Office (NGPO). This realignment brings The National Map, Geospatial One-Stop, and the Federal Geographic Data Committee programs into a single program office. The emphasis of the NGPO will be to engage partners throughout the geospatial community in its planning, and in ensuring that its unified portfolio meets the needs of those in the outreach audience.

**Key Outreach Themes Presented:**

- USGS is realigning key national geospatial programs and activities into one unified and visible programs office to improve communications and better coordinate activities associated with base data (The National Map), access to information (GOS), and the development of standards (FGDC).
- USGS is soliciting feedback from outreach audiences on the development and restructuring of partnerships.

- Partnership offices will be expanded to provide additional support to partners.
- A strategy is being developed for communicating the message of national GIT programs effectively to a wide variety of audiences.
- The grants program will be expanded for partners.
- Future goals include creating agreements with state and local government entities that clearly define the structure of their partnerships.

**National Aeronautics and Space Administration (NASA)  
Martin Frederick, Deputy Program Director, Applications Division**

The goal of the NASA Applied Sciences Program is to extend the results of scientific research and knowledge beyond the science community to contribute to partners' applications of national priority.

<http://earth.nasa.gov>

Key Outreach Themes Presented:

- NASA is focused on turning scientific observations into knowledge for decision makers. To accomplish this, NASA partners with a wide variety of federal agencies in many functional areas.
- In addition to federal partnerships, NASA also has cooperative agreements with numerous types of organizations focused on integrating scientific information into national priority issues.
- The DEVELOP Program is a student development program that establishes direct partnerships with state, local, and tribal governments to prototype solutions using NASA results for decision support.

**National Oceanic and Atmospheric Administration (NOAA) Coastal Services  
Center (CSC)  
Nicholas Schmidt, Chief Coastal Information Services Branch**

The NOAA Coastal Services Center was established in 1994 to bring new and under utilized information, services, and technology to the nation's coastal resource managers. With a program "national in scope, local in approach," CSC is focused on obtaining input from customers to guide the philosophy, areas of primary interest, and operating principles of the Center.

<http://www.csc.noaa.gov/>

Key Outreach Themes Presented:

- The mission of NOAA-CSC is to link people, information, and technology in coastal zones.
- 3 "C's" is the NOAA-CSC outreach motto: Communication, Coordination, and Collaboration.

- Outreach efforts are focused on a broad range of coastal managers at the state and local government levels including planners, water resource managers, non-profits, emergency managers, and wildlife agencies.
- State and local government participants are involved in all projects undertaken by NOAA-CSC.
- Outreach communities are engaged through focused conferences and meetings so that their needs are well understood.
- Funding, technical support, and technology transfer are outreach strategies employed to build capacity in partner organizations.

**Department of Homeland Security**

**Dr. Bruce A. Davis, Director, Interagency Modeling and Atmospheric Assessment Center, Science and Technology Directorate**

The Homeland Security Council authorized creation of the Interagency Modeling and Atmospheric Assessment Center (IMAAC) under the Department of Homeland Security (DHS). The goal of IMAAC is to help remove complexities associated with the multitude of tools and data now available by consolidating and integrating federal efforts to model behaviors of various airborne releases into one emergency response organization for homeland security. IMAAC will leverage existing capabilities and the expertise of federal, state and local governments, as well as the private sector, in the area of plume modeling. It will enhance integration between local, state, regional and national resources via the distribution of common unified situation analyses and user-friendly products to all authorized parties. The National Atmospheric Release Advisory Center (NARAC) at Lawrence Livermore National Laboratory (LLNL) is the primary interim provider of IMAAC products.

**Key Outreach Themes Presented:**

- IMAAC will provide federal, state and local emergency response decision makers with a single point of contact for atmospheric modeling and hazards predictions, assessments and consequence reports during incidents of national significance.
- IMAAC staff and experts from various agencies will quality assure and refine assessments based on scientific subject matter expertise, and provide liaisons, familiar with IMAAC products, to local, state and other decision makers for interpretation and explanation.
- Training and exercises will be used to identify necessary improvements in analysis capabilities and to develop appropriate response protocols for the support of DHS and other agency response assets.

### **4.3 STATE REMOTE SENSING AND GIT EFFORTS TO ASSIST LOCALITIES AND REGIONAL ENTITIES**

#### **Panel Moderator: Dr. Lisa Warnecke, President, GeoManagement Associates**

Lisa expressed that bringing together workshop participants representing all sectors of government is a key step in identifying action items needed to develop and refine intergovernmental relationships that would promote improved GIT coordination and collaboration. GIT is arguably one of the greatest organizational challenges under America's form of government known as federalism, in which each level of government has its own authorities, roles, and responsibilities.

One of the beautiful aspects of our nation's form of government is that local governments, albeit with state direction, have many autonomous roles and can initiate and implement programs, and solve problems, often without state or federal involvement. Local governments function closest to the people, and taxpayers feel they get the most from their local tax dollars than at other levels. Some of the most innovative GIT implementation is at the local level due in part to this autonomy and flexibility. State and federal representatives have much to learn from local governments, and, in particular, how these data and technology can be used for public policy making and management.

States also have shown initiative in many aspects of governance and the federal government has much to learn from them too. One example of state initiative is the initiation of outreach programs to help local governments use and manage GIT and related data. Four speakers presented updates on GIT outreach programs in their respective states. In each of these states, a need and solution was identified and implemented. Such initiatives serve as "no cost" leveraging opportunities for the federal government. Below are bulleted lists of outreach components and traits which were highlighted during the presentations.

#### **Wisconsin State Cartographer's Office**

**Ted Koch, State Cartographer, Chair, Wisconsin Land Information Board**

<http://www.geography.wisc.edu/sco>

Presentation Title: State Efforts to Assist Local/Regional Governments

Key Outreach Themes Presented:

- Through state legislation, the Wisconsin Land Information Program, and subsequent Board, was created. This body provides technical assistance, standards development, and grant administration to participating counties.
- The program has achieved success in part because it is tied to the business processes which drive how county government operates.

- The economic benefits of the program are highlighted to a wide audience of decision makers.
- Establishing a sustainable funding mechanism (primarily for local government) has encouraged participation, cooperation, progress and success.
- Involvement, support, and political action by the Wisconsin Land Information Association (the state's leading association of GIT professionals) have been of critical importance to sustaining the WLIP.
- Requiring completion of an annual survey as a condition for receiving grants, and as a means to measure program progress/success, has been of critical importance.

**New Jersey Office of Information Technology**  
**Nick Hutton, Project Manager, Office of GIS**  
(<http://www.state.nj.us/ogis/>)

Presentation Title: State of New Jersey's Shared Spatial Data Infrastructure

Key Outreach Themes Presented:

- New Jersey Mapping Assistance Partnership Program (NJMAPP) is an outreach program initiated by the State Office of GIS in 2002 to promote the statewide sharing and integration of geospatial data.
- NJMAPP is a partnership between state and local governments, where the state agrees to provide computer hardware, software and in-kind services in exchange for the local government partner's agreement to share their data.
- Early vision and leadership was needed to help secure funding.
- Executive level leadership "buy-in" from the CIO/CTO must be continued to ensure that collaboration efforts are sustained.
- There was an early emphasis on documenting the return on investment of establishing NJMAPP.
- Local governments receive many benefits for partnering with the state including hardware and software, training, technical support, data development assistance, and internet technology capacity building.
- User group meetings were established to create a culture of "users helping users."

**Massachusetts Executive Office of Environmental Affairs**  
**Christian Jacqz, Director, MassGIS**  
(<http://www.mass.gov/mgis/>)

Presentation Title: GIS and Community Preservation - Geographic Information Technology in Support of Smart Growth

Key Outreach Themes Presented:

- Held “Community Preservation Summits” to garner input from citizens on how they would like their communities to grow (tied technology to issue).
- Communicated and collaborated on project intent, design, inputs from start to finish.
- Utilized local data to address local needs and ensure relevance of effort to local governments.

**Ohio Office of Information Technology**  
**Stuart Davis, Administrator, Enterprise Shared Services**  
(<http://oit.ohio.gov/SDD/ESS/index.aspx>)

Presentation Title: Impact and Interaction with Local and Regional Governments

Key Outreach Themes Presented:

- Local, regional, and state partnerships must be developed and continually nurtured.
- The “message” must be communicated clearly and consistently.
- Technology must be tied in very closely with state level issue areas.
- Partnerships must be mutually beneficial.
- Data development funding must be sustainable.
- Formulate strategies and solutions with all levels of government at the table.

#### **4.4 ORIENTATION SESSION FOR MUNICIPAL, COUNTY AND REGIONAL REPRESENTATIVES**

**Session Moderator: Kevin Neimond, GIS Program Manager, National Association of Counties**

Unlike their peers from the state and federal government sectors, local government workshop participants had varying levels of knowledge about each other, GIT, and related state and federal national level activities prior to the workshop. Through a series of educational presentations and open dialogue, local government participants gained the knowledge required to take full advantage of the following workshop content. This set the stage for meaningful dialogue focused on examining traits of successful outreach and partnership strategies, and helped eliminate the need for technical and logistical conversations which diverted the attention from the focus. Highlights of the session included:

- Paired participant introductions to “break the ice” and encourage networking.
- General overview of remote sensing concepts by Tim Haithcoat (Missouri Spatial Data Information Service) to impart base level knowledge prior to the ensuing workshop events.

- Briefings by federal agencies involved with national level geospatial programs that have a focus on outreach and partnerships with local government. Agencies included USGS, NASA, and NOAA.
- Several national associations with a strong local government membership base or local government interest area exist that have some GIT initiatives. NACo, NSGIC, American Planning Association (APA), and the International City/County Management Association (ICMA) supplied information about their particular programs and urged participants to become active in their organizations to leverage the resources that exist in their respective membership bases.

#### **4.5 NEAF MEETING HELD AT THE WORKSHOP**

State participants met at the same time but with a different focus, as most of the state participants work regularly with each other in other venues, including through the IAGT Northeast Affiliates Program.

##### **Part I: Remote Sensing Topics**

**Session Moderator: Emily Constantine Mercurio, Remote Sensing Analyst, IAGT**

This part of the session was focused on remote sensing opportunities and applications. It began with an update on IAGT's remote sensing activities, covering IAGT's remote sensing acquisition, storage and distribution activities. Following this, Jeff Leidtke, Director of Sales, Applications and Solutions from Digital Globe presented. Concluding the session, Tim Haithcoat, Director of the Missouri Spatial Data Information Service and the Geographic Resources Center at the Department of Geography, University of Missouri-Columbia, spoke on Federal remote sensing data resources and applications. Key points from this part included:

- Image data collection and distribution through IAGT's imagery and data access and sharing system, then known as IDAS.
- An overview of the QuickBird sensor in reference to the NEAF remote sensing applications projects using these data.
- Various remote sensing data applications that were of interest to the NEAF group, and new insights into the flexibility and capabilities of QuickBird data.

##### **Part II: Information on federal programs to utilize remote sensing data, and how derivative products from these efforts can be incorporated into state activities.**

**Session Moderator: Matt Mercurio, GIT Specialist, IAGT**

At this part of the NEAF meeting, Bob Brower gave an update on IAGT's activity, focusing on basic IAGT statistics, and two leading IAGT efforts: the Finger Lakes Decision Support System (FLDSS), and EarthScope. Matt Mercurio provided an

update regarding the NEAF Remote Sensing Workshops, Remote Sensing Applications, and High Resolution Imagery Data Purchase NEAF programs. Dana Piwinski and Bob Brower then briefly described an upcoming IAGT project to start in 2005, entitled *Enhancing Cross-Cutting Decision Support Systems with NASA's Remote Sensing Data*, which also includes USGS. Open discussion followed the presentations. Highlights include:

- All of the NEAF programs are complete, but some final reports are needed for all but the RS workshops. Reports that have been received to date are on the NEAF webpage (<http://www.iagt.org/neaf/>) and the availability of the RS workshop final reports is indicated on the RS workshops portion of the website.
- Opportunities for NEAF participation in the IAGT USGS project which is focusing on the combination of ground based assets with other RS data sources, such as satellite imagery, LIDAR, etc.
- NEAF representatives indicated that finding funding for the continuation of all of the three NEAF programs would be of utmost importance to the group.
- Most of the NEAF representatives were particularly interested in prioritizing the continuation the RS workshops.
- NEAF representatives indicated that the IAGT programs were very successful because they were involved in the creation of the program, program guidelines and program components.

#### **4.6 WATER AND OTHER NATURAL RESOURCES (WNR) MANAGEMENT BREAKOUT SESSION**

Due to the tremendous volume of input that was received during the presentation sessions, it is impossible to list all of the excellent content participants delivered. The information presented below represents one to four key outreach themes presented during the breakout groups. All attempts have been made to capture input after these presentations in Appendix D of this document, and key findings from the presentations are incorporated in the synthesis presented in Chapter 6.

#### **Breakout Part 1: IAGT State Remote Sensing Projects: Lessons Learned**

##### **Connecticut**

Lead Entity: University of Connecticut, Cooperative Extension Service

Presenter: Sandy Prisloe, Geospatial Extension Specialist

(<http://www.canr.uconn.edu/ces/>)

Key Outreach Theme(s) Presented:

- Engage a wide variety of partners from multiple sectors (municipal, regional, state, academic, and non-profit).

### **Indiana**

Co-Lead Entity: Johnson County, Indiana Resource Conservation District

Co-Presenter: Bob Weaver, Executive Director

(<http://www.jcswcd.org/>)

Co-Lead Entity: Indiana University Purdue University Indianapolis (IUPUI)

Co-Presenter (not in attendance): Jill Saligoe-Simmel

(<http://www.in.gov/ingisi/>)

Key Outreach Theme(s) Presented:

- Ensure clearly defined goals for the use of technology are aligned with issues.

### **Michigan**

Lead Entity: Michigan Center for Geographic Information

Presenter: Rob Surber, Deputy Director

(<http://www.michigan.gov/cgi>)

Key Outreach Theme(s) Presented:

- Align outreach effort with an important issue at the given level of government.
- Assist the target audience in understanding how technology can be utilized to gain further insight into an issue.

### **Pennsylvania**

Lead Entity: Pennsylvania Geological Survey

Presenter: Jay Parrish, State Geologist

(<http://www.dcnr.state.pa.us/topogeo/>)

Key Outreach Theme(s) Presented:

- Partner with organizations, such as extension services, which have pre-existing relationships with the target audience.
- Utilize many forums, such as open houses or personal visits, for reaching target audiences.

### **Vermont**

Lead Entity: Vermont Center for Geographic Information, Inc.

Presenter: Dave Brotzman, Executive Director

(<http://www.vcgj.org/>)

Key Outreach Theme(s) Presented:

- Teach outreach audience about the advantages and the limitations of technology.
- Highlight the economic benefits of the technology to outreach audiences.
- Stress creativity in partnership development to deliver the services needed to make it a success.

## **Breakout Part 2: Remote Sensing and GIT Outreach Strategies and Programs**

### **United States Department of Agriculture (USDA) Natural Resources Conservation Service Reed Sims, New England IRT GIS Specialist**

The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.

[\(http://www.nrcs.usda.gov/\)](http://www.nrcs.usda.gov/)

Key Outreach Theme(s) Presented:

- Continued communication with stakeholders is mandatory.
- Showcase technology to partners during public meetings.
- Act as a broker to bring together and introduce potential partners.
- Physically locate near the partner (i.e. county offices).

### **United States Geological Survey (USGS) Water Resources Discipline Rafael Rodriguez, District Chief - New York District**

The USGS Water Resources Discipline (WRD) provides reliable, impartial, timely information needed to understand the water resources of the United States.

[\(http://ny.water.usgs.gov/\)](http://ny.water.usgs.gov/)

Key Outreach Theme(s) Presented:

- Utilize case studies to articulate to partners the benefits of the program.
- Learning from the work of peers is often an effective means of teaching the benefits of a program.

### **National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center (CSC) Mary Culver, Physical Scientist**

The NOAA Coastal Services Center was established in 1994 to bring new and under utilized information, services, and technology to the nation's coastal resource

managers. With a program "national in scope, local in approach," CSC is focused on obtaining input from customers to guide the philosophy, areas of primary interest, and operating principles of the Center.

(<http://www.csc.noaa.gov/>)

Key Outreach Theme(s) Presented:

- Rely on the outreach recipient to provide the "who, what, where, when, and why" information that will steer the direction of the outreach strategy.
- Use various methods for linking coastal resource managers with relevant remote sensing technology such as joint data acquisition, training, applied research and tool development.
- Seek partnerships with like-minded organizations/associations (i.e. Nonpoint Source Education for Municipal Officials [NEMO] at the University of Connecticut).

**Wisconsin Department of Natural Resources  
Dreux Watermolen, Chief, Science Information Services**

(<http://www.dnr.state.wi.us/>)

Key Outreach Theme(s) Presented:

- Citizens and local officials are powerful allies in resource stewardship and environmental protection, as federal and state agencies cannot manage and protect all natural resources or every aspect of the environment.
- Keep the language simple (i.e. computer tools rather than "decision support systems").
- Continually fine tune the outreach effort strategy based on participant feedback.
- Utilize a five step outreach implementation approach:
  1. Review and assess tools
  2. Understand target audience
  3. Develop conceptual framework
  4. Provide technical assistance
  5. Evaluate

**Breakout Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: "What Works and What Doesn't."**

**Tompkins County, New York**

**Kate Hackett, Senior Planner**

(<http://www.tompkins-co.org/planning/>)

**David Carr, IAGT Geospatial Information Technology Specialist**

(<http://www.iagt.org/fldss/>)

Key Outreach Theme(s) Presented:

- Determine access area issues and solutions (i.e. rural inclusion).
- Be flexible with adjustment to the system (i.e. system interface changes) as partners provide feedback.
- Examine training at each step of the outreach strategy implementation and be flexible to revise.

**Washtenaw County, Michigan**

**Janis Bobrin, Drain Commissioner**

([http://www.ewashtenaw.org/government/drain\\_commissioner/](http://www.ewashtenaw.org/government/drain_commissioner/))

Key Outreach Theme(s) Presented:

- Hold regional meetings to keep partners involved.
- Hold quarterly meetings with local officials.
- Maintain win-win partnerships that provide benefits to all parties. This is not limited to monetary gain, but could include support resources such as technical assistance.

**City of Portland, Maine**

**Jon Giles, GIS Coordinator**

(<http://www.portlandmaine.gov>)

Key Outreach Theme(s) Presented:

- Partnership projects demonstrate what is technically possible and provide less risk to individual local government units.
- Capacity building partnership activities are the most helpful to local government.
- Consider statewide and regional base mapping projects for federal partnership investment opportunities.

#### **4.7 PLANNING AND COMMUNITY GROWTH MANAGEMENT BREAKOUT SESSION**

Due to the tremendous volume of input that was received during the presentation sessions, it is impossible to list all of the excellent content participants delivered. The information presented below represents one to four key outreach themes presented during the breakout groups. All attempts have been made to capture input after these presentations in Appendix D of this document, and key findings from the presentations are incorporated in the synthesis presented in Chapter 6.

## **Breakout Part 1: IAGT State Remote Sensing Projects: Lessons Learned**

### **Massachusetts**

Co-Lead Entity: Massachusetts Executive Office of Environmental Affairs, MassGIS

Co-Presenter: Philip John, Sr. GIS Analyst

([www.mass.gov/mgis](http://www.mass.gov/mgis))

Co-Lead Entity: Berkshire Regional Planning Commission

Co-Presenter: Mark Maloy, GIS Coordinator

([www.berkshireplanning.org](http://www.berkshireplanning.org))

Key Outreach Theme(s) Presented:

- Developers and users of tools must collaborate from the beginning of a project, preferably in person.
- Determine the accessibility constraints of the end user community, such as high speed internet access.
- Level of communication, flexibility, and support from the grant funder is a significant factor in successful project implementation.

### **New Jersey**

Co-Lead Entity: Atlantic County, New Jersey

Presenter: John Peterson, Deputy Director, Department of Regional Planning

(<http://www.aclink.org/webadmin/MainPages/Planning.asp>)

Co-Lead Entity: Bruce Harrison, Director, Office of GIS, New Jersey Office of Information Technology

(<http://www.state.nj.us/ogis/>)

Key Outreach Theme(s) Presented:

- Meet early and often with the end user of GIT tools to obtain feedback regarding the functionality of the application, as well as the specific data needs of the user.

### **Rhode Island**

Lead Entity: Rhode Island Statewide Planning Program

Presenter: Nancy Hess, Principal Environmental Planner

(<http://www.planning.state.ri.us/>)

Key Outreach Theme(s) Presented:

- Seek out a high profile issue and showcase how technology can play an important role in decision making process related to that issue.
- Engage local issue area associations (i.e. watershed associations) in outreach strategy development in order to assure that the program successfully feeds into ongoing activities at the local level.

## **Wisconsin**

Lead Entity: Wisconsin State Cartographer's Office

Presenter: Ted Koch, State Cartographer

([www.geography.wisc.edu/sco](http://www.geography.wisc.edu/sco))

Key Outreach Theme(s) Presented:

- Capitalize on a highly visible issue as a forum for articulating the benefits of GIT.
- Use technology to provide a common framework for public dialogue among developers, preservationists, and policy makers.
- Present science in a manner that is interesting or “flashy” to the target audience in an effort to bridge the gap between scientific knowledge and public understanding.
- Utilize, and be flexible with, different educational strategies including multiple visualization techniques and different types of educational forums.

## **Breakout Part 2: Remote Sensing and GIT Outreach Strategies and Programs**

**U.S. Department of Transportation (USDOT), Federal Highways Administration,  
Office of Planning**

**Sherry Ways, Transportation Planner**

The Federal Highway Administration Office of Planning is an advocate and national leader for environmental protection and enhancement, comprehensive inter-modal and multi-modal transportation planning, and for fair and prudent acquisition and management of real property.

(<http://www.fhwa.dot.gov/planning/index.htm>)

Key Outreach Theme(s) Presented:

- Clearly communicate that GIS based tools are a viable way to communicate the consequences of growth to the general public, as well as to public officials.

**Environmental Protection Agency (EPA), Office of Policy, Economics and  
Innovation**

**Adhir Kackar, Environmental Protection Specialist**

The Office of Policy, Economics, and Innovation is the primary policy arm of the EPA supporting regulatory management, economic analysis, and innovative approaches.

(<http://www.epa.gov/opei/>)

Key Outreach Theme(s) Presented:

- Facilitate collaboration and communication between stakeholders.
- Provide information on model programs, policies and resources.
- Look at both technical and financial assistance as a means to engage partners.

**U.S. Department of Housing and Urban Development (HUD), Office of Policy Development and Research  
David Chase, Economist, Manager of Geographic Information Analysis**

The Office of Policy Development and Research is responsible for maintaining current information on housing needs, market conditions, and existing programs, as well as conducting research on priority housing and community development issues.  
(<http://www.huduser.org/>)

***Presentation not available***

**National Oceanic and Atmospheric Administration (NOAA) Coastal Services Center (CSC)  
Amanda Rutherford, Land Use Planner**

The NOAA Coastal Services Center was established in 1994 to bring new and under utilized information, services, and technology to the nation's coastal resource managers. CSC is focused on obtaining input from customers to guide the philosophy, areas of primary interest, and operating principles of the Center.  
(<http://www.csc.noaa.gov/>)

Key Outreach Themes Presented:

- Outreach strategies should be driven by the client and be results oriented with the flexibility to measure and evaluate the success of the program at any stage of the process.
- The ADDEI Model is a snapshot of outreach strategy development:
  1. Assessment
  2. Design
  3. Development
  4. Evaluation
  5. Implementation
- Explore different forms of “marketing” materials (i.e. one page case studies, post cards) and continually evaluate their effectiveness.

**Breakout Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: “What Works and What Doesn’t.”**

**City of Hudson, Ohio**  
**Christina Tait, Deputy City Manager**  
(<http://www.hudson.oh.us>)

*Presentation not available*

**Lehigh County, Pennsylvania**  
**Percy Dougherty, Commissioner**  
(<http://www.lehighcounty.org/>)

*Presentation not available*

**Minnesota Association of Towns**  
**David Fricke, Executive Director**  
(<http://www.mntownships.org>)

*Presentation not available*

**Southeast Michigan Council of Governments (SEMCOG)**  
**Kathleen Lamako, Deputy Director**  
(<http://www.semco.org>)

*Presentation not available*

**4.8 HOMELAND SECURITY AND DISASTER/EMERGENCY MANAGEMENT BREAKOUT SESSION**

Due to the tremendous volume of input that was received during the presentation sessions, it is impossible to list all of the excellent content participants delivered. The information presented below represents one to four key outreach themes presented during the breakout groups. All attempts have been made to capture the complete proceedings from the breakout groups in the Appendix D and E of this document. Due to the tremendous volume of input that was received during the presentation sessions, it is impossible to list all of the excellent content participants delivered. The information presented below represents one to four key outreach themes presented during the breakout groups. All attempts have been made to capture input after these presentations in Appendix D of this document, and key findings from the presentations are incorporated in the synthesis presented in Chapter 6.

## **Breakout Part 1: IAGT State Remote Sensing Projects: Lessons Learned**

### **Maine**

Co-Lead Entity: Lincoln County, Maine

Presenter: Misty Green, Acting Director, Emergency Management

(<http://www.co.lincoln.me.us>)

Co-Lead Entity: State of Maine

Key Outreach Themes Presented:

- Cast a wide net when looking for partners.

### **Minnesota**

Lead Entity: Minnesota Department of Administration, Land Management Information Center

Presenter: Chris Cialek, Supervisor, Data Management and Coordination

([www.lmic.state.mn.us](http://www.lmic.state.mn.us))

Key Outreach Themes Presented:

- The implication is that the State's GIS Clearinghouse will be implementing this application for use by state residents looking for geospatial data while saving the state the expense of capturing the information themselves.

### **New Hampshire**

Lead Entity: University of New Hampshire, Complex Systems Research Center

Presenter: Fay Rubin, GIS Manager

(<http://www.csrc.sr.unh.edu/>)

Key Outreach Themes Presented:

- Build an understanding of what tasks can be performed with certain applications and data, and which applications and data will require additional resources to make them more applicable to given issues.

### **New York**

Lead Entity: New York State Office of Cyber Security and Critical Infrastructure Coordination

Presenter: William Johnson, Manager of GIS & Critical Infrastructure Coordination

([www.cscic.state.ny.us](http://www.cscic.state.ny.us))

Key Outreach Themes Presented:

- Don't shy away from unique partnerships when applying for the grants.
- Leverage the strengths of each partnering agency.

- Partnerships must be sustainable in areas of data development to ensure that the program is successful in incorporating changes in the landscape.

### **Ohio**

Lead Entity: Ohio Office of Information Technology, Enterprise Shared Services

Presenter: Stuart Davis, Administrator

(<http://oit.ohio.gov/SDD/ESS/index.aspx>)

Key Outreach Theme(s) Presented:

- Introduce new technological tactics to address existing issues.
- Examine partner technical capabilities when developing a solution.
- Remain flexible in your outreach effort, as unforeseen obstacles often occur in collaborative efforts.

### **Breakout Part 2: Remote Sensing and GIT Outreach Strategies and Programs**

#### **Department of Homeland Security, Protected Critical Infrastructure Information (PCII)**

**Fred Herr, Program Manager**

The Protected Critical Infrastructure Information Program is designed to encourage private industry and others with knowledge about our critical infrastructure to share confidential, proprietary, and business sensitive information about this critical infrastructure with the government; but not be required to disseminate it widely as normally required through the federal Freedom of Information Act.

(<http://www.dhs.gov/dhspublic/display?theme=52&content=3455>)

Key Outreach Themes Presented:

- Be aware of data sensitivity and security and setup regulations to ensure that all contributing parties are in agreement on how the data will be stored, utilized, and shared.

#### **United States Geological Survey (USGS)**

**Mark Demulder, Acting Executive Director, Geospatial One Stop**

USGS Director Chip Groat recently realigned the geospatial programs for which the USGS has a leadership responsibility into a National Geospatial Programs Office (NGPO). This realignment brings The National Map, Geospatial One-Stop, and the Federal Geographic Data Committee programs into a single program office. The emphasis of the NGPO will be to engage partners throughout the geospatial community in its planning, and in ensuring that its unified portfolio meets the needs of those in the outreach audience.

(<http://www.usgs.gov/ngpo/>)

Key Outreach Theme(s) Presented:

- Develop a plan for effectively communicating the “message.”
- Aid new participants in overcoming initial impediments to participating in a program.
- Have a unified web presence for your program to give easy access to information.
- Help existing participants improve their services by utilizing the program.

**Department of Homeland Security, Federal Emergency Management Agency (FEMA)**

**Jo Jordon, Regional GIS Coordinator, Region II**

FEMA regional offices serve several states, and regional staff work directly with the states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur.

(<http://www.fema.gov/regions/>)

Key Outreach Theme(s) Presented:

- Focus should be on field based support and assistance.
- Important to know what data exists, how it can be licensed, and sharing procedures prior to an incident that requires information sharing.

**Breakout Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: “What Works and What Doesn’t.”**

**Massachusetts Executive Office of Environmental Affairs, MassGIS**

**Christian Jacqz, Director**

([www.mass.gov/mgis](http://www.mass.gov/mgis))

Key Outreach Theme(s) Presented:

- Invite all stakeholders to introductory discussions.
- Understand the specific data needs of first responders.
- A discussion on financial resources must be part of the early program planning phase.
- Federal agencies need to work with, not jump over, states in program outreach efforts to localities and regional entities.

**New York City Office of Emergency Management**

**Jim McConnell, GIS Director**

(<http://www.ci.nyc.ny.us/html/oem/home.html>)

***Presentation not available***

**New Jersey Office of Information Technology, Geographic Information Systems  
Nick Hutton Project Manager, Emergency Preparedness Information Network  
(EPINet)**

(<http://www.state.nj.us/ogis/>)

Key Outreach Theme(s) Presented:

- Engage both policy and technical levels for coordinating homeland security planning efforts.
- Include all sectors of government in coordinating committees.
- Make sure that the outreach program does not bring about an unfunded mandate.
- Provide incentives such as in-kind labor, hardware, software, or funding to encourage partners to take part in the program.

**City of Ionia, Michigan  
Tom Wieczorek, City Manager**

(<http://city.ionia.mi.us/>)

Key Outreach Theme(s) Presented:

- Understand the technical capabilities of the intended audience. For example, many emergency management departments are utilizing pencil and paper for mapping functions.
- Training is a key component of an outreach strategy.

**Lamoille County, Vermont Planning Commission  
Michele Boomhower, Executive Director**

([www.lcpcvt.org](http://www.lcpcvt.org))

Key Outreach Theme(s) Presented:

- Planning and collaboration must be conducted before an event forces a partnership.
- Grants aid local governments in adhering to state and national standards

## **5 CHAPTER 5. FINDINGS FROM BREAKOUT DISCUSSIONS**

While workshop participants learned from plenary and breakout presentations as described in Chapter 4, a key workshop purpose was to gather participant input based on unique experiences, backgrounds and perspectives. This chapter provides a synthesis and analysis of information and opinions provided by workshop attendees through two sets of breakout sessions designed to generate such input. Detailed input captured through flip charts during the deliberations of each of the breakout sessions is available in Appendix D and E as edited by breakout session facilitators. In addition, scanned images of the flipcharts are available upon request.

The findings included in this chapter are presented in a quantitative manner when possible, with several figures to reveal information and enable readers to interpret these results. Other participant input is synthesized and interpreted to reveal differences with a qualitative approach. Findings have been aggregated in this chapter by individual governing sectors and functions to illuminate differing perspectives, with several concepts quoted or paraphrased below. The synthesis presented here was validated and revised based on the input of breakout session facilitators before it was included in this report. The detailed matter provided in this chapter is complemented by Chapter 6, which provides a combined synthesis of workshop presentations and input organized by common themes.

### **5.1 DETERMINATION OF NEEDED GIT OUTREACH TRAITS**

Workshop participants spent most of the second day engaged in breakout session discussions about one of three “governing functions” including (1) Water and other Natural Resources Management, (2) Planning and Community Growth Management, and (3) Homeland Security and Disaster/Emergency Management. Each session included a similar number and mix of municipal, county, regional, state, and federal representatives to help ensure comparable results. Federal attendees were specifically asked to participate in a supportive role in the functional breakout session discussions to enable local, regional and state “voices” to be heard most clearly. With the defined workshop focus on GIT outreach traits, participants engaged in a thorough process to determine, compile and prioritize needed traits.

As summarized in Chapter 4, three panels were held in each session, with presenters representing all levels of government and providing content appropriate to the governing function of their session. During each session, participants provided feedback and implications about these experiences concerning GIT outreach, which were documented on flipcharts. This input is incorporated in the findings reported in this chapter.

Following the three panels, participants in each session joined one of five mini-breakout groups (15 in total). Participants were predetermined to ensure multiple

perspectives and maximize dialogue across governing levels in each of the five groups. This approach was recommended as a successful process applied by the NOAA Coastal Services Center in similar settings to help ensure all participant perspectives were gathered, understood and incorporated. Participants in each of the 15 groups were asked to define traits that make a GIT outreach strategy and program successful in terms of their session's governing function. Each of the five mini-breakout groups reported back to their full breakout session when reconvened.

At the end of the day, each breakout group compiled comments from their session's five groups. Each leader then led discussions within their session to clarify and refine overall results. Once this process was completed, participants were asked to individually determine ("vote" for) the most important traits identified in their session from their perspective by placing one or more colored dots on these traits. Each individual was provided with seven dots of the color that portrayed the one of the five governing sectors that they represented.

Detailed participant input through each of the three governing function breakout sessions is available in the form of (1) feedback to panel presentations, (2) traits identified via each of the 15 mini-breakout sessions, and (3) the subsequent compilation of these traits. In addition, the total number of dots assigned by participants in each session is provided to indicate the relative importance of each trait. Detailed input captured through flip charts is available in Appendix D as edited by the three breakout session facilitators. In addition, scanned images of the flipcharts are available upon request.

## **5.2 VALIDATION AND SYNTHESIS OF NEEDED GIT OUTREACH TRAITS**

The three governing function breakout session leaders met after their sessions ended, and combined remarks from all three sessions to generate a common list of needed GIT outreach traits. This verbatim combined list of needed GIT outreach traits is presented in Figure 5-1. This figure also includes a summary phrase that was subsequently determined for each of the identified 12 traits. These phrases were prepared in order to present the findings in graphic form as shown in the additional figures in this chapter.

**Figure 5-1: List of Needed GIT Outreach Traits**

<p><b>1. Defined Measures:</b> Structured and well defined metrics for gauging success          alternative word for metrics; <i>measures</i> (Municipal)          metrics <i>and objectives</i> (Regional)</p>
<p><b>2. Incentives:</b> Adequate incentives (financial and tangible)  <i>and benefits</i> (Regional)</p>
<p><b>3. Sustainability:</b> Sustainability and transferability as key design component</p>
<p><b>4. Early User Engagement:</b> Engaged decision makers, stakeholders, and users closest to issue as early as possible  <i>Engage, not engaged</i> (Regional)</p>
<p><b>5. Meaningful Interaction:</b> Ongoing partnerships with continuous, honest, sincere, and respectful interaction with mutual benefits should be a focus of the strategy          ...Strategy and program (Federal)</p>
<p><b>6. Local Training:</b> Training focused on user needs that demonstrates an understanding of diverse needs and is provided locally (<i>within locals</i>) (Municipal)          use existing partners (Regional)          alternative wording: <i>Develop training programs according to clients needs; offer customized training to those needs and provide classes in local/accessible locations</i> (Federal)</p>
<p><b>7. Build Mission Capacity:</b> Alignment with core mission to build capacity in partner organization to ensure sustainability          capacity <i>and capability</i> (Municipal)          alternative wording: <i>Build capacity with core mission</i> in partner (Regional)          alternative wording: <i>Align outreach programs with clients needs and business processes to up participation and ensure sustainability</i> (Federal)</p>
<p><b>8. Flexibility:</b> Flexibility to allow timely responses to compelling needs          added note (<i>ambulance chasing</i>) (Municipal)          added note (<i>use caution – stay on target</i>) (County)          compelling <i>partner</i> needs (Regional)</p>
<p><b>9. Active Champions:</b> An articulate champion within a partnership organization that can provide feedback and guide outreach efforts</p>
<p><b>10. Effective Communications:</b> Effectively communicate benefits of outreach to target audience  <i>and evangelize, focus on specific product</i> (Municipal)</p>
<p><b>11. Unified Federal Voice:</b> Have Federal agencies speak with a coordinated/unified voice          speak <i>or map; (concerning data collection/information)</i> (Municipal)          added note (<i>in geographic terms</i>) (Federal)</p>
<p><b>12. Simplicity:</b> Keep It Simple</p>

On the third and final workshop day, participants attended the appropriate “governing sector” breakout session to represent their employer, including (1) Municipal, (2) County, (3) Regional, (4) State or (5) Federal. Participants in each of the five governing sector sessions were asked to validate the common list of needed GIT outreach traits by (1) refining any traits on the common list with more appropriate terminology and/or (2) adding any additional needed traits. Figure 5-1 includes the terminology suggestions provided by each group for applicable traits.

Through internal discussions, participants in the municipal, county and regional sessions added additional needed GIT outreach traits, while state and federal representatives did not choose to do so. As in the other breakout sessions, individual participants were asked to determine (“vote” for) the most important traits from their perspective using seven colored dots. The color of the dots provided to each person revealed the functional breakout session that they attended the previous day, allowing for the total number and distribution of the dots to be tabulated and objectively compared by both governing sector and function, with results discussed below. Following this process, participants in the five governing sector breakout sessions were asked to identify needed action steps to best serve the needs of the sector they represented in terms of future GIT outreach.

Detailed participant input through each of the five governing sector breakout sessions is available in the form of (1) suggestions for revised terminology to describe the common GIT outreach traits, (2) additional traits identified in the municipal, county and regional sessions (the state and federal sessions did not chose to identify additional traits), (3) subsequent “votes” for each of these traits, and (4) desired action steps concerning GIT outreach. Detailed input captured through flip charts is available in Appendix E as edited by the breakout session facilitators. In addition, scanned images of the flipcharts are available upon request.

### **5.3 DIFFERING PERSPECTIVES BY GOVERNING FUNCTION**

Participants in each of the three governing function breakout sessions had differing deliberations and results, but session leaders found sufficient similarities to generate the list of common GIT traits shown in Figure 5-1. Several additional figures are presented here to reveal how participants indicated their preferences for the most important traits on this list by “voting” with dots in the governing sector breakout sessions. The color of the dots indicated the appropriate governing function session attended by each individual so all results could be tabulated and objectively compared by both function and sector to reveal similar and differing perspectives. Additional GIT outreach traits were also determined by participants if desired by their governing sector group; but only municipal, county and regional participants did so, denoted as “other” traits in these figures.

Figure 5-2: Percentage of Responses by Function

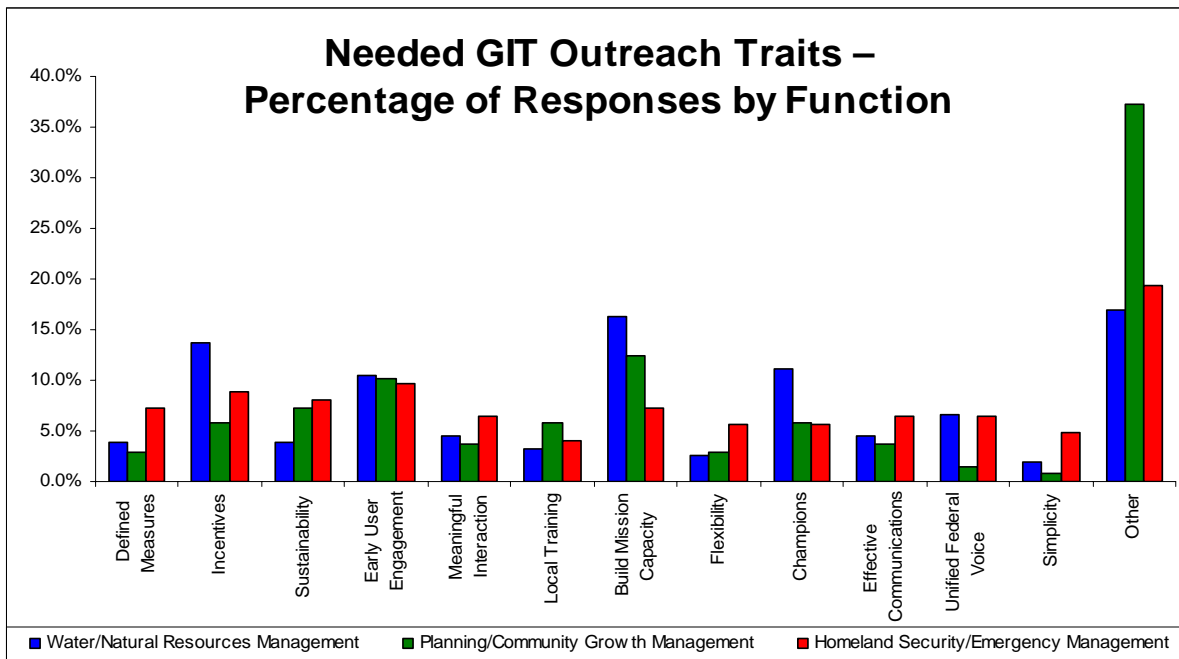


Figure 5-3: Distribution of Responses Function

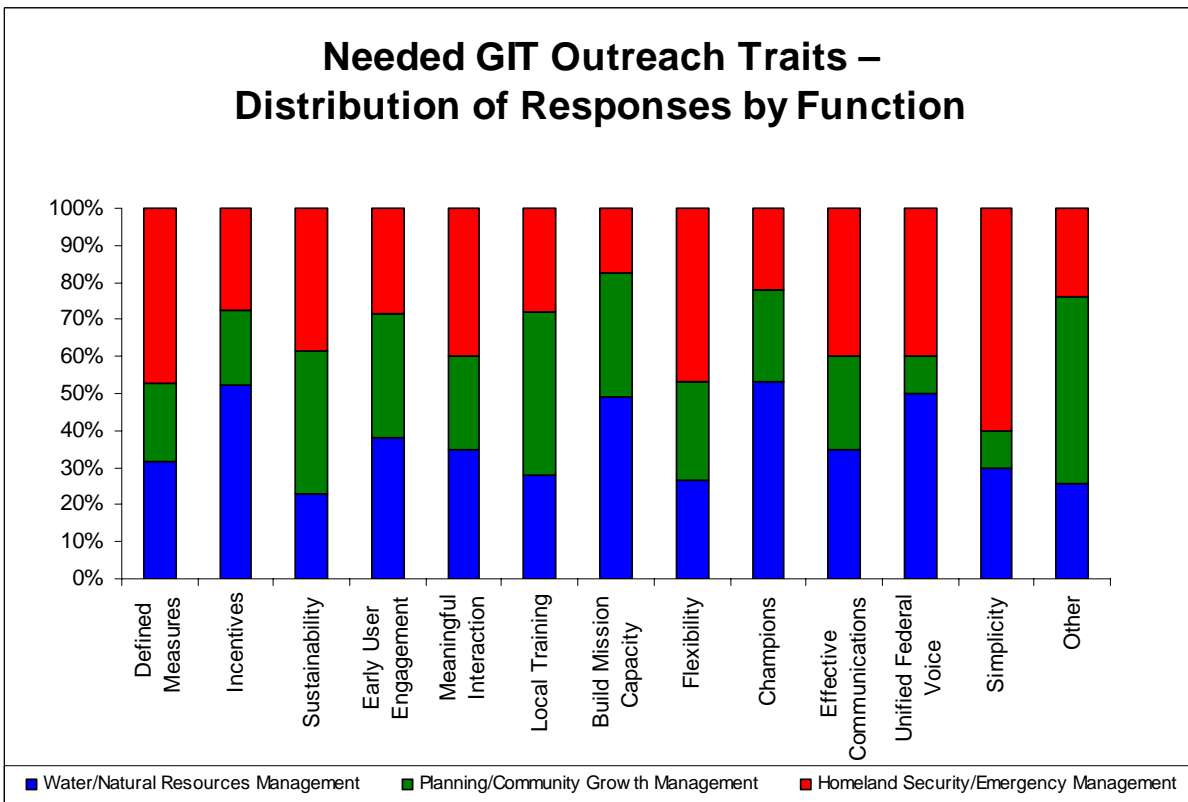


Figure 5-2 shows the percentage of dots assigned by participants in each of the three functional breakout sessions for each of the 12 and other traits. It reveals which traits were determined to be most important by all participants, and which were relatively most important to each of the three governing functions. These findings are presented in terms of percentage, rather than total number, of dots placed by participants in each group because the total number of available dots varied by group. Approximately the same number of individuals participated in each of the functional breakout sessions, but the total number of placed dots ranged from 124 from the Homeland Security and Disaster/Emergency Management group to 153 in the Water and other Natural Resources Management group. The actual number of voting individuals in each breakout session differed slightly.

An additional approach to understand these results is presented in Figure 5-3. The distribution of dots for each trait by function, in effect, indicates how participants in each function “value” each trait compared to participants in the other functional groups. The findings shown in these figures and highlights of additional input provided by participants in each of the functional breakout sessions are discussed below. Some interpretation is provided based on perspectives of the workshop organizers, but these views are clearly denoted as possible, rather than definitive, rational for the findings.

### **5.3.1 Water and Other Natural Resources (WNR) Management**

Figure 5-2 reveals that on average, when comparing responses among participants in the three functional groups, “other traits” received more dots than any of the 12 traits identified from the synthesis of input from the three functional breakout sessions. However, participants in the WNR session were more satisfied with the common list than the other attendees. They distributed relatively more of their dots among the 12 traits than participants in the other two sessions, with 83% of the total dots applied to one of the identified traits.

Among all participants, the trait receiving the most dots was “build mission capacity.” Building capacity within partnership organizations was a strong theme in many remarks, with particular emphasis on doing so within core governing missions. As shown in Figure 5-3, selection of this trait was more pronounced by WNR participants than those in the other two functional sessions. WNR participants specifically indicated that an important part of a GIT outreach strategy was to ensure that the target audience be “well defined and understood,” and that efforts should be made to “seek out/understand a cross level business process.” WNR participants also suggested “imbed technology into a core business process. . . solve a problem.”

Nationally and beyond, many of the earliest and some of the most widespread GIT applications are related to WNR, with several types of related applications documented for well over 20 years. However, the workshop findings may indicate limited institutionalization and impact of these applications in government. Several innovative examples of GIT use for various WNR applications are known. However,

questions can be raised about whether such applications are isolated, or if they are institutionalized and part of regular business processes in one or more agencies or governments. The degree to which related agencies nationwide use such applications is also relevant. Questions also can be asked about whether data derived from these processes is shared and used by other agencies and governments in their business processes. In turn, the impact of these applications on government effectiveness and governing outcomes is relevant. It appears these results reveal that opportunities exist for greater usage and results.

An important suggestion offered by WNR participants was to find and develop an appropriate “cross level business process” across multiple government levels. This effort could reveal how GIT can help modernize, reengineer and increase the effectiveness and impact of how one or more WNR functions are carried out at multiple governing levels. Such an approach could help to optimize WNR data management and processing roles across several agencies within one government and across government levels, given GIT capabilities. Wider use of these capabilities could increase the cost effectiveness of several governmental processes within and among governments. This approach could reveal redundancies and potential conflicts. In turn, given increasing fiscal limitations, governmental roles and responsibilities might be realigned and rebalanced. In this way, GIT could help to modernize and potentially eliminate redundant and/or conflicting government processes, achieve cost savings within and among several agencies, increase government effectiveness and enhance governing outcomes, while also maximizing GIT benefits.

Other traits also were stressed more by WNR participants than other attendees. For example, the second most frequently indicated trait was the need for “incentives,” receiving over 52% of all dots. In this view, if the federal government or other outreach providers provide funding, assistance or other help to encourage others, then it is easier to adopt desired changes—in this case to use GIT. The need for “champions” received the third highest number of dots by WNR participants, but WNR participants provided over 53% of the dots for this trait. These findings reveal that WNR participants see that greater GIT usage and impacts could be more fully realized with increased policy level support and resources.

### **5.3.2 Planning and Community Growth (PCG) Management**

Compared to the other two breakout sessions, participants in this group most strongly indicated that the list of 12 identified GIT outreach traits was insufficient to adequately describe an outreach strategy they would view as a long term success. Over 37% of their dots were applied to additional traits. However, Figure 5-2 and Figure 5-3 reveal that PCG participants generally allocated the remainder of their dots for the 12 traits like the average of all workshop attendees.

The most distinctive difference among PCG participants was that they most strongly indicated the need for locally based training compared to the other two groups of

participants. “Joint training/updates,” “narrow focus and audience” and “shared training/partners to hold sessions” were recommended to improve the effectiveness of outreach efforts. They emphasized the need for trusted relationships with trainers and suggested that a state/regional GIT outreach coordinator could be a shared position.

The importance of locally based training may partially be due to the fact that land use planning is a local government function. It was indicated that training programs need to reflect local roles, functions and needs, even if they do not have analogies at other levels. For example, GIT can aid in many aspects of local planning, such as comprehensive and long range planning, zoning, capital improvement and infrastructure planning, annexation, subdivision and site plan reviews, etc. Training programs should address these and other specific planning roles to be most relevant for local officials.

PCG participants emphasized some perspectives more strongly than others did. They reiterated a common theme that outreach initiatives need to build capacity to continue/strengthen institutions that will continue. They also urged caution and flexibility, and encouraged outreach providers to recognize and “extend the reach” of outreach to many different governing players and structures as “one size doesn’t fit all.”

Pilot projects are frequently components of outreach strategies, but PCG participants specifically urged caution about them through several comments. “Maintenance and sustainability” need to be “built in,” and “there must be value to encourage participation/incentives” (underlining indicated by session participants). Moreover, they emphasized that “transition from a ‘pilot project’ or a one time application to broader use is difficult” and has been frequently under emphasized in outreach programs.

PCG participants in particular also urged focus on data over software and technology, finding that “creation of software by public entities is difficult – and generally fails.” This conclusion may reflect participant concerns that several federal agencies, including some participating in the PCG session, have developed such outreach approaches, but that they may not be as effective or useful as envisioned by the providers. There also was concern about apparently duplicative software development in outreach programs by federal presenters.

### **5.3.3 Homeland Security and Disaster/Emergency (HSDE) Management**

Figure 5-2 and Figure 5-3 show that HSDE participants had similar perspectives to those in the other two breakout sessions. Desired GIT outreach traits emphasized more strongly by HSDE participants included “simplicity,” “flexibility,” and “defined measures.” Also more strongly than others, these participants called for measures of success “out of the gate” and specificity about return on investment. HSDE participants also asked for definition and clarity about “what you want accomplished.” Uniquely, success in HSDE can be “that a project is never used.”

Like other attendees, HSDE participants called for outreach providers to know their “target audience.” They specifically suggested that multi-level projects and programs must be developed with attention to the wide range of “haves, have nots, and have mores,” as well as their “varied participation and contributions.” There was considerable emphasis that it was necessary to listen to and support local first responders. Federal agencies were urged to not try to solve initial problems in response to a disaster because it is the local first responders who must respond immediately to make a difference to save people and property, with federal responders typically not on the scene for 48 hours or more later. The message was to focus attention “down to earth” and on the true needs of the first responders; not “pie in the sky stuff.”

Over 19% of the HSDE dots were distributed to additional traits. Data issues were particularly important to HSDE participants, and unique data sharing issues were raised as in other venues addressing this governing function. They emphasized the need for a “bottom-up strategy – go to local government and listen to true needs,” indicating that some of the most accurate and detailed data can be at and should be used from the local level. It also was indicated that funding should be provided to implement GIS in cities, counties and states, but also to ensure that key data layers in adjoining jurisdictions can be seamed together at jurisdictional borders. In this way, roadways can be connected, water features can be whole, and utility lines continuous. In this way, aggregations of regional, state and national data could work and be used by multiple governments as needed.

An important issue concerning HSDE is that localities can hesitate to share data, fearing potential inappropriate use, particularly about critical infrastructure. However, most HSDE participants learned for the first time about the Department of Homeland Security’s Protected Critical Infrastructure Information Program. They suggested that localities and states could benefit by using this program to protect and share data specifically for HSDE needs, as it would not require disclosure via Freedom of Information Act (FOIA) requirements.

HSDE participants agreed that a workshop focused specifically on homeland security and emergency management issues similar to this one would be an excellent “next step” as part of an outreach strategy for this function.

#### **5.4 DIFFERING PERSPECTIVES BY GOVERNING SECTOR**

A similar approach was used to understand and compare needed GIT outreach traits from the perspective of the five governing sector sessions. Figure 5-4 shows the percentage of dots by sector assigned to each of the 12 and other traits. The need to report percentages rather than the total number of dots is even more necessary for the sectoral breakout sessions because, for example, more than twice as many workshop

participants represented federal agencies than regional entities. Accordingly, this figure reveals which traits are relatively most important to each of the five sectors.

Figure 5-5 shows the distribution of dots for each trait according to each sector. This figure indicates how participants in each sector value each trait compared to participants in the other sectoral groups. The findings portrayed in these figures and highlights of additional input provided by participants in each of the sector breakout sessions are discussed below.

#### **5.4.1 Municipal Governments**

Figure 5-4 reveals that municipal participants had several similar perspectives to other sectors, but also unique viewpoints. Like the average of all participants, they strongly indicated the need to build capacity at the local level to help address governing missions. Funding was determined to be a critical need. Other GIT outreach traits emphasized by these participants were sustainability (more than any other sector) and early user engagement, with the need for effective communications also more strongly indicated than by the other participants.

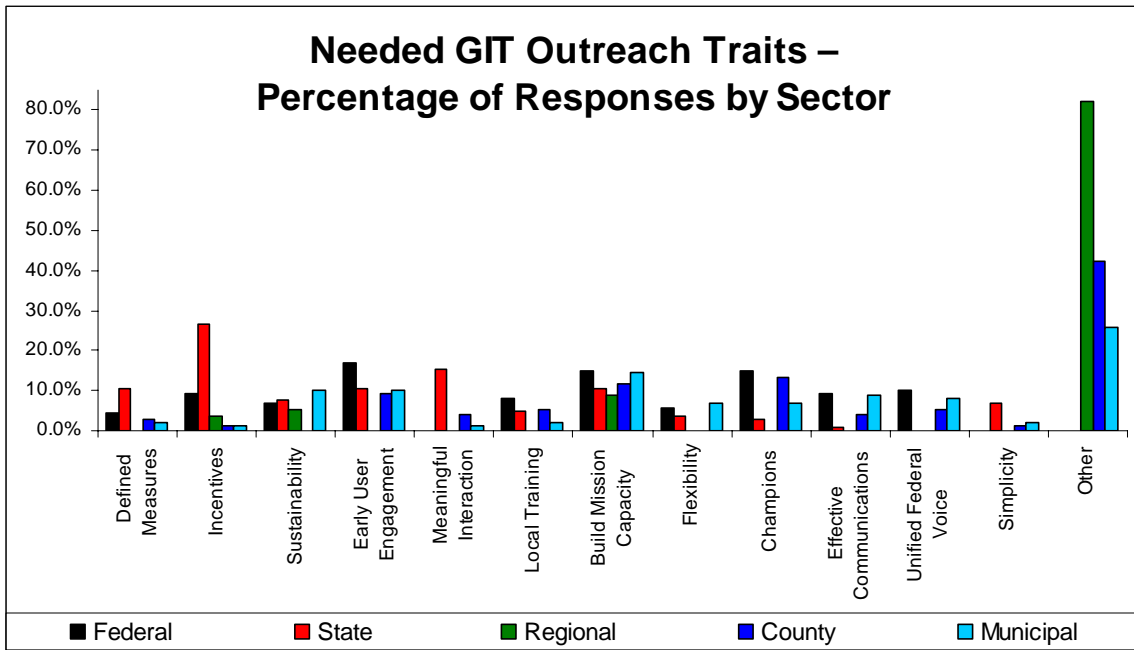
As shown in Figure 5-4, over 25% of the dots indicated by municipal participants were allocated to additional or “other” traits than those on the common list. The additional trait given the most dots was “connect theoretical with day to day processes” which seems to indicate that outreach messages may not address perceived municipal issues and needs and need to be more practically focused. Participants also urged that GIT should be easy to use and apply in order to be utilized. The need for reeducation and recognition of the influence of politics received the second highest number of dots of the additional traits.

A key theme expressed in the municipal session was the need to use and incorporate local data. This may reflect the fact that municipal governments have authority and typically provide more functions and services than any other level of government with direct impact on the public. Accordingly, they have more data about conditions within their incorporated boundaries than any other level of government has within their jurisdiction. For example, municipalities can provide water, wastewater, storm drainage and other utility services, along with police, fire, emergency medical, and various health and human services, in addition to authority over private land use. Each of these functions has unique data needs and activities, and regular transaction updating.

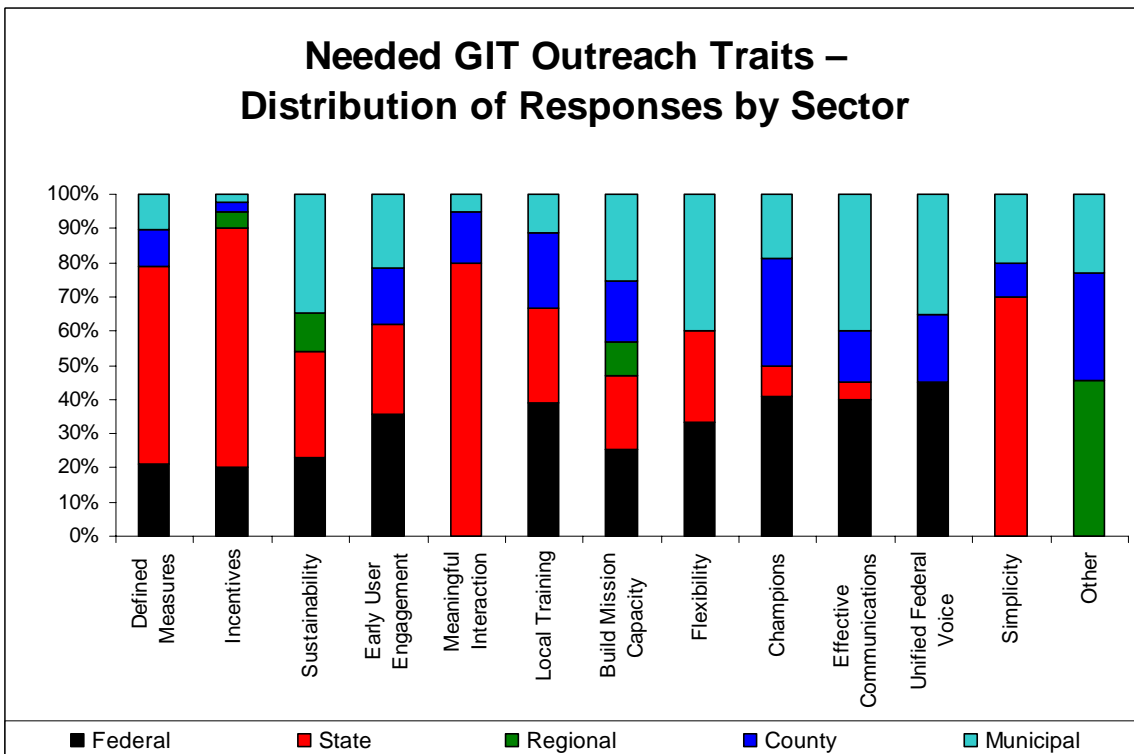
As shown in Appendix E, municipal representatives provided particularly practical recommendations. For example, they suggested the need for summaries of the workshop presentations, canned PowerPoint presentations for elected/appointed officials, directories of programs, provision of maps to help create empowered users, a success cookbook of “best management practices” with application processes, listing

of web sites for RS/GIT opportunities, and model standards and RFPs/RFQs to encourage data sharing.

**Figure 5-4: Percentage of Responses by Sector**



**Figure 5-5: Distribution of Responses by Sector**



They also recommended outreach mechanisms to increase success and cost-effectiveness at all levels, urging that it was necessary to “begin to speak same language” since GIT/RS needs to be elevated to be a necessity like roads and water systems in order to provide funding resources. Memoranda of Understanding were recommended between locals and federal agencies for involvement, funding, and specific data. Regular nationwide and regional gatherings were suggested to help ensure two way communication. Bringing local governments together in workshops such as this gathering was viewed as a helpful way to solve problems and develop solutions.

Municipal participants also urged support for nationwide and state data programs that generate data useful for localities and accommodate funding from all levels, such as for comprehensive base maps and orthophotography. A key point was that federal agencies should accept local data updates into national frameworks. Municipal participants also urged moving from “specific self-serving pilot programs to programs that benefit across spectrum,” and suggested more technical grants to localities for GPS and critical infrastructure, with the conclusion that the ESRI grants to localities are a good model.

#### **5.4.2 County Governments**

County participants expressed some similarities to others at the workshop, particularly municipal attendees, but also some differences. Of the common list, the trait that stood out the most in this sector, and received the highest number of dots, was “active champions.” This may partially reflect the unique governing challenges that exist within counties as discussed in Chapter 2. Many counties have several separate elected officials responsible for key departments with geospatial data and GIT activities, such as clerks and recorders, assessors, sheriffs, etc. If the leading official for such a department is an elected official, it can be particularly difficult to encourage collaboration with other departments. A strong champion can make an even bigger difference within this governing situation than in other sectors where government functions are more unified and operate within one established chain of command. County participants also indicated that given the important roles of elected officials in counties, it is crucial for outreach providers and strategies to work with and address elected officials as well as programmatic and technical staff.

As shown in Figure 5-4 , over 42% of the county dots were allocated to one of several additional GIT outreach trends. These participants also identified several helpful trends. An important concept was that outreach providers need to recognize that the “total cost of ownership (is) like building a house – GIS is not just hammers and nails, it also needs an architect, designers, etc.” This theme suggests that outreach providers may be too focused on tactical GIT needs (for example tools and data), while overlooking overarching and higher priority needs that need to be addressed before tactical matters. For example, with this view and other traits identified by these participants, it would be important that GIT plans and applications are developed to

address public issues, purposes, and missions, and have appropriate corresponding overall system design, resources, etc. to meet this need. County participants also specifically asked for less focus on equipment and more on information itself as a needed outreach trait.

County participants indicated support for states to serve as intermediaries in federal relationships with local governments. However, counties should help define statewide GIT coordination models, characteristics and approaches, and specific resources should be available to ensure that local needs are met. Moreover, counties also serve as important intermediaries, and should establish outreach programs to towns, boroughs, municipalities, etc. as applicable.

County participants provided additional unique recommendations. They urged involving “key decision makers and key stakeholders to help find new champions and gain exposure – need to market to decision makers and align with core business processes.”

Existing marketing opportunities such as state conferences and GIS Day activities should be used to help advance outreach efforts. Some data concerns were expressed similar to the municipal participants, particularly between levels of government. County participants stated, “Federal programs need to provide utility to local governments, and if providing data, make it be at a usable scale at the local level.” An important recommendation was that better coordination of procurement would help governments leverage each other for information, data and resources, and aid better budget tracking.

### **5.4.3 Regional Councils**

Of all the sectors, regional participants found the 12 GIT outreach traits on the common list inadequate as demonstrated by their ranking of other traits as being more important. Over 82% of the regional dots were distributed among traits not on the common list. These results may likely be due to the type of participants in this session compared to others. While efforts were made to have similar attendees in each sector, more regional participants were broad governing managers rather than GIT professionals. Accordingly, they likely had more experience with other forms of government outreach to provide insights about how to improve GIT outreach. Moreover, regional entities, by their inherent nature, are focused on improving coordination across government boundaries, and their roles often include outreach to their corresponding local jurisdictions for various functions. Of the traits allocated to the common list, the one receiving the most dots was “build mission capacity,” the trait that received the most overall dots of any trait on the list. This again would reflect the relationship of regional councils with localities, in that regional councils are funded by federal grants and/or local contributions.

The GIT outreach trait most often indicated by regional participants was to recognize the “many and different players,” as well as their structure and needs as “one size doesn’t fit all.” In particular, they emphasized that outreach providers should “extend the reach of outreach/assistance to more governments and entities: need to extend beyond the usual governments and agencies that are 'in the loop' enough to ask or submit proposals.” Moreover, “pilot studies, though a practical necessity sometimes, can be inequitable and insular - especially if the effort is not made to disseminate results and information about future opportunities to participate.” Echoing this perspective, the second most indicated trait was to “work through existing structures and institutions to create economies of scale.”

Reflecting public management perspectives, regional participants specifically stated that human resources must be dedicated to outreach and that outreach cannot be “an add-on role.” They suggested that USGS is a good model in this regard. They also stressed the need for outreach continuity, and that “grants should provide adequate administrative funding.” In addition, “projects must be meaningful to appropriate level,” reflecting the need for practicality and usefulness to help meet governing needs at the local and regional levels.

Management perspectives also were reflected in the desired action steps determined by regional participants. While some suggestions were similar to other sectors, an important unique one was for federal agencies to “ask for help to implement legislative strategy for more money.” Regional participants suggested that their leaders can help advocate for such funding at the federal level, but also help to coalesce support and the help of member local leaders to assist in such advocacy.

They also indicated the need to “develop an institutional capacity framework with state/local/regional partners that would identify abilities and responsibilities” and to clearly understand the “institutional capacity landscape” across the nation. It also was suggested that the Intergovernmental Cooperation Act of 1968 be used as a model to intergovernmental communication and coordination regarding GIT. Regional participants also urged that funding mechanisms should be analyzed and standardized, and that the suggested capacity framework and existing infrastructure of related organizations should be used to deliver information.

#### **5.4.4 State Governments**

As shown in Figure 5-5, state participants did not add additional GIT outreach traits to the common list. As a result, it is easier to compare state views about the individual traits on the list than local and regional perspectives. For example, the trait with the highest level of support was “incentives,” with over 25% of the dots allocated by state participants. This recommendation stood out quite strongly in contrast with the other sector participants. The average level of support for this trait was 9.7% compared to the other traits, and local and regional participants only indicated it with 3.6% or less of

their “votes.” Other traits with strong state support included “meaningful interaction,” “defined measures,” “early user engagement” and “build mission capacity.”

Most of the state participants at the workshop have GIT coordination positions in their state governments. These findings likely reflect the difficulty of their intermediary role to translate and communicate the practical benefits of working together and in tandem with federal initiatives. They must do so with other state agencies and local and regional entities within their states, and messages and benefits often must be articulated differently to be relevant to individual audiences.

Given this perspective, the most strongly suggested action item indicated by states was to provide adequate incentives, including (1) financial, (2) technical assistance, (3) training. They also urged that outreach should be a higher priority, “not just a ‘check box’ metric,” with state stakeholders more involved in “all phases of program design and execution.” They suggested continuation of existing grant and workshop programs, and participation in the Geospatial One-Stop program and data clearinghouse efforts. A particular suggestion was to develop a “national geospatial extension program” to provide outreach, and complement the related program now sponsored by the U.S. Department of Agriculture. They also suggested that outreach programs need to be sustained, and that the NOAA Coastal Service Center and USGS state liaisons are examples of positive initiatives in this regard.

#### **5.4.5 Federal Government**

Federal participants also provided input about the needed GIT outreach traits though they participated in a supportive role in the development of these needed traits in the governing function breakout sessions. Like state participants, they did not add any suggested additional traits, so Figure 5-5 clearly reveals their relative perspectives about the individual traits on the list. The trait with the highest level of support by federal participants was “early user engagement,” followed closely by “build mission capacity” and “active champions,” and “unified federal voice,” all of which they indicated as needed traits more than any of the other sectors. Federal participants at the workshop included representatives of both headquarters and regional/field offices of several federal agencies. Accordingly, they each likely had some experience with interacting with other levels of government so these results reveal some of the issues and concerns they experience as part of their work.

In terms of needed action items, federal participants indicated the need to “develop and deliver consistent federal message – need to synchronize message of Washington D.C. offices with that of regional and field federal offices/implementers.” They urged strengthening of metadata and data access efforts, such as the Geospatial One Stop project, but also addressed broader public management issues. For example, they suggested strengthening the FGDC by encouraging participation and providing more incentives (“carrots and sticks”) and that the “Office of Management and Budget should support more coordination between agencies.” Staff

with GIT outreach responsibilities should be encouraged and empowered to work more closely together across federal agencies, including having their own meetings.

With some regional representatives of federal agencies in attendance, specific suggestions were made in this regard. The growing need to synchronize federal GIT activity at the regional and field level was expressed. Participants recommended more interaction and meetings across federal agencies at the regional level, particularly for outreach. Regional coordinators of multi-agency federal GIT efforts were suggested. Clearly identified individuals with GIT coordination roles are also needed within individual federal agencies and programs, but some do not exist at this time. In terms of state relationships, federal participants urged that all states involved in a project should be at “at the table,” and federal representatives should be on state GIT advisory councils.

Federal participants reflected that recommendations of past reports should have been implemented, such as *Geographic Information for the 21st Century: Building a Strategy for the Nation*, by the National Academy of Public Administration (NAPA), various National Research Council reports, and other past reports dating back to 1936 such as the “Hoover report.” (For more information on these earlier reports, see *Federal Surveying and Mapping: An Organizational Review, Commission of Geodesy*, Appendix B, July 1973: National Research Council/National Academy of Science.) Recommendations included strengthening involvement of federal authority figures and potentially merging functions of several federal agencies into one agency.

Federal participants echoed an overall workshop theme that more GIT outreach actions are needed and should take place immediately. “Dare to be adequate” was reiterated at various times, with the view “don’t wait until an initiative is perfect, go ahead and roll it out and evolve it through broad involvement.”

## **6 CHAPTER 6. RECOMMENDED GIT OUTREACH APPROACHES**

Chapter 4 provides a review of all speaker presentations; and Chapter 5 includes detailed findings with a summary of workshop participant perspectives. Particular emphasis is made to understand both common and differing views and priorities of attendees while working together in the three governing functions and five governing sector breakout sessions.

Alternatively, this chapter consolidates all input provided throughout the workshop through speaker presentations and participant input, regardless of the breakout sessions in which such input was provided. However, as is often the case with documenting facilitated dialogue, synthesis is an inherently subjective process. Moreover, individual participant perspectives and conclusions can differ significantly from group consensus. Alternative conclusions would be welcomed by the authors.

### **6.1 OVERALL GIT OUTREACH VISION AND PRINCIPLES**

Recognize all governments share the common mission, and must work together to better serve the citizenry. Technology or data cannot be the goal. However, GIT can be advanced as a uniquely effective transformational tool and resource for modeling reality and revealing common issues and program redundancies across agencies and governments.

Seek to understand and “extend the reach of outreach” to the nation’s many and varying players and needs at local, regional and state levels, recognizing federalism complexities and opportunities to create customized, multifaceted approaches to address “have-nots” as well as others.

- Recognize and understand that local, regional and state entities have differing sizes, roles, responsibilities, structures, needs and business processes. “One size does not fit all,” so do not develop a strategy and then try to “fit” it to a target audience.
- Establish integrated, intergovernmental vision and understanding of governance in the United States across sectors with corresponding governing - as well as informational – roles, responsibilities and capabilities.
- Go beyond “the usual governments who are ‘in the loop’ enough to ask or submit proposals” for projects. Don’t assume there are “trickle down” benefits to others.
- Recognize politics and turnover as a regular aspect of government that impacts GIT implementation, particularly at the local level; but a stabilized/sustained/supported outreach effort is needed, not a political program.

- Adopt and implement the critical goal of many non-GIT federal outreach strategies and programs to assess, develop and maintain baseline competencies, and seek to level inequities among “haves,” “have-nots,” and “have-mores.”
- From the beginning, understand and address existing institutional capabilities and capacities, as well as local data needs and resources in target organizations.
- Ensure that outreach efforts do not create any “unfunded mandates.”

Recognize and address the full requirements and costs to institutionalize GIT within local, regional and state organizations, and make sure that public policy and management issues are addressed before tactical matters. County participants in particular advanced this concern.

Elevate outreach as a priority for planning and funding in early stages of GIT program development.

Engage “early and often” to develop a “bottom-up” and continuous outreach approach ensuring broad, meaningful and cost effective audience participation to define GIT outreach needs, goals and strategy.

## **6.2 GIT OUTREACH STRATEGY COMPONENTS**

Use multi-tiered approach to secure sustained support by elected and policy level officials, managers, and staff who have mission and technical responsibilities.

Establish specific, well-defined and structured GIT outreach program goals, desired accomplishments and performance measures, such as (1) inclusive and well known process, (2) effective stakeholder participation, (3) extensive two-way communication, (4) stakeholders’ timely access to decision makers and feedback, (5) satisfaction with the process, and (6) influence on results.

Synchronize federal government GIT approaches to conduct more effective GIT outreach, including within and across agencies—particularly in deployment at regional and field levels.

- Get “own house in order” before conducting external GIT outreach – including consistent messages and naming of federal GIT initiatives.
- Reach beyond “stovepipes” and seek to understand other outreach provider organizations and their target audiences and GIT efforts. Seek out teaming opportunities as multiple federal and state organizations are developing data, tools, pilot projects, training programs, surveys and other GIT outreach initiatives.

- Conduct federal agency outreach to other federal agencies to increase understanding and GIT program compatibilities, and establish opportunities to learn from and work with each other.
- Synchronize GIT outreach efforts among federal agencies – and also with states and other providers to minimize and avoid redundancies and often confusing and even conflicting programming.
- Ensure regional and field level deployment of federal GIT outreach is synchronized across agencies, including establishment of GIT focal points and regular communication channels to ensure consistent messages and outreach delivery.

Understand and help strengthen local, regional and state capacity and capability-- particularly to help address policy needs and accomplish local governing and business missions. In turn, increase relevance, participation and sustainability.

- Align outreach programs to build competencies in core missions, business processes and work flow within target organizations, in particular to provide transactional updating.
- Synchronize design and production of tools with existing mission, decision and business processes. Do not try to force the reverse.
- Connect theoretical advances with day-to-day processes, and help catalyze GIT/RS use for practical needs.
- Help imbed technology into core business processes, but be adaptive to program changes.
- Feed into and facilitate existing local and regional efforts—particularly existing coordinating mechanisms.
- Provide help in the form of hardware, software, training, technical support, data development assistance, internet technology assistance and/or other technology transfer help; but also strive to increase understanding of how GIT can be used to gain policy level insight into leading governing issues and needs, and help solve issues at policy and management levels.

Ensure effective and meaningful communications and interactions by articulating messages and documenting results using “local government language” and by documenting impact of input provided by target audience.

- Articulate common message and vision with clear GIT outreach goals, approaches, roles and responsibilities within internal provider organization – at headquarters-- to regional/field apparatus and technical staff on “front line” of outreach.

- Learn and use local government language in external communications. Use appropriate “branding” while avoiding federal jargon and frequent renaming of programs.
- Reach out and engage users early and often – and listen and respond to expressed issues and needs to ensure mutual benefits.
- Develop and maintain honest, sincere, trusting, respectful and continuous interactions, with particular attention to follow through, to help exhibit respect for others’ time and contributions.
- Find and use good communicators at all levels. Consider development of communications “posse” to help deliver message to various audiences.
- Recognize marketing is crucial to success. Without it, the target audience may never be reached. But marketing is only one part of an effective outreach strategy.

Nurture articulate “champions” at the policy level in both provider and recipient organizations to support peer relationships and provide exposure and guidance.

### **6.3 GIT OUTREACH PROGRAM CHARACTERISTICS, ELEMENTS AND RESOURCES**

Establish integrated intergovernmental GIT approaches that provide multilateral and multifaceted benefits, employ federalism principles and proven intergovernmental approaches, and leverage intermediaries at state, regional and county levels.

- Develop “institutional capacity framework” to understand and address “institutional capacity landscape” and wide spectrum of state/local/regional entities and their authorities, roles, responsibilities and capabilities.
- Help implement, fund and use statewide GIT coordination approaches to communicate and coordinate with localities as well as state agencies; but ensure state programs meet local as well as state needs and garner effective input from local governments to determine appropriate models, characteristics, components and performance measures for successful implementation.
- Develop written Memoranda of Understanding and Agreements among federal agencies and with states, regional entities and local governments as needed, to define roles, responsibilities, funding, and specific data efforts.
- Ensure coordination of federal GIT outreach programs with similar state programs targeted toward local and regional organizations.

- Help counties serve as intermediaries and establish outreach programs for their municipalities and other local governments located in them.
- Use the Intergovernmental Cooperation Act of 1968 as model and mechanism for communicating with local, regional and state organizations.
- Place federal representatives on state GIT coordination councils.
- Better coordinate budget tracking, planning and procurement across agencies and governments to leverage each other for information, data and resources.
- Explore academic partnerships.

Dedicate and sustain financial resources for GIT outreach with meaningful and sustained incentives for participation.

- Implement incentives such as funding, technical assistance, in-kind labor, training, hardware, software, imagery offers or discounts, token gifts, etc. as proven and durable approaches to encourage consistent participation of target organizations, with sufficient flexibility to assure trust, reliability and adaptability to differing and changing conditions.
- Ensure sustainable funding, in particular for data development and maintenance.
- Recognize that motivating interest about new technology, particularly at local levels, almost always requires actual funding to get serious attention.
- Articulate cost-effectiveness of participation for target organizations to help ensure their resource commitments.
- Ensure adequate funding is provided for administrative costs within target organizations.
- Technical grants to localities would be helpful for GPS and critical Infrastructure data development. ESRI grants to localities are a good model.
- Consider use of surveys of funding recipients to measure progress and outcomes of GIT outreach efforts.

Dedicate human resources for GIT outreach that expand on programs at USGS, NOAA and USDA; and ensure that other staff can help implement outreach goals.

- Provide dedicated federal staffing for GIT outreach at regional/field level –

- Expand USGS State Liaisons Program to deploy more liaisons as effective approach to provide federal focal points and to have regular personal interaction with state and other officials.
- Replicate and sustain these and other successful outreach efforts, such as by NOAA Coastal Services Center.
- Expand USDA Geospatial Extension Program to provide more full time GIT outreach specialists throughout the country.
- Ensure technical staff can understand and also communicate to help achieve GIT outreach goals when interacting with target audience.
- Locate staff in local, regional and state offices as practical way to increase learning opportunities and encourage connectivity.

Leverage existing GIT outreach organizations, channels, structures, programs and events to create economies of scale.

- Emphasize and support networking approaches and mechanisms--such as national, regional and state conferences, workshops and events, including statewide GIS conferences, "GIS Day" events, and NASA/IAGT remote sensing workshops.
- Empower local government, and other associations at both national and state levels, to help deliver GIT outreach message and deploy GIT outreach strategy, such as National Association of Counties and its various affiliate organizations, associations at state levels, and department directors (i.e. county administrators, planning directors, engineers, clerks and recorders, etc.).
- Continue IAGT Northeast Affiliates efforts, including regional and state workshops, grants, discounts, and other initiatives in the Northeast to address unique imagery issues and bring local and regional representatives together to solve problems and develop solutions (i.e. this regional summit).
- Enhance use of Geospatial One Stop program as designed to strengthen knowledge transfer.

Exercise caution when implementing pilot projects to avoid marginalizing benefits and risking ill-will that can arise with competitive funding.

- Recognize that pilot projects can be inequitable, insular and self serving, especially if thorough effort is not made to disseminate results and information about future opportunities to participate. Strive to ensure that benefits extend to other parts of the recipient organization, and also other organizations not participating in the pilot project.

- Understand that competitive programs can force governments to unfairly compete against each other. This may help “haves” but not “have-nots,” since many “have-not” governments have little, if any, time and resources to apply for funding.
- Build in program maintenance and sustainability, including transition plans, after pilot project is completed.
- Establish incentives and value to encourage participation beyond initial pilot recipients.
- Ensure individual projects highlight quantifiable progress and accomplishments in terms of process reengineering, cost effectiveness, and return on investment, as well as technical breakthroughs.
- Ensure commonality in products produced through projects
- Do not assume “trickle down” knowledge and benefits beyond direct project participants and recipients.
- Recognize that transitioning from a ‘pilot project,’ or a one time application, to broader use is very difficult, even within recipient organization.
- Ensure that regional projects and programs include all impacted governments (states, regions, counties, local, and tribal) in the planning process.
- Include specific strategies and metrics for knowledge and benefit dissemination, beyond direct project beneficiaries, as part of the overall outreach strategy that included pilot project. Recognize that pilot projects should not be the sole component of an outreach strategy or program. Instead such projects should be only one part of a broader strategy.

Implement effective education and training; and update programs with others at local levels--including more workshops such as this one.

- Partner with others at all levels to address important local issues, and jointly deliver customized training, technology transfer efforts and informational updates.
- Narrow focus and audience, and establish clearly defined goals to demonstrate understanding of and attention to diverse needs and issues, including providing advantages and limitations of differing approaches.
- Enable participants to learn through trusted relationships with trainers and peers to enhance outreach and training effectiveness.

- Sponsor follow up workshops, specifically including one focused on homeland security and related issues, (similar to the IAGT workshop), that could be part of a homeland security outreach strategy.

Develop and disseminate educational products to demonstrate GIT use and benefits to decision makers and the public, such as:

- Canned PowerPoint presentations for elected/appointed policy level officials
- Maps to promote “spatial” thinking and help create empowered users
- Directories and websites for federal and other RS/GIT outreach programs and opportunities
- Success stories through a series of case studies and best practice documents, highlighting economic benefits whenever possible
- Cookbook of “best management practices” with application processes
- Model data and application standards and RFPs/RFQs to promote interoperability and encourage data sharing
- One-page professionally presented summary documents for all of the Northeast Affiliates projects
- Summaries of presentations at this workshop

Learn from other outreach programs to be sustainable, transferable and flexible.

- Provide program continuity to allow timely responses to compelling partner needs; provide flexibility in program delivery, but be sure to stay “on target.”
- Strive for simplicity – tactical GIT outreach efforts should be easily described while achieving and refining multifaceted goals and benefits.
- “Dare to be adequate.” Spend less time perfecting the program internally, and more time rolling it out to the target audience and evolving it through stakeholder feedback.
- As a key design component, ensure outreach initiatives are sustainable and transferable.

#### **6.4 OTHER KEY GIT PRIORITIES TO AID OUTREACH**

Federal agencies:

Seek help from intergovernmental partners to craft and implement Congressional strategy to obtain additional resources.

U.S. Office of Management and Budget:

Develop and support metrics for cross agency and cross governmental coordination and collaboration, and encourage procurement coordination within and among governments.

To all:

Be proactive about providing input about RS and other GIT policy to elected and other public officials, including at the federal level.

Revisit and reconsider implementation of recommendations in past reports such as *Geographic Information for the 21<sup>st</sup> Century* by the National Academy of Public Administration, several National Research Council reports, and other past reports dating back to 1936.

Initiate and implement nationwide and statewide programs to develop and maintain key data sets with sufficient accuracy and precision to ensure local government utility and to provide for cost sharing across levels of government.

## **7 CHAPTER 7. WORKSHOP FEEDBACK**

The process of collecting and analyzing participant feedback on the workshop structure and content is a crucial activity to gauge the success of the individual components of the workshop. One of the steering committee's key requirements was to generate feedback that could be used in the future. A written evaluation form was provided to all participants and a closing panel was conducted at the end of the workshop. The opinions of participants were gathered on individual components of the workshop, ranging from logistical queries ("how useful was the registration process?") to subject matter queries ("were there any additional topics you would add to make it a more effective workshop?"). Combining the results of both logistical and subject matter provides a tremendous picture of what worked well and what components of the workshop would need fine tuning to make them more valuable to future programs.

### **7.1 EVALUATION FORM FORMAT**

Each attendee was provided with a one page (double sided) evaluation form broken into two distinct sections. The first section of the evaluation asked participants to rate parts of the workshop in terms of usefulness to them in their current professional position. A score of "1" indicated that a given part of the workshop was "not useful," while a top score of "5" indicated that this part of the workshop was "very useful." The second portion of the evaluation contained a series of short answer questions designed to garner more detailed input than could be obtained through a numeric ranking scale.

Forty-four workshop attendees responded to the evaluation form. Both sections of the form yielded information that is invaluable to the planners and participants of this workshop, as well as any individual or organization undertaking similar efforts.

### **7.2 RESPONDING TO QUESTIONS WITH NUMERIC RANKINGS**

The numeric rankings portion of the evaluation was divided into five separate categories of questions dealing with specific workshop components:

- The Workshop Overall
- Workshop Logistics
- Tuesday Sessions
- Wednesday Focus Area Breakout Sessions
- Thursday Sessions

The scores for the questions within the categories were averaged to illustrate the overall feeling or sense of usefulness for specific workshop components. Additionally, evaluation scores collected for the category of "Wednesday Focus Area Breakout Sessions" were broken down by the three functional areas of the breakout groups (Water and Other Natural Resources Management, Planning and Community Growth

Management, and Homeland Security and Disaster/ Emergency Management) to gain further insight into the success of each of the functional area breakout sessions.

### **7.2.1 Overall Workshop Value**

The first category of numeric ranking questions provided a high level view of the usefulness of the workshop. Figure 7-1 indicates that participants found the content of the sessions, quality of presentations, and relevance of the materials received to be above average.

**Figure 7-1: Ranking of Overall Workshop Value**

<b>Question</b>	<b>Average Score</b>
The workshop overall	3.9
Content of sessions	3.8
Quality of presentation	3.9
Relevance and usefulness of materials received	3.7

### **7.2.2 Workshop Logistics**

Meeting logistics are the key to a complete workshop experience for many attendees. Just as important as the subject matter of the workshop is how well the support functions associated with the experience are performed. This includes pre-workshop communication as well as onsite amenities.

Figure 7-2 points out that the logistical arrangements were well above average with a few exceptions. The physical environment scored well, illustrated by high scores in location, meeting room setup, and food. The average to slightly below average scores came in the area of timing and pace. Participants were somewhat dissatisfied with the long hours of the workshop and the overall pace of events. Concerns about these two items were repeated topics in the short answer section of the evaluations.

**Figure 7-2: Ranking of Workshop Logistics**

<b>Question</b>	<b>Average Score</b>
Registration process	4.5
Advance information and communication	4.2
Location of workshop	4.0
Dates of workshop	4.0
Hours of workshop	3.0
Meeting room setup and environment	4.5
Food at The Lodge Conference Center	4.8

Dinner at the Sherwood Inn	4.3
Holiday Inn accommodations	3.8
Auburn Travel Service	4.6
Transportation during workshop	4.3
Overall organization and structure of workshop	3.8
General pace of workshop	2.9
After dinner presentation on Mars	3.8

### **7.2.3 Tuesday Sessions**

The “Tuesday Sessions” category solicited slightly above average scores across the board. The scores shown in Figure 7-3 indicate that the Tuesday program had only one item that stood as out above the rest, and that was the poster display session on Tuesday evening. Comments revealed that this session was excellent because it presented a forum for peer-to-peer informal networking on topics related to remote sensing applications and presented a successful example of GIT outreach.

**Figure 7-3: Ranking of Tuesday Sessions**

<b>Question</b>	<b>Average Score</b>
Morning orientation for regional and local government	3.6
Morning state government session	3.7
Afternoon federal level outreach programs panel	3.4
Afternoon state level outreach programs panel	3.8
Afternoon State IAGT Affiliate Remote Sensing Project overview	3.6
Poster displays	4.0

### **7.2.4 Wednesday Sessions**

Participants spent most of their workshop time on Wednesday in one of three breakout sessions dedicated to specified governing functions, augmented by two plenary presentations and decision support systems demonstrations. The evaluations revealed differences by breakout session, particularly about the morning federal outreach session, and the concluding afternoon discussion and key points synthesis session. Figure 7-4 demonstrates that the Homeland Security and Disaster/Emergency Management (HSDE) and Planning and Community Growth Management (PCG) breakout group participants found their federal outreach sessions to very useful, while the Water and other Natural Resources Management (WNR) breakout group participants found their similar session to have less than average value. Similarly, the WNR breakout participants found average value in the concluding afternoon discussion and key points synthesis session, while their HSDE peers found it to be well above average in value.

The majority of the remaining sessions on Tuesday scored similarly across functional areas, with average to above average rankings.

**Figure 7-4: Ranking of Wednesday Sessions**

<b>Question</b>	<b>WNR</b>	<b>PCG</b>	<b>HSDE</b>	<b>Average Score</b>
Morning IAGT state RS projects session	3.8	4.0	3.7	3.8
Morning federal outreach session	2.9	3.7	3.8	3.5
Afternoon state/regional/local outreach session	3.4	3.9	3.8	3.7
Concluding afternoon discussion and key points synthesis	3.0	3.6	4.0	3.5
Wednesday lunch speaker--Randy Johnson, Hennepin County, MN	4.1	3.9	3.8	3.9
Wednesday speaker--Bruce McDowell, National Academy of Public Administration	2.8	2.7	2.5	2.7
Decision Support System demonstrations	3.4	3.1	3.0	3.2

### **7.2.5 Thursday Sessions**

The governing sector breakout sessions proved to be of high value to all participants, regardless of functional area. This is not surprising after an intense schedule of events in the previous days that mixed participants from various sectors together. Many participants expressed an increased ease in conversation when meeting with their sector peers due to the commonalities of their issues and activities. Figure 7-5 denotes that the breakout group reports and wrap-up panel were of above average in ranking of usefulness as well.

**Figure 7-5: Ranking of Thursday Sessions**

<b>Question</b>	<b>Average Score</b>
Breakout group reports	3.7
Governing sector breakout sessions	4.2
Wrap-up panel	3.8

### **7.3 SHORT ANSWER QUESTIONS**

The short answer portion of the evaluation was divided into seven questions designed to provide participants with the opportunity to share their thoughts in a free flowing text format. The questions participants were asked to respond to were:

- Please tell us what parts of the workshop you found most useful.

- Were there any aspects of the workshop which detracted from its effectiveness?
- Were there additional topics you would add to make a more effective workshop?
- Do you have any other suggestions for improving the workshop?
- How will you use what you learned at the workshop within your jurisdiction?
- What are your next steps?
- Do you have any additional comments?

Through the process of analyzing the participant answers, many interesting facts surfaced that gave further insight into the numeric rankings that were derived from the first section of the survey. The textual information also supplied new insights that are instrumental in studying the success of this workshop and in future workshop planning.

### **7.3.1 Please tell us what parts of the workshop you found most useful.**

The overwhelming answer to this request came in the form of one word: networking. Learning from colleagues, both within their sector and outside of their sector, provided attendees with a tremendous opportunity to gain knowledge on activities that are occurring at the local, regional, state, and federal levels. On a structural note, several attendees cited small breakout group sizes as beneficial to their workshop experience.

Below is a sampling of the responses to this request:

- Hearing directly from local, county and regional folks about their federal outreach perceptions was useful.
- The overview of state and federal programs was very valuable.
- The mixing and networking of federal, state, regional, county and local personnel was very beneficial for relationship building.
- The ability to network and see what others are doing and listening to others tell about their projects was a plus.
- Engaging in discussion with a cross-section of folks from various governmental sectors was very useful.
- The discussions among the participants during the breakouts were excellent.
- Small breakouts, discussion/results of small breakouts were the best aspect of the workshop.
- Learning what federal agencies are doing in GIT and hearing about various pilot projects was quite valuable.
- The numbers of participants from various government levels to address the intergovernmental relationship questions is really unique to most workshops I've been to.

### **7.3.2 Were there any aspects of the workshop which detracted from its effectiveness?**

The second question elicited a very strong reaction on three aspects of the workshop that detracted from its effectiveness.

First, the majority of responses focused on the length of time consumed each day by intense workshop activities, and the high density of presentations scheduled into each time block. Attendees felt that the total number of hours built into each day contributed to diminished value in discussions toward the end of each day. Additionally, it was noted that the amount of presentations in each block was too high, causing the agenda to meander from its intended schedule. Relating back to the previous question, attendees cited the dense scheduling as a deterrent to the informal networking opportunities that were of high value.

Second, it was articulated that much of the content of presentations focused too much on the technical aspects of programs and projects and less on the outreach strategy component of the programs and projects that was the intended focus of presentations.

Third, workshop participants felt there was too great an emphasis on summarizing and preparing for next steps of the workshop which created time consuming redundancies in session discussions.

Below is a sampling of the responses:

- I would have given their block of time to attendees for a “breather” before resuming the brain storming.
- Too dense a schedule. Provide ample breaks and other networking opportunities. When you have policy level people (executives and elected officials) you need to keep it from being too technical.
- Length of days – 12 hours was too long.
- Long days! Programs and discussions at the end of the day suffered as a result.
- Scheduling was well done and great effort was made to keep up with the agenda, but we were always behind schedule. Tried to present too much!
- Too much focus on technology and not enough on outreach.
- Over emphasis on summarizing, preparing for next steps, reviewing what we did.

### **7.3.3 Were there additional topics you would add to make a more effective workshop?**

The majority of attendees indicated that additional topics were not what was needed; rather better time management of the existing topics and sessions. However, some suggestions for topics were provided:

- I would like to see more on working models of interagency and intergovernmental collaboration – the structure, not necessarily the projects.
- I would like to have heard more from the task specific federal agencies and the work that they provide and can partner with state, regional, local governments.
- Provide information on different grant programs that are available and what the qualifications are to take part in the programs.
- A presentation on available funding streams/grants matrix/evaluation of which proposals are awarded grants would be useful.
- I would have liked to have seen national Land Grant (USDA CSREES), Sea Grant (NOAA), and Space Grant (NASA) representatives. GIT is becoming increasingly embedded into those three agencies.

#### **7.3.4 Do you have any other suggestions for improving the workshop?**

Several respondents indicated that it would be highly beneficial to invite speakers with an expertise in outreach and marketing (not necessarily GIT expertise) to address the workshop participants. One attendee suggested that it would be useful to have a speaker on the design and selection of various methods for education and capacity building (self instructional tutorials, on site workshops, distance learning, etc.).

The remainder of respondents cited goal setting as a key improvement to the workshop. They believed that there was not a clear consensus as to why everyone was gathered and what the outcome of the activities would be used to accomplish. One person suggested that the workshop should start with an understanding of a target audience for the recommendations. Another recommended that once the goals were constructed, it would be useful to do a one to two year follow-up to measure success in implementing the goals.

#### **7.3.5 How will you use what you learned at the workshop within your jurisdiction?**

In some cases it was traveling miles from home to meet for the first time people from their own state. In other cases it was connecting with a federal program that they did not know existed. The results were still the same: the focus, once attendees returned to their offices, would be to build a wider network of partnering organizations and individuals with common goals.

Below is a sampling of the responses:

- We plan to get specific action items communicated and an action plan established from the sector representatives in our state.

- I found a number of contacts of folks with great ideas for improving GIT in my jurisdiction.
- The results validated much of what we are doing and gave us some areas to focus more efforts toward—specifically casting a broader net when looking for partnerships, working through states to reach regional and local government, and acting locally to respect individual needs.
- I will check out federal grants and applications more often.
- I need to do more outreach to the local level.
- I plan to share this knowledge with other county representatives within our GIT community.
- I plan to spread information on updates to federal programs.
- I learned about some projects and programs that apply to my jurisdiction and will go home and pursue opportunities.
- I am going to reconvene a long inactive GIS users group at the county level and expand the representation.
- I am going to work with federal agencies to examine “pilot” projects.

### **7.3.6 What are your next steps?**

Knowledge transfer was the common next step for workshop attendees. The majority of comments received indicate that the average workshop participant plans to synthesize the information that was learned and present it to their peers at home. This will provide both a means of keeping local, regional and state representatives aware of GIT activities and provide an avenue for engaging new partners.

Below is a sampling of the responses:

- The state representatives will huddle to determine next steps in our state context. The meeting will be scheduled over the next couple of weeks.
- I am going to take what I have learned and try to grow it locally.
- I will discuss the workshop information with staff and see if we can incorporate some remote sensing data in our existing programs.
- I will try to build GIT into my county government business plan.
- I am going to try to organize a similar state workshop and coordinate with my other IAGT workshop participants to implement activities around outreach and coordination with federal agencies and others in the state.
- Summarization of federal programs for local audiences will be useful.
- Distribute information about remote sensing projects to engender interest in the technology and grow the benefits demonstrated in our state’s RS project.
- Coordinate with the state representatives within my region to set up better coordination systems for state, regional, county, and municipal groups to communicate their needs.

### **7.3.7 Do you have any overall or additional comments?**

As was expected, this question brought out a plethora of responses ranging from the logistics of the event, to the session content, to the workshop scheduling.

Below is a sampling of these responses:

- Nice facility; conference very appropriate and informative. The workshop could have used some additional logistics planning.
- Please consider a follow up to this conference. There seems to be some momentum that has gathered here that might die if it isn't reinvigorated periodically. Periods greater than 2 years might be too long of a period.
- The workshop felt like a sort of rarified retreat with good and 'just okay' aspects: it worked fabulously because of the invitational, and carefully selected nature of the participating body.
- This conference will have value only if the local input results in policy and program changes at the federal level.

### **7.4 CLOSING WORKSHOP PANEL**

The evaluation form was not the only means for obtaining input from participants at the conclusion of the workshop. The steering committee indicated the need for a closing workshop session to provide participants with an open opportunity to voice their opinions about the workshop. This session was organized as a panel, featuring leaders from municipal, county, regional, state, and federal sectors.

#### **Municipal Governments:**

**Jim Query, GIS Director, City of Philadelphia  
Mayor's Office of Information Services, Pennsylvania**

Jim stated that outreach is very important and it is "tremendously important to come together" at events like this one. He indicated the importance of bringing messages back to city government and the need to educate key individuals. He will carry messages back, but said that he would be more empowered if the workshop was more focused on local governance issues across all governing functions.

Funding is a key issue in Philadelphia. He indicated the need for an "information transfer matrix" for outreach efforts. Another recommendation was that the federal Office of Management and Budget should work with federal agencies and others on guidelines for outreach.

#### **County Governments:**

**Randy Johnson, Commissioner, Hennepin County, Minnesota**

Randy indicated that he has been to many GIT events, but he found this one to be particularly useful because even federal agencies learned about GIT activities in their own agencies, as well as others. The federal government is very big and complex, and consolidation at the “federal and national level is essential.” Federal representatives need to work through state and local governments one at a time.

It is clear that GIS is not an “add on,” it needs to be a widely used tool “under the radar” like word processing. The workshop was valuable to reveal best practices and what doesn’t work, and also to facilitate networking.

An important question to keep asking is “what are we trying to accomplish?” and “to keep our eye on that” and the public.

### **Regional Councils:**

#### **Kathleen Lomako, Deputy Executive Director Southeast Michigan Council of Governments**

Kathleen stated that a key point of the workshop to her is that “GIT is a problem solving tool – it is a means to an end.” Accordingly, focus should not be on GIT for GIT sake, but as a tool “to help solve issues for the public.”

She expressed the need for early and continuing involvement as projects roll out. The need is not just for more meetings, but more local networks. Resources are required in terms of data and technical support to use technology to solve problems. It is expensive and complex, but can be collectively supported. Sustainability and continuous funding need to be addressed and collectively supported from the beginning, but it is important to not “bite off more than we can chew.”

An institutional framework is needed to address these issues at most, and to effectively deliver outreach at appropriate levels. It is important to address that counties differ widely, and “one size does not fit all.” Regional approaches might help. Agreements can be articulated to clarify and sustain such a framework, and ameliorate conflicts between governments.

### **State Governments:**

#### **Ted Koch, State Cartographer, Wisconsin**

Ted expressed a big “thank you” to IAGT and the workshop sponsors and organizers as the workshop is “an excellent form of outreach.” After listening to John Bossler talk about recommendations in past reports that had not been followed, he felt pessimistic; but the Red Sox just won last night for the first time in 86 years, so perhaps the “curse is broken!”

One of the things that came out of this workshop is that at IAGT's workshop four years ago it was recommended that pilot projects could be useful, even if small. Experience now is that the state remote sensing projects sponsored by IAGT have been very useful, due in part to the deliberate goal to have stakeholder involvement. A lot of interest and support has been generated, which can be shown when going back to state funders. This is another example of successful outreach.

## **Federal Agencies:**

### **Mark L. Demulder, Acting Executive Director of the Geospatial One Stop Project, USGS**

Mark also expressed thanks to IAGT for "bringing everyone together," including representatives of so many federal agencies and programs. The workshop proved that stakeholders truly "have a stake." Federal GIT outreach efforts should "dare to be adequate" in order to have the OK to move forward without having 100% of the approach defined.

"The carefully orchestrated set of participants" and selection process was "really wonderful" and very important. Outreach is about relationships and people. Federal agencies can "speak with one voice" and should focus on commonalities such as grant programs, standards, and common ways to do contracts.

The workshop program was very informative, such as in learning for the first time about the Protected Critical Infrastructure Information Program at the Department of Homeland Security. The event provided many personal benefits such as new and renewed personal connections. Feedback about the U.S. Geological Survey's realignment of functions within the new National Geospatial Programs Office was also useful. The goal is that USGS programs need to become the "geographic dial tone" so that the public can assume data are readily available.

## **Audience Feedback**

Additional input was received from other attendees. These comments are indicated below:

- There is a common tendency to revert too much to "techno speak" – "we must check ourselves." A useful approach is to act like we are talking with the media to be easier to understand.
- There should be more focus on one-on-one dialogue with elected officials.
- Federal folks need to hear more from locals and engage them in dialogue.
- Need to focus more and better on serving citizens better.
- The workshop had an ideal mix of sectors and participants and perhaps another workshop could be organized specifically for homeland security as

the “Department of Homeland Security is very balkanized” and they “need to hear the same message.”

Individual feedback provided on the evaluation forms and the remarks during the closing panel provide additional input for the workshop conclusions and recommendations discussed in Chapter 8.

## 8 CHAPTER 8. CONCLUSIONS AND RECOMMENDATIONS

GIT events are typically strong in one area, such as technology updates/training; or one sector, such as federal government level activities; or one or similar governing functions, such as transportation or natural resources. Alternatively, to help address growing concerns and opportunities, the *Northeastern Local, Regional and State RS/GIT Outreach Workshop* focused on stretching across all levels of public service, technical capabilities and all governmental sectors and functions, with specific and unique focus on GIT outreach.

IAGT was established to help advance local and state use of RS resources. IAGT acts as a “NASA ambassador” with the Nation’s 14 northeastern states through various outreach efforts including workshops, applications projects, and data acquisition. IAGT also serves as a catalyst to address broader GIT issues and concerns. This workshop was viewed as a valuable event to help fulfill these objectives, and at the same time help meet others’ needs.

Rather than addressing one specific focus group, such as GIT professionals, all discussions during the workshop sessions and informal networking opportunities benefited from the broad array of differing perspectives of the participants. Each attendee contributed to the outcome and took away a better understanding of how GIT applies to all levels of government, as well as differing governmental roles, such as policy making, enterprise and program management, and data and technology management and coordination.

The workshop design featured many components that ensured useful and lasting results:

- IAGT assembled an exemplary and engaged workshop steering committee to help guide the workshop.
- Co-sponsorship, financial support and assistance of leading representatives of key federal agencies and national associations helped to ensure excellent workshop participants and overall success.
- Nationally recognized leaders in government generally, as well as in the GIT community, spoke at the workshop, and/or helped design, manage and document results of the sessions.
- This summary workshop report is documenting presentations, findings, and recommendations to make a difference in national policy and direction concerning GIT institutionalization and outreach.

This report was prepared to inform sponsors, participants and other readers about the rationale, design, knowledge shared and recommendations derived at the workshop. Chapter 1 includes an explanation about the workshop rationale and focus. Chapter 2 provides information about conditions in American government that define and influence

public management, intergovernmental relations and outreach efforts concerning RS/GIT; GIT institutionalization direction at the federal and state level; and past recommendations of others for improvements. Chapter 3 outlines the design and approach of the workshop, including the participant selection process, specific agenda item objectives, and explanations of the individual breakout groups. Summaries of presentations in plenary and breakout sessions are provided in Chapter 4. Participant input gathered through two separate sets of breakout sessions is synthesized and analyzed in Chapters 5 and 6, as augmented by appendices. Chapter 7 provides a review of workshop evaluations, both by participants submitting completed evaluation forms and by a final wrap up panel.

This chapter summarizes the workshop results, first in terms of meeting workshop goals and other outcomes; recommendations and calls for action heard at the workshop; and finally, suggestions for future actions, including for future workshops. The report documents the knowledge and input exchanged at the workshop. It also provides unique information and insight not otherwise readily available that federal and other RS/GIT outreach providers can use in the design and implementation of outreach strategies and programs and other intergovernmental efforts.

## **8.1 WERE THE WORKSHOP GOALS MET?**

Early in 2004, representatives of the 14 Northeastern states working with IAGT over recent years determined that current remote sensing (RS) and other GIT issues warranted a coordinated discussion in the form of a workshop. A steering committee was assembled to outline the goals and discussion topics for the gathering. The committee agreed that, given a recent increase in federal efforts directed to other governments, particularly at the local level, focused attention was needed on the topic of federal and other RS/GIT outreach. It was further agreed that the focus did not need to be on technological aspects of GIT, but rather on intergovernmental concerns in a public management context to help make a unique difference at the national as well as regional level.

With these shared perspectives, the leading workshop purpose was refined to be how to improve and maximize the outcomes of federal and other RS/GIT outreach strategies and programs for state, local and regional entities. Federal GIT coordinators became interested in the workshop purpose, sensing that it would provide them with unique opportunities, benefits and outcomes. Non federal representatives shared the opinion that the workshop would provide a useful forum to interact across sectors.

Municipal, county and regional representatives in particular envisioned that the workshop design would provide a unique and needed critical mass of peers from each sector to reach representative conclusions with broader implications. A critical goal was to show the benefits of extending beyond the approach frequently used in federally sponsored meetings, groups and other events. Too often, single or a few representatives of local, regional or state entities are placed in settings with multiple

federal agency representatives. Individuals in these situations have repeatedly indicated how difficult it is to represent, much less relay or advocate all perspectives adequately to others, and despite good intentions, appropriately question the efficacy of such approaches. The workshop design was viewed as a beneficial alternative to fully engage local and regional participation.

The steering committee developed specific goals for the workshop and undertook related efforts to achieve them as described in this report. Below is a discussion of the four primary goals outlined by the committee, and the level of success in accomplishing the goals as measured by participant feedback through various forums, including the wrap-up panel and evaluation forms.

### **8.1.1 Goal one: Provide multi-jurisdictional networking and feedback opportunities**

Carefully selected attendees according to an overall workshop participant design made an important difference compared to other GIT events. The decision for the workshop to be a “by invitation only” event with funded travel support guaranteed an equally representative number of municipal, county, regional, state, and federal participants. Each sector was placed on an “equal footing” in terms of representation and critical mass. The participant design also provided that there was a critical mass of individuals representing each of these five governing sectors so that the combined perspectives could be ascertained. Results had increased reliability to a broader set of perspectives in addition to those represented.

Moreover, significant efforts were made to recruit and secure participants at differing levels of responsibility within their organizations, particularly from municipal, county and regional entities. In the end, a wide variety of participants attended the workshop, including elected officials, regional council directors and deputies, city managers, planning directors, GIS managers and other managers. Several opportunities and methods were used to ensure participants interacted with each other in differing ways to maximize networking and feedback opportunities. The diverse participant design and intermingling of participants proved to be a key factor in the overall success of the workshop. With multi-jurisdictional attendees in place, sessions and activities (described in Chapter 3) were structured in such a way that cross-sector communication was unavoidable.

Conclusion: This workshop goal was clearly met.

### **8.1.2 Goal two: Enable federal officials to hear differing local, regional, and state needs, experiences, and perspectives.**

Bringing together a diverse selection of attendees from across all levels government was the initial step in ensuring that federal officials gained knowledge on the varying

views and needs of municipal, county, regional, and state government entities. The next step was providing the appropriate forums for useful dialogue to take place.

The workshop primarily focused on federal GIT outreach efforts, but an important message was that many state governments have designed and implemented successful GIT outreach programs of their own. One of the first workshop panels provided time to explore four state GIT programs for local entities. States are commonly referred to as “laboratories of democracy.” As such, state initiatives provide many lessons learned for federal and other outreach providers, and also can be leveraged by others to maximize outreach resources and benefits.

Highlighting the cross sector exchange was the information shared in presentations and discussions in the three governing function breakout groups described in Chapter 4, and the synthesis of input analyzed in Chapters 5 and 6. Each breakout session mixed representatives of all five sectors in smaller groups of approximately 20 people to ensure all perspectives were heard. Representatives of each sector also met separately and privately the following day in their own breakout sessions to refine perspectives, and then all five sectors had an equal amount of time on the plenary program to present results. This forum proved to be invaluable to understanding differences and building the relationships required to gain further insight into the needs of municipal, county, regional, and state entities.

Conclusion: This workshop goal was clearly met.

### **8.1.3 Goal three: Determine key issues, principles, characteristics, components and other recommendations for federal and other RS/GIT outreach strategies and programs to assist local, regional and state entities.**

Various techniques were employed to both present and capture the key issues, principles, characteristics, and recommendations for RS/GIT outreach strategies to assist local, regional, and state government entities. The purpose of developing these components and traits of successful outreach programs was to provide workshop participants with knowledge, as supplied by their peers, which could be used to strengthen current and future outreach strategy and program development activities.

Breakout session presentations featured speakers from multiple sectors of government sharing valuable information on “what works, and what doesn’t work” about outreach programs. These presentations offered a platform for discussions that ultimately led to the formal process of identifying and documenting the key components and traits of successful outreach strategies. Input was provided separately through five small groups in each of the three governing functions addressed at the workshop to ensure all perspectives were heard. Enabling participants to meet separately with peers, as part of one of five governing sector discussions, provided opportunities for validation and further input. Synthesis and analysis revealed commonalities and differences, both by function and sector, as detailed in Chapters 5 and 6.

Conclusion: This workshop goal was clearly met.

#### **8.1.4 Goal four: Inform decision makers and technologists about the “why” and “how” of remote sensing from outreach experiences and successful applications.**

While the other goals focused on GIT broadly, regardless of type of technology, a particular workshop emphasis was on unique RS issues and needs. This was a particularly important focus given more challenging RS adoption issues as compared to other GIT (discussed in Chapter 1), and recent strategic RS action at the international and national levels. On February 16, 2005, 55 countries endorsed a ten year plan to implement a Global Earth Observation System of Systems (GEOSS) to coordinate and sustain Earth observing systems. A strategic plan was released on April 6, 2005 for the U.S. contribution to GEOSS, known as the Integrated Earth Observation System (IEOS) (Committee on Environment and Natural Resources/Interagency Working Group on Earth Observations 2005). Comprehensive outreach efforts are required to ensure and maximize RS usefulness to meet societal needs, and focused efforts are particularly necessary to understand and address local, regional and state issues. This workshop has and will continue to be an important help.

To address overall recognized needs for greater awareness about RS potential, workshop participants were presented with specific information about the “why” and “how” of remote sensing (RS) through key activities scheduled throughout the agenda. Presenting material about the “why information” enhanced understanding of various RS applications of practical value to state, regional and local entities. Attendees learned from peers about how RS can be done from a non-technical perspective, and the outcomes of these efforts. A key point is that benefits were described from local, regional and state perspectives.

In particular, IAGT’s 14 state and local collaborative RS application projects were summarized in a plenary session, reviewed in one of the three governing function breakout sessions, and presented in the poster review time included on the agenda. The poster review time offered participants an opportunity to speak with those involved in the projects on a one-on-one basis, and learn more about those of particular interest or applicability. A host of individual conversations encouraged exchange of additional information about the “why” and “how” of these RS applications and IAGT’s program. Additional briefings throughout the agenda highlighted RS. Presentations and subsequent discussions included lessons learned and best practice examples for all three governing functions and five governing sectors represented.

Advanced RS instruction also was provided on the workshop program. This time was designed for state participants while local and regional attendees heard introductory workshop briefings. This approach ensured that each state received important updates

about public and private sector RS advances with applicability at the state, local and regional levels that they could later share with others.

The states session also provided time for participants to provide feedback to IAGT about the RS applications projects and other programs. Participants indicated that the projects generated much local and regional interest in RS, particularly because a key program requirement was to collaborate with at least one, and preferably multiple local and/or regional entities. Only a small amount of funding support was provided for each state project as compared to competitive RS grant programs. However, participants preferred this approach because benefits were dispersed much more widely among all states and additional jurisdictions, and the value added was much greater as a result.

Conclusion: This workshop goal was clearly met.

### **8.1.5 Other Outcomes and General conclusions**

While planning the workshop, much discussion among state representatives and steering committee members focused on what could be accomplished, and to what degree the event could make a difference. More specifically, they, and likely all workshop participants, wondered if the traits that make GIT outreach efforts successful could be articulated, would that mean that federal agencies and others would incorporate such recommendations in their strategies and programs? Moreover, would federal outreach efforts become more comprehensive, synchronized and effective? And would they indeed benefit local, regional and state entities, intergovernmental relations, governing outcomes, and ultimately, the public? While difficult to isolate and measure the workshop impact, subsequent indications from many participants are that it has made a difference in several venues, and in other cases, it will take time to make such a determination. Clearly, new and useful information was generated that could be applied in various ways. Based on the material presented herein, including both formal and informal evaluations metrics, the workshop was a success.

An important workshop outcome was validation of the narrow focus on GIT outreach to local, regional and state entities, versus the broader focus on GIT collaboration or partnerships. Most of the state GIT coordinators and the workshop steering committee members are very experienced and proactive at coordinating GIT efforts across governments. More federal representatives are recognizing that they should collaborate and partner regarding GIT, and federal agencies increasingly reach out to local, regional and state entities. However, it appears that limited knowledge, mechanisms and assistance exist about federalism and how to best collaborate across the public sector, and, in turn, achieve and maximize measurable results and benefits. Growing awareness of these conditions led workshop leaders to focus on GIT outreach strategies to make a difference.

Information provided in workshop presentations reinforced the need for attention to GIT outreach. Workshop participants included representatives of eight federal organizations

(seven agencies) with GIT efforts directed toward local, regional or state entities. Information about many initiatives was provided. As remarked by Cliff Sinnott, Executive Director of the Rockingham Planning Commission in New Hampshire, "I was amazed by all the different federal (GIT) efforts . . . and wonder why they are not better known." Several additional federal agencies also reach out to local, regional and/or state entities concerning GIT on a regular basis. In fact, some workshop leaders specifically asked that certain federal organizations not be invited to the workshop because of the severity of problems associated with their GIT outreach approaches.

Though requested otherwise, many federal workshop speakers primarily described their GIT outreach programs in technical terms as summarized in Chapter 4. Policy level topics and questions were provided to federal speakers in advance as duplicated in Chapter 3. Information was requested about agency GIT outreach goals, program components, target audiences, implementation approach and provisions, and results, challenges and opportunities. While individual speakers did the best they could, many indicated strategic GIT and outreach issues were not specifically addressed or known within their agencies, though tactical GIT outreach efforts are clearly evident. In some cases, it appears that federal initiatives place the "cart before the horse" in terms of not fully understanding what is needed, and by what audience, before implementing approaches.

Some federal agencies were complimented for specific regional and/or field level GIT outreach approaches, such as in USGS, NOAA and USDA. However, others appeared to lack fundamental structural approaches to work with local, regional and/or state entities concerning GIT. To help, IAGT representatives subsequently gathered comparable information summarized in Figure 8-1 about designated federal focal points and primary partners to augment material presented at the workshop. These findings indicate several opportunities for federal agencies to synchronize and leverage GIT outreach efforts.

Federal workshop briefings were augmented by presentations about four state GIT outreach programs for local and/or regional entities. These and a growing number of state GIT outreach initiatives serve as additional programs that could complement federal efforts, in particular to more effectively reach out to the nation's many local and regional entities. Few federal speakers spoke specifically about leveraging state programs. It was commented that the current escalation of federal and other GIT outreach efforts could be reminiscent of continuing government challenges at all levels to eliminate "stovepiped" information systems. However, in this case, the "costs" are greater as outreach efforts extend beyond the federal bureaucracy apparatus to local, regional and state recipients. Changes are needed to reverse this trend.

**Figure 8-1: GIT Field Structures and Primary Partners of Selected Agencies**

<b>Federal Agency</b>	<b>Regional Organizations</b>	<b>Sub Regional Organizations</b>	<b>Federal Field GIS Focal Points</b>	<b>Primary State And/or Local Partners</b>
U.S. Geological Survey – National Geospatial Programs Office (USGS-NGPO)	4 Mapping Centers	State Liaisons	Regional and Sub Regional	State and Local Governments
U.S. Geological Survey – Water Resources Discipline (USGS-WRD)	3 Regional Offices	50 State Water District Offices	Regional, informally	State and Local Governments
U.S. Environmental Protection Agency (EPA)	10 Regional Offices	None	Regional	State Governments
U.S. Department of Housing and Urban Development (HUD)	10 Regional Offices	Approximately 70 Field Offices	No	State and Local Governments
U.S. Department of Transportation – Federal Highway Administration (DOT-FHWA)	4 Resource Centers, 3 Federal Lands Highway Divisions	50 State Offices	No	State Governments
Federal Emergency Management Agency (FEMA)	10 Regional Offices	2 Sub Regional Offices (for islands)	Regional informally	State and Local Governments
U.S. Department of Agriculture Natural Resources Conservation Services (USDA-NRCS)	3 Regions (Offices in Washington, D.C.)	50 State Offices, Approximately 2600 Offices at the County Level	State Offices	County Governments
National Oceanic and Atmospheric Administration – Coastal Services Center (NOAA-CSC)	1 Headquarters Office, 1 Field Office	None	At Headquarters	Primarily State Governments, Some Local

As detailed below, workshop participants concluded that GIT outreach is essential, and that strategies and programs must be based on full engagement and understanding of target audiences. Federal and other outreach organizations must have sustained institutional leadership, capacity, flexibility, and financial and personnel resources to accomplish outreach goals. Participants emphasized the need for greater clarity of federal GIT roles and responsibilities, and synchronization of federal GIT strategies and programs in general, as well as outreach efforts to avoid redundancies and maximize resources. Past GIT studies and conclusions were echoed that urged greater coordination, and clarification and unification of roles and responsibilities to increase accountability.

Participants expressed a new sense of recognition and urgency that federal agencies must reverse the trend toward redundant GIT efforts in general and concerning outreach. Growing federal interest and outreach to local, regional and/or state entities can be a wonderful opportunity to improve governance. Despite some differences reported by the five sectors represented at the workshop and varying needs of individual governing functions as described in Chapter 5, many common recommendations were provided, as detailed in Chapter 6 and summarized below.

Particularly useful conclusions and recommendations were formulated because of the workshop's unique focus on outreach, and due to the greater number of local and regional participants and leaders than most related events. Local, regional and state representatives called on the federal Office of Management and Budget to take on specific actions, and offered to work with federal leaders to develop a Congressional strategy and help design and implement a nationwide approach. Participants emphasized the need for enhanced attention to intergovernmental arrangements and results. By working more effectively together and with others in the public sector, federal agencies can better meet their overarching missions to serve the public. Intergovernmental GIT coordination must be elevated as a critical component of federal GIT programs in order to leverage and maximize investments, opportunities and results across all levels of government.

Repeatedly complimented was the unique combination of multiple representatives for each of the designated five sectors, and the scheduled time for them to meet alone with their peers. Much more useful content was derived about local, regional and state perspectives using this approach than single or a few non-federal representatives in typical federal GIT settings. Unique insight and input was derived in particular in the regional session due in part to the relatively large percentage of executive directors or deputies in attendance. Many of them have extensive experience with other federal outreach programs and work daily with local leaders. They urged development of an "institutional capacity framework" for GIT, and thorough understanding of these conditions at the local, regional and state level as a key requirement of successful outreach strategies.

Regional participants also recommended exploration of existing federal intergovernmental directives and outreach approaches of other federal programs that could apply to GIT. For example, they suggested that the Intergovernmental Cooperation Act of 1968 would be helpful. As summarized in Figure 8-2, the act has been used since its adoption to enhance intergovernmental connectivity and reduce redundancies in federal program delivery. The act could be used to help ensure widespread dissemination of federal information, more effective engagement, and garnering of effective policy-level local, regional and state input regarding federal GIT initiatives, as was recommended by workshop participants.

**Figure 8-2: Intergovernmental Cooperation Act of 1968: Federal Authority for GIT Outreach Across Federal, State, and Local Governments to Improve Program Results**

While enacted decades ago, Title IV of Public Law 90-577 provides a current means to institutionalize increased GIT collaboration among all levels of government and strengthen governance in the nation's federal system (known as federalism). Federal agencies are directed to consider many factors before making final decisions on their own activities and on aid they provide to states and localities. To accomplish this, the Act outlines provisions designed to:

- Incorporate national, local, regional and state viewpoints and objectives
- Improve the administration of grants to the states and others
- Ensure federal programs and lands are used consistent with local policies and comprehensive planning by affected local governments
- Provide advice from all other affected federal entities to ensure coordination
- Gain state and local insight on assistance programs

These tenets of the law are directly applicable to federal GIT coordination and outreach strategies and programs. The Act envisions federal agencies talking to each other and their intergovernmental partners to find ways of sharing data as well as financial and technical resources, and constructing mutually beneficial strategies for improving program outcomes.

The intergovernmental consultation and coordination requirements are administered through Executive Order 12372, and complement broader government wide goals and objectives, such as the Electronic Government and the Budget and Performance Integration initiatives of the President's Management Agenda.

Based on these goals and outcomes, perhaps the most important workshop conclusion is that this work must continue on a strategic and tactical level if advantage is to be gained from this initial event focused uniquely on GIT outreach. Long term results are yet to be determined in terms of the questions posed above. As indicated by Chris

Cialek, one of the state representatives and member of the workshop steering committee, “the biggest impediment to real, sustained and meaningful outreach is the inability of institutions (at all levels) to perceive how their lack of cooperation negatively affects us all.”

Leadership and institutional attention and change are required, but remain challenging. The results of this workshop can help realize benefits in terms of more effective and efficient deployment of GIT and outreach strategies and programs, but can also extend to generating broader governance outcomes. As indicated by workshop speaker Commissioner Randy Johnson, GIT provides unprecedented understanding of reality. Overlaps and conflicts in governmental missions and programs also can be revealed.

The transformational impact of GIT on governmental missions, institutional roles and responsibilities, and intergovernmental arrangements are beginning to emerge. Broader governance and financial trends encourage attention to these matters. The workshop recommendations can help make a difference in national policy and direction in respect to GIT institutionalization and outreach.

## **8.2 Summary of Workshop Input and Findings**

Synthesizing the volumes of feedback and input into key recommendations was a difficult process because of the diversity of workshop attendees, presentations, and discussions. Below is a summary of the current calls for action and positive examples, followed by recommended traits of successful GIT outreach strategies and programs, and concluding with lessons learned and suggestions for future workshops.

### **8.2.1 Calls for Action**

The current state of Congressional calls for action related to coordination of GIT activities, and highlights from the above findings, form the basis for specific action items related to RS and other GIT outreach.

During the past few years, Congress has exhibited increasing interest in national GIT activities. The Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census of the House of Representatives Committee on Government Reform requested that the U.S. General Accountability Office (GAO) study the coordination of GIT assets and report back to the subcommittee (U.S. General Accounting Office 2004). Their findings point to a series of action steps:

- A new strategic plan is needed to help coordinate resources and activities. Better procurement coordination could be a critical component of the strategic plan.
- Federal agencies must comply with the Office of Management and Budget (OMB) direction to coordinate GIT investments. This includes improving the budget processes to track spending on GIT activities.

- OMB oversight needs to be modified to effectively identify or eliminate duplication in GIT resources and activities.
- Structural adjustments to align federal efforts related to GIT activities must be an option.
- Increase coordination with local and state governments, particularly to eliminate unnecessary data procurement and redundant data requests.

Furthermore, the Subcommittee on Environment, Technology and Standards of the House of Representatives Science Committee reinforces many of the needed action items listed above and as indicated in Chapter 3, and cites several other action steps needed with a specific attention to RS:

- The federal government must have a better understanding of local and state informational needs to help to address them. Local and state needs are not well understood or advanced in terms of overall data plans, particularly for satellite programs.
- Satellite and data investments must be judged in terms of understanding the most important information needs and then determining corresponding financial responsibilities. Opportunities must be made for local and state input to be factored into the decision making processes.
- Ensure that useful satellite related data and projects continue, and determine how they will be institutionalized and funded in the long term to reliably meet operational government needs, including at the local and state levels.

Congress and Executive branch departments and agencies are in agreement that cooperation and collaboration with state and local governments are essential to reduce GIT redundancies across all levels of government. Progress, however, will be determined by agency actions, which can be difficult to design and implement. Discussions during the workshop revealed positive examples.

Another call for action is that USGS has recently reorganized their national GIT programs into one office, the National Geospatial Programs Office (NGPO). Reinvigorated efforts are underway to create mutually beneficial relationships with others. They are engaging stakeholders, such as municipal and county governments, in the program planning process to assure that outreach strategies correspond to the needs of their prospective partners. Other critical components of the NGPO outreach strategy is the designation and empowerment of individual state liaisons to work with stakeholders in one or a few states. Other positive examples of federal outreach include NOAA's dedicated outreach organization for local and state governments, known as the Coastal Services Center, and the U.S. Department of Agriculture's extension program.

Reorganizations and realignment processes like that which USGS is currently undertaking can seem like difficult options to more effectively conduct outreach efforts and implement key programs. It is not easy work to coordinate with many stakeholders

spread across multiple sectors, but it is necessary to build relationships with others that will determine the success or failure of a program.

This report offers evidence that well thought out and structured outreach programs do lead to success. Captured in Chapters 4, 5, and 6 are countless examples of outreach strategies in action. Some have had limited success and some were tremendous victories; but each example provides outreach strategists with new visions to carry into planning processes and bring about tangible improvements in the way services are delivered and programs are administered, both within and among agencies.

## **8.2.2 Recommendations from the Workshop**

The workshop program provided plenary presentations complemented by two sets of breakout sessions. The first set of sessions were held for most of a day and included presentations and facilitated dialogue focused on three critical governing functions:

- Water and Other Natural Resources Management
- Planning and Community Growth Management
- Homeland Security and Disaster/Emergency Management

Discussions were held during each of these three sessions to identify essential traits of successful GIT outreach strategies and programs. The following list of traits was subsequently generated from a synthesis of the findings in all three sessions:

- Defined Measures
- Incentives
- Sustainability
- Early User Engagement
- Meaningful Interaction
- Local Training
- Build Mission Capacity
- Flexibility
- Active Champions
- Effective Communications
- Unified Federal Voice
- Simplicity

This list was evaluated the following day within the five governing sector breakout sessions through facilitated discussions. Participants indicated their level of support for each of the initial 12 traits listed above, or added additional traits, as did attendees in the municipal, county and regional sessions. Subsequent synthesis within and among these peer groups yielded a series of recommendations aimed at improving intergovernmental GIT collaboration and outreach efforts. Below is a summary of the recommendations synthesized from the presentations and participant input derived from Chapter 6. Some differences that stood out by governing sector or function, as discussed in Chapter 5, are also highlighted below.

### **8.2.2.1 Overall GIT Outreach Vision and Principles**

Recognize all governments share the common mission, and must work together to better serve the citizenry. Technology or data cannot be the goal. However, GIT can be

advanced as a uniquely effective transformational tool and resource for modeling reality and addressing common issues and program redundancies across agencies and governments.

Seek to understand and “extend the reach of outreach” to the nation’s many and varying players and needs at local, regional and state levels, recognizing federalism complexities and opportunities to create customized, multifaceted approaches to address “have-nots” as well as others. Participants in the Homeland Security and Disaster/Emergency Management breakout session particularly indicated the need to reach out to a wider set of localities including those with limited capabilities.

Recognize and address the full requirements and costs to institutionalize GIT within local, regional and state organizations, and make sure that public policy and management issues are addressed before tactical matters. This point was particularly emphasized by county participants.

Elevate outreach as a priority for planning and funding in the early stages of GIT program development.

Engage “early and often” to develop “bottom-up” and continuous outreach approaches ensuring broad, meaningful and cost effective audience participation to define GIT outreach needs, goals and strategy.

Establish and maintain a “unified federal voice” and consistent federal message within and across agencies at national, regional and field levels.

Strengthen focus on improving, using, investing in and sharing local data whenever possible, with less emphasis on software and technology development.

#### ***8.2.2.2 GIT Outreach Strategy Components***

Use multi-tiered approach to secure sustained support by elected and policy level officials, managers, and staff with mission and technical responsibilities.

Establish specific, well-defined and structured GIT outreach program goals, desired accomplishments and performance measures, such as (1) inclusive and well known process, (2) effective stakeholder participation, (3) extensive two-way communication, (4) stakeholders’ timely access to decision makers and feedback, (5) satisfaction with the process, and (6) influence on results.

Synchronize federal government GIT approaches to conduct more effective GIT outreach, including within and across agencies, and particularly in deployment at regional and field levels. The helpfulness of having designated federal GIT and outreach focal points and contacts throughout the country was repeatedly expressed, though

such approaches do not necessarily exist in all agencies with GIT outreach efforts as indicated in Figure 8-1

Understand and help strengthen local, regional and state capacity and capability, particularly to help address policy needs and accomplish local governing and business missions, and, in turn, increase relevance, participation and sustainability. The need to both understand and help build institutional capacity was one of the most common themes expressed at the workshop. Regional participants suggested the need to develop and use an “institutional capacity framework” to help design GIT outreach strategies. They also recommended that the Intergovernmental Cooperation Act of 1968 be used to aid GIT outreach efforts, as described above and summarized in Figure 8-2. Participants in the Water and other Natural Resources Management session suggested that a “cross level business process” be developed to help reveal how GIT can improve governmental effectiveness and outcomes across governments.

Ensure effective and meaningful communications and interactions by articulating messages and documenting results using “local government language” and documenting impact of input provided by target audience.

Nurture articulate “champions” at the policy level in both provider and recipient organizations to support peer relationships and provide exposure and guidance.

### ***8.2.2.3 GIT Outreach Program Characteristics, Elements and Resources***

Establish integrated intergovernmental GIT approaches that provide multilateral and multifaceted benefits, employ federalism principles and proven intergovernmental approaches, and leverage intermediaries at state, regional and county levels.

Dedicate and sustain financial resources for GIT outreach with meaningful and sustained incentives for participation. Regional attendees recommended that funding must address all GIT implementation requirements, including the need to support administrative costs—likely based on their experiences with various federal grant programs. And, based on their experiences as the recipients of most federal GIT outreach programs to date, and as intermediaries to encourage local and regional participation in federal programs, the need for incentives was a top recommendation of state participants.

Dedicate human resources for GIT outreach that expand on programs at USGS, NOAA and USDA, and ensure that other staff can help implement outreach goals.

Leverage existing GIT outreach organizations, channels, structures, programs and events to create economies of scale.

Exercise caution when implementing pilot projects to avoid marginalizing benefits and risking ill-will that can arise with competitive funding. Many concerns were expressed

about pilot project experiences, particularly by regional attendees and participants in the Planning and Community Growth Management session.

Implement effective education, training, and update programs with others at local levels, including more workshops such as this one. This was another frequent recommendation, with Planning and Community Growth Management participants encouraging that the content of such training programs ties directly to local functions to maximize benefits and increase capacity. Participants in the Homeland Security and Disaster/Emergency Management breakout session suggested that a similar workshop be held with their session focus to help address the need for federal agencies to better understand other government sectors.

Develop and disseminate educational products to demonstrate GIT use and benefits to decision makers and the public. Municipal participants identified several practical recommendations for GIT outreach providers that would be helpful for multiple sectors.

Learn from other outreach programs to be sustainable, transferable and flexible.

#### ***8.2.2.4 Other Key GIT Priorities to Aid Outreach***

Federal agencies should seek help from intergovernmental partners to craft and implement Congressional strategy to obtain additional resources. Regional participants originated this recommendation, and encouraged federal agencies to be more proactive to work with other sectors to develop Congressional support. They also suggested that regional leaders could be effective advocates in this regard, and could also help to coalesce local participants to aid in this effort. The Wisconsin presentation at the workshop revealed the importance of broad stakeholder support to achieve legislative attention and action.

The U.S. Office of Management and Budget should develop and support metrics for cross agency and cross governmental coordination and collaboration, and encourage procurement coordination within and among governments.

All should:

Be proactive about providing input about RS and other GIT policy to elected and other public officials, including at the federal level.

Revisit and reconsider implementation of recommendations in past reports such as *Geographic Information for the 21<sup>st</sup> Century* by the National Academy of Public Administration, several National Research Council reports, and other past reports dating back to 1936.

Initiate and implement nationwide and statewide programs to develop and maintain key data sets with sufficient accuracy and precision to ensure local government utility and to provide for cost sharing across levels of government.

Inventory and share information about existing federal, state and other GIT outreach and other programs.

### **8.2.3 Lessons Learned and Suggestions for Future Workshops**

The workshop steering committee and organizers faced many challenges. Diverse goals impacted the participant selections and the design, structure and content of the workshop. Feedback from participants is detailed in Chapter 7, including responses to evaluations and comments by panelists and others during the workshop wrap up session. Several attendees also provided verbal input during and after the workshop.

Section 1 of this chapter highlighted workshop results and conclusions in relation to its focus and goals. Feedback from participants indicated that future workshops would be of great value. Future workshops can learn from this event to help refine goals and objectives and design a corresponding program. This experience also can be used to determine speaker needs, particularly outside of the GIT arena, and refine and even broaden the participant list. Detailed below are suggestions for improving participant design, programmatic structure of potential future workshops, and subject matter content.

Participants indicated that one of the most positive aspects of the workshop was the unique and carefully crafted set of participants representing many governing sectors and levels. Networking with individuals with so many different backgrounds and perspectives was found very rewarding and desirable. However, this situation posed a challenge as well. Some attendees came from very large organizations, while others were from small ones. Participants ranged from organizational leaders to GIT practitioners. Some participants, particularly many state attendees, had known and worked with each other for years and were familiar with federal initiatives, while others did not know more than a handful of other attendees and needed to learn more about basic GIT approaches at the federal level. Participants also had many differing experiences, backgrounds, perspectives and expectations about the potential benefits to be realized by attendance. These differences impacted program structure and content, and were reflected in the participant evaluations. For example, some attendees desired more technical content while others indicated there was too much technical focus.

Some specific suggestions were offered about speakers and attendees, particularly when dealing with non-technical goals such as the development of outreach strategies. Speakers with governing experiences from outside the GIT arena would provide new perspectives to help spur discussions in new directions. For example, more speakers

with backgrounds in outreach from other arenas and subject matter experts would be helpful.

Representatives of seven federal agencies participated in the workshop, but participants identified additional federal organizations that should be involved in such a gathering focused on GIT outreach. Organizations suggested to be included were:

- U.S. Census Bureau
- USDA Cooperative State Research, Education and Extension Service, NOAA National Sea Grant Office
- NASA National Space Grant College and Fellowship Program
- US Army Corp of Engineers

A lesson learned was to more carefully refine the definition of desired participants, and more actively recruit them. Several options are available. A workshop focus could exclusively be placed on general policy and management issues, and thus attract individuals able to contribute in this arena. Attendees could be expected to arrive with some basic understanding of GIT policy issues and federal outreach efforts so introductory topics could be avoided. More program management and subject matter experts could be helpful. The appropriate mix and number of participants should also be addressed. A caution is that much work was required for this workshop and typically is required to attract policy and management level individuals if desired.

In terms of programmatic structure, future workshops should have fewer hours per day devoted to formal sessions. While there was a need to provide sufficient program content to encourage invitees to attend, more informal networking and “down” time was needed. This was a particular point mentioned by evaluators. They indicated the need for more time for rest and the ability to attend to non-workshop matters. While the facilities were found to be quite accommodating, the fact that the workshop was held away from a hotel was identified as constraining by some attendees. Lengthy work days also had a negative impact on the quality of discussions.

Design of the program content required careful balance between the mixed workshop goals of providing a learning experience as well as deriving useful input. The focus on outreach was affirmed as an appropriate topic for the workshop, but the perceived need to ensure participants had a learning experience meant the workshop program was too full. Content desires ranged from policy and public management interests to technical advances and experiences. Evaluators indicated that the content was valuable, but that too much was attempted in the time available. Too much formal content also made it difficult for attendees to engage in informal dialogue with other workshop participants, which was cited as a needed component in the learning process. In future workshops, perhaps the goal of providing a learning experience should be scaled back to provide more attention to garnering and refining input.

A particular problem was that several speakers did not address the policy matters requested of them, yet used more time on the program than they were allocated. This was a challenge for breakout session facilitators, especially given the large number of presenters in each session. Many breakout session discussions, while indicated as having useful content, were not sufficiently contained, and carried on well beyond allocated timeframes. The goal of providing feedback opportunities also was compromised by too many presentations in each session block. This led to time management challenges that resulted in less time for detailed discussions on the pertinent topics being presented. A lesson learned from this workshop is to limit the number of speakers and more assertively require them to follow directions about content and designated time allotments and schedules. However, this goal requires that sufficient effort is made in advance to interact closely with each speaker and ensure these goals are met. Another means for adding more time and opportunity for goal related discussion could be obtained by spending less time introducing topics and summarizing results.

A lesson learned is that expectations about desired and realistic content should be more clearly defined before the workshop, and balanced with what is necessary to recruit appropriate participants. The attempt to meet diverse and multiple goals with the same program was perceived by some attendees as meaning that the workshop was not sufficiently focused. Goals and desired workshop outcomes need to be clearly articulated before the workshop and reinforced during the event.

Target audiences for workshop deliverables, such as recommendations and reports, also should be more clearly articulated. With the wide variety of participants, from elected officials and policy makers to GIT practitioners, the need for clear goals and outcomes is heightened due to the lack of uniform familiarity with the subject matter among the attendees. This also makes it imperative that presenters understand this context and follow requests about the content of their talks.

Future workshops should build upon the foundation constructed from the results reported therein. Several options exist for focus and design of follow up events. A systems engineering approach could be used to design a GIT outreach program developed from municipal and county government programs upward to regional, state and national levels. The strategic objectives for such an exercise might include focus on one specific functional area, preferably one of the three application groups utilized for this workshop. Suggestions were made that homeland security and emergency/disaster management would be a particularly useful topic, as related federal agencies have a strong need to learn from other sectors in this regard. A tactical outcome might be the definition of system requirements and performance measures, as well as the design of an organizational construct developed with a view toward sustained effort over time.

Many additional topics could be addressed in subsequent workshops to build upon this event. Attention might be given to address specific institutional capacity requirements, educational and training elements, incentives, public finance, collaboration skills, and

other program components to achieve a higher and more evenly distributed level of GIT capacity at all levels of government. This in turn could lead to greater government effectiveness and efficiency, better service to all citizens, and the utilization of ever improving technology to help address and solve a range of societal, economic and environmental issues.

In summary, workshop attendees indicated their participation was useful. The increasing plethora of GIT investments and outreach efforts to local, regional and state entities is becoming more widely recognized. The need to synchronize and unify GIT initiatives, particularly intergovernmental outreach efforts, has never been greater than today. Greater public policy and management attention is clearly required to address public sector needs, as recommended in past meetings and reports. RS and other GIT are increasingly recognized at policy levels as crucial resources to help all governments deliver services and administer programs, but institutional and implementation challenges remain. Workshop participants indicated a new sense of urgency, recognizing that opportunity exists now—most recently spurred by growing Congressional interest and administrative reorganization at USGS. New opportunities also exist as international plans emerge to implement a Global Earth Observation System of Systems (GEOSS), and to address needs here in the United States via the Integrated Earth Observation System (IEOS).

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## **ACRONYMS**

ADDEI	Assessment, Design, Development, Evaluation, Implementation
CEO	Chief Executive Officer
CSC	Coastal Services Center (NOAA)
CSREES	Cooperative State Research, Education and Extension Service
DHS	Department of Homeland Security
DOT	Department of Transportation
EPA	Environmental Protection Agency
EPINet	Emergency Preparedness Information Network
FEMA	Federal Emergency Management Agency
FGDC	Federal Geographic Data Committee
FLDSS	Finger Lakes Decisions Support System
FOIA	Freedom of Information Act
GAO	General Accountability Office
GEOSS	Global Earth Observation System of Systems
GI	Geospatial Information
GIS	Geographic Information Systems
GIT	Geographic/Geospatial Information Technologies
GOS	Geospatial One Stop
GPS	Global Positioning System
HSDE	Homeland Security and Disaster/Emergency Management (Breakout Group)
IAGT	Institute for the Application of Geospatial Technology
ICMA	International City/County Management Association
IEOS	Integrated Earth Observation System
IMAAC	Interagency Modeling and Atmospheric Assessment Center
IUPUI	Indiana University Purdue University Indianapolis
LLNL	Lawrence Livermore National Library
MPO	Metropolitan Planning Organization
NACo	National Association of Counties
NAPA	National Academy of Public Administration
NARAC	National Atmospheric Release Advisory Center
NARC	National Association of Regional Councils
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NATaT	National Association of Towns and Townships
NEAF	Northeast Affiliates Group
NEMO	Nonpoint Source Education for Municipal Offices
NGO	Non-governmental Organization
NGPO	National Geospatial Programs Office
NJMAPP	New Jersey Mapping Assistance Partnership Program
NLC	National League of Cities
NOAA	National Oceanic and Atmospheric Administration
NPGO	National Geospatial Programs Office
NSDI	National Spatial Data Infrastructure
NSGIC	National States Geographic Information Council
NSGO	National Sea Grant Office
NYS CSIC	New York State Cyber Security and Critical Infrastructure Coordination
OMB	Office of Management and Budget
PCG	Planning and Community Growth (Breakout Group)
PCII	Protected Critical Infrastructure Information
RFP/RFQ	Request for Proposal/Request for Quotation
RS	Remote Sensing
SEMCOG	Southeast Michigan Council of Government
SLR	State, Local, Regional
SWIMS	State Incident Management System
TRMM	Tropical Rain Moisture Measurement
US HUD	United States Department of Housing and Urban Development
USDA	United States Department of Agriculture

***The Institute for the Application of Geospatial Technology***

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USGS	United States Geological Survey
WIA	Workforce Investment Act
WLIP	Wisconsin Land Information Program
WNR	Water and Natural Resources (Breakout Group)
WRD	Water Resources Discipline

**APPENDIX A WORKSHOP AGENDA**

**Northeastern Local, Regional and State  
Remote Sensing/Geographic Information Technology  
Outreach Workshop**

**Workshop Program**

**Monday, October 25, 2004**

- 5 - 10 PM            **Early Workshop Registration**
- 6 - 9 PM            **Dinner on Your Own (and informal meet and greet area)**
- Optional Seward House tour at 7 PM**  
**Leave Holiday Inn at 6:30 PM**  
**(within walking distance to Holiday Inn)**

**Tuesday, October 26, 2004**

*The Lodge at Welch Allyn*

- 7:00 AM    **Transportation from Holiday Inn to  
The Lodge**
- 7:30        Continental Breakfast
- 7:30        Workshop Registration  
             -5 PM
- 8:00        **Plenary Workshop Welcome**  
*Robert Brower, Chief Executive Officer*  
Institute for the Application of Geospatial Technology (IAGT)
- 8:30-11:45 **Concurrent Morning Sessions**

**Session 1: Municipal, County and Regional Representatives**

- 8:30        **Session Overview**  
*Kevin Neimond, GIS Program Manager*  
National Association of Counties (NACo)
- 8:40        **Paired Participant Introductions**

- 9:15      **Key Concepts, Players, and Developments  
in Remote Sensing**  
*Tim Haithcoat*, Program Manager  
Missouri Spatial Data Information Service, University of Missouri
- 9:30      **Key Federal Remote Sensing / GIT Organizations**  
**U.S. Geological Survey (USGS):  
New National Geospatial Programs Office**  
*Milo Robinson*, Framework and Cooperating States Coordinator  
Federal Geographic Data Committee  
*Leslie Wollack*, Outreach and Communications Manager  
Geospatial One-Stop Project
- 9:45      **National Aeronautics and Space Administration (NASA):  
Applications Program**  
*Martin Frederick*, Deputy Program Director  
Applications Division, NASA
- 10:00     **National Oceanic and Atmospheric Administration (NOAA):  
Coastal Services Center Overview**  
*Nicholas Schmidt*, Chief  
Coastal Information Services Branch, NOAA
- 10:15     Break
- 10:30     **Association Updates:  
GIT Initiatives for Local and Regional Entities**  
National Association of Counties  
*Kevin Neimond*, GIS Program Manager  
  
National States Geographic Information Council  
*William Johnson*, NSGIC Past President and Manager of GIS and  
Critical Infrastructure Coordination, New York State Office of Cyber  
Security and Critical Infrastructure Management  
  
American Planning Association  
*Peter Hawley*, Outreach Coordinator  
Other Associations - *all participants*
- 11:20     **Round Robin Discussion and Q&A:  
Key Local and Regional Issues and Concerns to Address  
during the Workshop**

## **Session 2. State Attendees: Remote Sensing Updates and**

## **IAGT Northeast Affiliates (NEAF) Discussion**

- 8:30      **Session Overview**  
*Emily Constantine Mercurio*  
Remote Sensing Engineer and Project Manager, IAGT
- 8:50      **Participant Introductions**
- 8:55      **Technical Remote Sensing Developments and Techniques**  
*Jeff Liedtke*, Director, Sales, Applications and Solutions, Digital Globe
- Remote sensing applications and new research
  - Data fusion applications and other technical “tips”
  - New technologies and satellites
- 9:35      **Federal Remote Sensing and Land Use/Land Cover Developments and Opportunities**  
*Tim Haithcoat*, Program Manager  
Missouri Spatial Data Information Service, University of Missouri
- 10:15      Break
- 10:30      **IAGT Activities Update and Workshop Purpose**  
*Robert Brower*, Chief Executive Officer, IAGT  
*Matthew Mercurio*, GIT Specialist, IAGT
- 11:00      **Opportunities for the Future and Feedback** – *all participants*  
*Robert Brower*, Chief Executive Officer, IAGT  
*Dana Piwinski*, Chief Operating Officer, IAGT
- 11:45      **Lunch and Introductions**  
Tables organized by neighboring states with signs to encourage dialogue, moderated by state affiliate representatives
- 1:00      **Welcome and Introductory Remarks**      *Auditorium*  
**Workshop Goals, Opportunities, Expectations, and Plans**  
*Robert Brower*, Chief Executive Officer, IAGT
- 1:15      **Panel: Federal Remote Sensing / GIT Outreach Providers and Strategies — What’s New**  
Moderator: *Dr. John D. Bossler*, Consultant and former Director Center for Mapping, The Ohio State University  
*Mark L. Demulder*, Acting Executive Director Geospatial One Stop Project, USGS  
*Martin Frederick*, Deputy Program Director Applications Division, NASA

*Dr. Bruce A. Davis*, Director, Interagency Modeling and Atmospheric Assessment Center, Science and Technology Directorate  
Department of Homeland Security  
*Nicholas Schmidt*, Chief, Coastal Information Services Branch  
Coastal Services Center, NOAA

3:00 Break

3:15 **Panel: State Remote Sensing and GIT Efforts to Assist Localities and Regional Entities**

Moderator: *Dr. Lisa Warnecke*, President, GeoManagement Associates  
*Ted Koch*, State Cartographer, Wisconsin

*Nick Hutton*, Project Manager, Emergency Preparedness Information Network, New Jersey Office of GIS

*Christian Jacqz*, Director, MassGIS, Massachusetts

*Stuart Davis*, Administrator, Enterprise Shared Services, Ohio Office of Information Technology

4:45 **Wrap up for the Day and Introduction to IAGT State Remote Sensing Applications Projects**

*Robert Brower*, Chief Executive Officer, IAGT

*Matthew Mercurio*, GIT Specialist, IAGT

5:15 **Reception and Poster Session**

Remote sensing application posters and sponsor displays

6:15 Dinner

**Welcome to Central New York**

*Dr. Dennis Golladay*, President, Cayuga Community College

7:15 Dessert and Coffee *Lodge Auditorium*

**Congressional Update**

*Eric Webster*, Staff Director, Subcommittee on Environment, Technology, and Standards; House Science Committee

**Presentation: Views from Mars**

*Diane Bollen*, Athena Project Coordinator, Cornell Astronomy

8:30 Transportation back to Holiday Inn

**Wednesday, October 27, 2004**

7:00 AM **Transportation from Hotel to Lodge**

7:30 Continental Breakfast

7:30 AM Workshop Registration  
– 5 PM

8:00 **Introductory Session**

*Robert Brower*, Chief Executive Officer, IAGT

- Introduce new attendees
- Review yesterday's progress and plans for the day
- Summary results, needs, recommendations from IAGT State Remote Sensing Workshops concerning outreach strategies and programs
- Summary of IAGT / NACo partnership accomplishments and benefits
- Related findings of others' investigations and workshops specifically concerning RS and other GIT outreach for state, local and regional entities
- Purpose, goals and instructions for three breakout sessions

8:30 **Concurrent Governing Function Breakout Sessions**

**Blue Group: Water and other Natural Resources Management**

Breakout Leader: *Kevin Neimond*, NACo

8:35 **Introduction to Breakout Session: Importance of Topic, Participant Introductions, Scope, Goals for Day**

8:45 **Breakout Part 1: Lessons Learned from the IAGT State Remote Sensing Projects**

Connecticut – *Sandy Prisloe*

Indiana – *Robert Weaver for Jill Saligoe - Simmel*

Michigan – *Robert Surber*

Pennsylvania – *Dr. Jay Parrish*

Vermont – *David Brotzman*

10:15 Break

10:30 **Breakout Part 2: Remote Sensing/GIT Outreach Strategies and Programs**

USDA Natural Resources Conservation Service - *Reed Sims*, New England GIS IRT Specialist

USGS Water Discipline - *Rafael "Willie" W. Rodriguez*, Chief, New York District

NOAA Coastal Services Center - *Mary Culver*, Physical Scientist,  
Coastal Remote Sensing Program

Wisconsin Department of Natural Resources - *Dreux Watermolen*,  
Chief, Science Information Services

### **Green Group: Planning and Community Growth Management**

Breakout Leader: *Martin Roche*, Canin Associates, Inc.

8:35        **Introduction to Breakout Session: Importance of Topic,  
Participant Introductions, Scope, Goals for Day**

8:45        **Breakout Part 1: Lessons Learned from the IAGT State  
Remote Sensing Projects**

Massachusetts – *Mark Maloy* for *Christian Jacqz*

New Jersey – *John Peterson* for *Bruce Harrison*

Rhode Island – *Nancy Hess*

Wisconsin – *Ted Koch*

10:15      Break

10:30      **Breakout Part 2: Remote Sensing/GIT Outreach Strategies  
and Programs**

US Department of Transportation  
*Sherry Ways*, Transportation Planner

US Environmental Protection Agency  
*Adhir Kackar*, Environmental Protection Specialist

US Department of Housing and Urban Development  
*David Chase*, Economist and Manager of Geographic Information  
Analysis

NOAA Coastal Services Center  
*Amanda Rutherford*, Land Use Planner

### **Red Group: Homeland Security/Disaster and Emergency Management**

Breakout Leader: *Alan Leidner*, Booz Allen Hamilton

8:35        **Introduction to Breakout Session: Importance of Topic,  
Participant Introductions, Scope, Goals for Day**

8:45        **Breakout Part 1: Lessons Learned from the IAGT State  
Remote Sensing Projects**

Maine – *Misty Greene* for *Dan Walters*

Minnesota – *Christopher Cialek*

New Hampshire – *Fay Rubin*

New York – *William Johnson*

Ohio - *Stuart Davis*

10:15 Break

10:30 **Breakout Part 2: Remote Sensing/GIT Outreach Strategies and Programs**

US Department of Homeland Security – *Fred Herr*, Program Manager  
Protected Critical Infrastructure Information Program

US Geological Survey – *Mark Demulder*, Acting Executive Director  
Geospatial One Stop Project

US Department of Homeland Security – *Jo Jordon*, Operations/GIS  
Specialist, Response and Recovery (Region 2)

Federal Emergency Management Agency

US Department of Homeland Security – *Zachary Usher*,  
Natural Hazards Program Specialist, Mitigation (Region 2),  
Federal Emergency Management Agency

12:00 **Lunch with Speaker: Perspectives of a Local Elected Official**

*Commissioner Randy Johnson*, Hennepin County, Minnesota  
Past President, National Association of Counties

1:00 PM **Workshop-Wide Discussion:  
Key points from morning breakout sessions**

1:30 **Workshop-Wide Presentation:**

**Lessons Learned from Non GIT Federal Outreach Programs for State, Local and Regional Entities**

*Dr. Bruce McDowell*, Academy Fellow and Project Director  
National Academy of Public Administration

2:00 **Reconvene Breakout Sessions**

**Breakout Part 3: Local, Regional and State Perspectives on Outreach Strategies and Programs in GIT and other Programs: “What Works and What Doesn’t”**

**Blue Group: Water and other Natural Resources Management**

*Kate Hackett*, Senior Planner, Tompkins County,  
New York and *David Carr*, IAGT

*Janis Bobrin*, Drain Commissioner, Washtenaw County, Michigan

*Jon Giles*, GIS Coordinator, City of Portland, Maine

**Green Group: Planning and Community Growth Management**

*Nancy Hess*, Principal Environmental Planner, State of Rhode Island

*Christina Tait*, Deputy City Manager, Hudson, Ohio

*Percy Dougherty*, Commissioner, Lehigh County, Pennsylvania  
*David Fricke*, Executive Director, Minnesota Association of Towns  
*Kathleen Lamako*, Deputy Director, SEMCOG, Michigan

**Red Group: Homeland Security/Disaster and Emergency Management**

*Christian Jacqz*, GIS Director, State of Massachusetts  
*Jim McConnell*, GIS Director, New York City Office of Emergency Management  
*Nick Hutton*, Project Manager, Emergency Preparedness Information Network (EPINet), New Jersey  
*Tom Wieczorek*, City Manager, Ionia, Michigan  
*Michele Boomhower*, Executive Director, Lamoille County Planning Commission, Vermont

- 3:15 Break
- 3:30 **Breakout Session Part 4: Facilitated Discussion on Key Needs, Issues, Characteristics, Opportunities, and Recommendations about Successful Local, Regional and State RS/GIT Outreach Strategies and Programs**
- 4:45 **Demonstrations of Decision Support Systems**
- 5:30 *Travel to The Sherwood Inn, Skaneateles*
- 6:00 Reception and Dinner
- 8:30 Transportation back to Holiday Inn

**Thursday, October 28, 2004**

7:00 AM **Transportation from Hotel to Lodge**

7:30 Continental Breakfast

8:00 **Review of Yesterday's Work and Plans for the Day**

*Robert Brower, Chief Executive Officer, IAGT*

8:10 **Breakout Session Reports from Wednesday  
Governing Function Groups**

Commonalties, Differences, Recommendations, and Priorities  
Based on Governing Functions, Q&A

**Purpose, Goals and Instructions for Concurrent  
Governing Sector Breakout Sessions**

*Dr. Lisa Warnecke, President, GeoManagement Associates*

9:15 **Concurrent Governing Sector Breakout Sessions**

*Attendees to convene with other participants from their sector.  
Facilitators to be announced.*

- **Municipal**
- **County**
- **Regional**
- **State**
- **Federal**

Facilitated discussion of key, unique and priority needs, issues, characteristics, opportunities and recommendations about successful local, regional and state RS/GIT outreach strategies and programs—to be determined by attendees as applicable for their governing sector based on individuals' experiences and workshop, including:

- Key lessons learned and critical success factors derived from experience and learned at workshop to ensure successful outreach initiatives for each governing sector
- Unique concerns, needs, opportunities for governing functions and applications areas discussed previous day
- Critical matters and priorities for each governing sector to ensure successful outreach initiatives

- Recommendations and priorities for strategies, program components and actions for organizations with RS and other GIT outreach efforts as appropriate for each governing sector

10:15 Break

10:30 **Breakout Session Reports from Governing Sector Groups**

Commonalties, Differences, Recommendations, and Priorities Based on Governing Sectors

11:30 **Wrap Up Panel – Responses to Findings and Recommendations**

- Where can and do we go from here?
- Sending a message to Washington, D.C.

*Selected speakers to be determined, all workshop participants*

12:15 PM **Lunch and Closing Session**

**Closing Comments and Feedback by Workshop Participants**

1:30 **Workshop Concludes**

Transportation to Airport or Holiday Inn

**APPENDIX B ATTENDEE LIST**

<b><u>First Name</u></b>	<b><u>Last Name</u></b>	<b><u>Job Title</u></b>	<b><u>Organization</u></b>	<b><u>Government Level</u></b>	<b><u>Breakout</u></b>
Larry	Adams	Planner	Town of Sturbridge	Municipal	Homeland Security
Steve	Ambrose	Program Manager for Homeland Security	NASA Applied Sciences Program	Federal	Homeland Security
Roger	Barlow	National Spatial Data Infrastructure Liaison for NJ, DE, MD, DC	U.S. Geological Survey	Federal	Community
Mark	Becker	Geospatial Section Manager	Center for International Earth Science Information Network	Federal	Water
Lynn	Bjorklund	National Spatial Data Infrastructure Liaison for CT, MA, ME, NH, RI, VT	U.S. Geological Survey	Federal	Water
Janis	Bobrin	Drain Commissioner	Washtenaw County	County	Water
Greg	Bonynge	Geospatial Extension Specialist	University of Rhode Island	State	Water
Michele	Boomhower	Executive Director	Lamoille County Planning Commission	Regional	Homeland Security
John	Bossler	President	John D. Bossler and Associates	Federal	Homeland Security
Kirk	Brethauer	GIS Manager	The Southwestern Pennsylvania Commission	Regional	Community
Dave	Brotzman	Executive Director	Vermont Center for Geographic Information, Inc.	State	Water
Robert	Brower	Chief Executive Officer/Chair	IAGT		
Gaylord	Burke	Executive Director	Merrimack Valley Planning Commission	Regional	Water
David	Carr	Geospatial Information Technology Specialist	IAGT		Water
David	Chase	Economist, Manager of Geographic Information Analysis	U.S. Department of Housing and Urban Development, Office of Policy Development and Research	Federal	Community
Rick	Chormann	Senior Hydrogeologist	NH Geological Survey	State	Water

***The Institute for the Application of Geospatial Technology***

Chris	Cialek	Supervisor: Data Management and Coordination	Minnesota Department of Administration, Land Management Information Center	State	Homeland Security
David	Claypool	County Surveyor and Public Works Manager	Ramsey County	County	Water
William	Connor	Program Manager	IAGT		
Mary	Culver	Physical Scientist, Coastal Remote Sensing Program	NOAA Coastal Services Center (Coastal Information Services Branch)	Federal	Water
Christopher	Darby	Information Technology Officer	City of Newark, Office of Management and Budget	Municipal	Homeland Security
Stuart	Davis	Administrator	Ohio Office of Information Technology/Enterprise Shared Services	State	Homeland Security
Bruce	Davis	Director, Interagency Modeling and Atmospheric Assessment Center (IMAAC)	Department of Homeland Security, Science and Technology Directorate	Federal	Homeland Security
Paul	DeMinco	Project Manager	NASA	Federal	Water
Mark	Demulder	Acting Executive Director, Geospatial One-Stop	U.S. Geological Survey	Federal	Homeland Security
Donald	Dittmar	Land Information System Division Manager	Waukesha County	County	Community
Percy	Dougherty	Commissioner	Lehigh County	County	Community
Deborah	Dumin	Associate Research Analyst	State of Connecticut Department of Environmental Protection, Environmental and Geographic Information Center	State	Homeland Security
Peter	Fellows	GIS Planner	Two Rivers-Ottauquechee Regional Commission	Regional	Community
Brett	Flodine	GIS Coordinator	Town of Groton	Municipal	Community
Keith	Fournier	Chief Information Officer/ Geographic Information Officer	Lucas County Information Services	County	Water
Martin	Frederick	Program Deputy Director at NASA HQ	NASA Applied Sciences Program	Federal	Community
David	Fricke	Executive Director	Minnesota Association of Townships	Municipal	Community
Jon	Giles	GIS Coordinator	City of Portland	Municipal	Water

Misty	Green	Acting Director	Lincoln County Emergency Management	County	Homeland Security
Timothy	Haithcoat	Program Director	GRC/MSDIS	State	Community
Lee	Halbrook	GIS Analyst	City of Wausau	Municipal	Homeland Security
Dave	Hannon	Deputy Director	Housatonic Valley Council of Elected Officials	Regional	Community
Peter	Hawley	Outreach Coordinator	American Planning Association	Regional	Community
Stephen	Henninger	Assistant City Planner	City of Concord, Community Development Department	Municipal	Community
Fred	Herr	Protected Critical Infrastructure Information (PCII) Program Manager	Department of Homeland Security	Federal	Homeland Security
Nancy	Hess	Principal Environmental Planner	Rhode Island Statewide Planning Program	State	Community
Nick	Hutton	Project Manager, Emergency Preparedness Information Network (EPINet)	NJ Office of Information Technology -Office of Geographic Information Systems	State	Homeland Security
Christian	Jacqz	Director	MassGIS	State	Homeland Security
David	Janda	Assistant Director	Dane County Emergency Management	County	Homeland Security
Randy	Johnson	Commissioner	Hennepin County	County	Homeland Security
William	Johnson	Manager of GIS & Critical Infrastructure Coordination	NYS Office of Cyber Security and Critical Infrastructure Coordination	State	Homeland Security
Jo	Jordon	Regional GIS Coordinator	DHS / FEMA Region II	Federal	Homeland Security
Adhir	Kackar	Environmental Protection Specialist	U.S. Environmental Protection Agency, Office of Policy, Economics and Innovation (1807-T)	Federal	Community
Frank	Kenney	National Spatial Data Infrastructure Liaison for NY	U.S. Geological Survey	Federal	Homeland Security
Ted	Koch	State Cartographer	Wisconsin State Cartographer's Office	State	Community
Richard	Kotapish	GIS Director	Lake County	County	Homeland Security
Nate	Krause	GIT Specialist	IAGT		Water
Alan	Leidner	Senior Associate	Booz Allen Hamilton		Homeland Security
Jonathan	Lockman	Planning Director	Southern Maine Regional Planning Commission	Regional	Community

Kathleen	Lomako	Deputy Executive Director	Southeast Michigan Council of Governments	Regional	Community
Mark	Maloy	GIS Coordinator	Berkshire Regional Planning Commission	Regional	Community
Edward	Marx	Commissioner	Tompkins County Department of Planning	County	Water
Jim	McConnell	GIS Director	New York City Office of Emergency Management	Municipal	Homeland Security
Bruce	McDowell	Academy Fellow and Project Director	National Academy of Public Administration, Management Studies	Federal	Community
Matt	Mercurio	Geospatial Information Technology Specialist	IAGT		
Emily	Mercurio	Remote Sensing Engineer and Program Manager	IAGT		
Beth	Miller	Outreach Activities Specialist	IAGT		
Don	Miller	Project Manager	City of Indianapolis, IndyParks Land Stewardship Program	Municipal	Community
Kevin	Neimond	GIS Program	National Association of Counties (NACo)	County	Water
Jay	Parrish	State Geologist	Pennsylvania Geological Survey	State	Water
John	Peterson	Deputy Director	Atlantic County Department of Regional Planning	County	Community
Dana	Piwinski	Chief Operating Officer	IAGT		
Sandy	Prisloe	GeoSpatial Extension Specialist	University of Connecticut, Cooperative Extension Service	State	Water
Jeff	Quackenbush	GIS Coordinator	Oneida County	County	Community
James	Querry	GIS Director	City of Philadelphia - MOIS	Municipal	Homeland Security
Brian	Robertson	Associate Planner	City of South Burlington, Dept. of Planning and Zoning	Municipal	Community
Milo	Robinson	Framework and Cooperating States Coordinator	Federal Geographic Data Committee	Federal	Water
Martin	Roche	GIS Manager	CANIN Associates, Inc.		Community
Rafael	Rodriguez	District Chief - New York District	U.S. Geological Survey - Water Resources Discipline	Federal	Water
Fay	Rubin	GIS Manager	University of New Hampshire, Complex Systems Research Center	State	Homeland Security

Amanda	Rutherford	Land Use Planner, Outreach Program	NOAA Coastal Services Center (Coastal Management Services Branch)	Federal	Community
Ted	Saunders	Supervisory Program Analyst	USGS Geography Discipline	Federal	Homeland Security
Bob	Scardamalia	State Demographer	Department of Economic Development, NY State Data Center	State	Community
Miki	Schmidt	Chief, Coastal Information Services Branch	NOAA Coastal Services Center	Federal	Homeland Security
Shaun	Scholer	GIS Director	City of Richmond/Wayne County GIS	County	Water
Reed	Sims	New England IRT GIS Specialist	USDA-NRCS	Federal	Water
Cliff	Sinnott	Executive Director	Rockingham Planning Commission	Regional	Community
Robert	Sparkes	GIS Specialist	Township of West Milford Planning Department	Municipal	Water
Christina	Stevens	Geospatial Analyst	JFHQ-CS-SPO	State	Homeland Security
Rob	Surber	Deputy Director	Michigan Center for Geographic Information	State	Water
Christina	Tait	Deputy City Manager	City of Hudson	Municipal	Community
David	Terrell	National Spatial Data Infrastructure Liaison for PA	U.S. Geological Survey	Federal	Community
Zachary	Usher	Natural Hazards Program Specialist	DHS/FEMA Region II	Federal	Homeland Security
Ben	Verbick	GIS Coordinator	Local Government Information Systems Association (LOGIS)	County	Homeland Security
Dick	Vraga	National Spatial Data Infrastructure Liaison for WI and IL	U.S. Geological Survey	Federal	Homeland Security
Lisa	Warnecke	President	GeoManagement Associates		Homeland Security
Dreux	Watermolen	Chief, Science Information Services	Wisconsin Dept. of Natural Resources	State	Water
Sherry	Ways	Transportation Planner	U.S. Department of Transportation, Federal Highways Administration – Office of Planning	Federal	Community
Bob	Weaver	Executive Director	Johnson County Resource Conservation District, Hoosier Heartland	County	Water

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Eric	Webster	Staff Director	House Science Committee, Subcommittee on Environment, Technology, and Standards	Federal	
Shannon	Weinberg	Professional Staff Member/Deputy Counsel	Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census, House Committee on Government Reform	Federal	Homeland Security
Tom	Wieczorek	City Manager	City of Ionia	Municipal	Homeland Security
Leslie	Wollack	Outreach and Communications Manager, Geospatial One Stop Project	U.S. Geological Survey	Federal	Community
Paul	Young	Program Officer for Eastern Region Geography	U.S. Geological Survey	Federal	Water
David	Zorn	Executive Director	Genesee/Finger Lakes Regional Planning Council	Regional	Water

**APPENDIX C WORKSHOP EVALUATION**

**IAGT Northeastern Local, Regional, and State  
Remote Sensing / GIT Outreach Workshop Evaluation**

October 26–28, 2004

Please help us improve future programs by telling us your reactions to this workshop.

1. Please rate the following parts of the workshop in terms of usefulness to you in your current professional position. (NA indicates not applicable since you were in a different concurrent session.)  
Please circle the number which best reflects usefulness to you, using the following scale:

	Not Useful					Very Useful
	NA	1	2	3	4	5
<b>The workshop overall</b>	NA	1	2	3	4	5
Content of sessions	NA	1	2	3	4	5
Quality of presentations	NA	1	2	3	4	5
Relevance and usefulness of materials you received	NA	1	2	3	4	5
<b>Workshop logistics</b>						
Registration process	NA	1	2	3	4	5
Advance information and communication	NA	1	2	3	4	5
Location of workshop	NA	1	2	3	4	5
Dates of workshop	NA	1	2	3	4	5
Hours of workshop	NA	1	2	3	4	5
Meeting room setup and environment	NA	1	2	3	4	5
Food at The Lodge Conference Center	NA	1	2	3	4	5
Dinner at the Sherwood Inn	NA	1	2	3	4	5
Holiday Inn accommodations	NA	1	2	3	4	5
Auburn Travel Service	NA	1	2	3	4	5
Transportation during workshop	NA	1	2	3	4	5
Overall organization and structure of workshop	NA	1	2	3	4	5
General pace of workshop	NA	1	2	3	4	5
After dinner presentation on Mars	NA	1	2	3	4	
<b>Tuesday Sessions</b>						
Morning Orientation for Regional and Local Government	NA	1	2	3	4	5
Morning State Government session	NA	1	2	3	4	5
Afternoon Federal level outreach programs panel	NA	1	2	3	4	5
Afternoon State level outreach programs panel	NA	1	2	3	4	5
Afternoon State IAGT Affiliate Remote Sensing Project Overview	NA	1	2	3	4	5
Poster Displays	NA	1	2	3	4	5
<b>Wednesday Focus Area Breakout Sessions</b>						
Please check your focus area:	<input type="checkbox"/> Water / Natural Resources		<input type="checkbox"/> Planning / Community Growth Mgt.			
	<input type="checkbox"/> Homeland Security/Disaster & Emergency Management					
Morning IAGT State Project Session	NA	1	2	3	4	5
Morning Federal Outreach Session	NA	1	2	3	4	5
Afternoon State/Regional Outreach Session	NA	1	2	3	4	5
Concluding Afternoon Discussion and Key Points Synthesis	NA	1	2	3	4	5

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Wednesday Lunch Speaker, Randy Johnson, Hennepin County, MN	NA	1	2	3	4	5
Wednesday Speaker, Bruce McDowell, Nat. Acad. Public Administration	NA	1	2	3	4	5
Decision support system demonstrations	NA	1	2	3	4	
<b>Thursday Sessions</b>						
Breakout Group Reports	NA	1	2	3	4	5
Governing Sector Breakout Session	NA	1	2	3	4	5
Wrap-up Panel	NA	1	2	3	4	5

*Continued briefly on the back of this sheet*

2. Please tell us what parts of the workshop you found the most useful.
3. Were there any aspects of the workshop which detracted from its effectiveness?
4. Were there additional topics you would add to make a more effective workshop?
5. Do you have any other suggestions for improving the workshop?
6. How will you use what you learned at this workshop within your jurisdiction?
7. What are your next steps?
8. Do you have any overall or additional comments?

9. Please tell us a little about yourself.

I work for:  local  county  regional  state  federal level government.

I have \_\_\_\_\_ years experience using remote sensing data/imagery and \_\_\_\_\_ years experience in GIS/GIT.

My job title is: \_\_\_\_\_

***Thank you for your thoughts and for your participation in the workshop.***

***Have a safe trip home***

## **APPENDIX D GOVERNING FUNCTIONS BREAKOUT SESSIONS - COMPILATION OF RAW DATA**

All participants were designated to attend one of three breakout sessions for the entire middle day of the workshop. Each session was focused on a differing governing function but had four similar and distinct parts. Presentations for the first three parts (“panels”) of each breakout session are reviewed in Chapter 4. Participant input during each of these panels, and in discussions during “mini-breakout sessions” in the fourth part of the breakout sessions, is discussed in Chapters 5 and 6. To augment these chapters, this appendix provides verbatim input provided by workshop participants as recorded on a series of flip charts prepared during the four parts of each of the three breakout sessions. This text includes some editing and explanation of the actual input on the flip charts by breakout session leaders and some participants in order to increase understanding.

### **PART 1: KEY SUCCESS FACTORS/LESSONS LEARNED FROM THREE PANELS IN EACH BREAKOUT SESSION**

Each breakout session had three panels with similar focus and structure, but with unique content as relevant to the applicable governing function. The following remarks were provided by session participants after each of the panel presentations.

#### **Panel 1: IAGT Remote Sensing Projects**

##### Water and other Natural Resources (WNR) Management

None available

##### Planning and Community Growth (PCG) Management

- Importance of partner cooperation
  - Kick off meeting
  - Location of partners important (impact on method of collaboration)
- Export partner is critical to success
- Bridge between technical staff and users is important (grant writing and in actual project work)
- There are still many technical issues with data and software (versions and operating system differences that require flexibility in approach)

**Homeland Security and Disaster/Emergency (HSDE) Management**

- Coordination of local governments through State of Maine was effective.
- Professional organizations were useful to Maine in reaching out to Federal agencies.
- The end products of demonstration projects were useful to local governments when a known problem was addressed.
- Make maps available that are relevant to 1<sup>st</sup> responders is a good strategy.
- It would be useful to have a repository of technical information and specifications for exchange between governments and vendors.
- Funding is always useful.
- It is important to articulate everyone's needs before a project is defined.
- Projects and programs must be driven by the needs of end users and not dictated by higher authorities. It is essential to know up front what is to be accomplished.
- It is important to capture cost benefit and economies of scale. Measure benefits in lives saved and in dollars.
- It would be useful to have a web services specification adopted by all so all could exchange information.
- Data maintenance must be built into any program from its inception.
- The capture of political boundaries is important to the success of a GIT/RS program.
- Define the technical capacity of all project partners up front so end products can be geared to level of technical ability.
- Tools should be developed specifically for smaller volume users as well as for larger volume users.
- Look for quality data at the county and municipal layers.

**Panel 2: Federal Agency Presentations**

**Water and other Natural Resources (WNR) Management**

- Imbed technology into core business.
- Promote cost effectiveness of participation.
- Engage early with constituency.
- Champion within project organization.
- Develop structure and well defined metrics.

**Planning and Community Growth (PCG) Management**

- Transition from a “pilot project” or a one time application to broader use is difficult.
- Data is important and costly.
- Creation of software by public entities is difficult—and generally fails.

**Homeland Security and Disaster/Emergency (HSDE) Management**

- Ask what local priorities are. (Map Modernization)
- Share the cost of data collection. (Map Modernization)
- Acquire suitable local data. (Map Modernization)
- Develop partnerships with state and local organizations for input and production. (USGS)
- CAP Program and Liaison program well regarded outreach efforts. (USGS)
- Help local and state governments to protect their infrastructure information by allowing submission to DHS. (IAIP Critical Infrastructure Program))
- Partner with state and local data providers. (FEMA)
- Response and recovery funding, and training money are appreciated. (FEMA)
- Consider coordinating all data creation and collection through GOS. (FEMA)
- One size does not fit all.

**Panel 3: Local, Regional and State Perspectives**

**Water and other Natural Resources (WNR) Management -**

None available

**Planning and Community Growth (PCG) Management -**

None available

**Homeland Security and Disaster/Emergency (HSDE) Management**

- Local governments really care about detailed, accurate data – especially for use by first responders. (Mass, NYC)
- Commercial data can serve as a jumping off point. (Mass)
- It is bad when grants to local governments bypass the State and lead to increased chaos. Use State to coordinate. (Mass)
- Develop data and applications for disaster response which can also be used for daily operations. (NYC Transit GIS)
- Executive level leadership is required. (NJ)
- Project sustainability and maintenance must be built in from the start. (NJ)
- Accept that there will be and must be change. (NJ)
- Use volunteers for data collection and maintenance, such as CERT Teams.

**PART 2: SYNTHESIS OF MINI-BREAKOUT DISCUSSIONS IN EACH BREAKOUT SESSION**

Workshop participants in each of the three breakout sessions were further divided into one of five “mini-breakout sessions” for their group (total of 15 for the workshop). Participants were pre-selected for these smaller groups to provide almost one person per sector in each mini-breakout discussion. Participants were asked to define the traits that make a GIT outreach program successful for their respective governing function. Once reconvened, each breakout group was instructed to synthesize and categorize these remarks into one of five subject categories: Target Audience, Program Components, Resourced Strategic Plan, Evaluation Mechanisms, and Flexibility. The items listed below are reported in the categorizations determined by each respective group except as noted. At the end of this process (and the day), session participants were asked to “vote” on the most important items from their perspective using colored dots for the governing sector they represented. The numbers below represent the total number of dots indicated for each item with the compilation of these results discussed in Chapter 4.

**Target Audience**

<b>Target Audience</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Well defined/understood	2	1	1	6	3
Find a champion	4	2	0	3	2
Listen, involve early	0	0	1	0	2
Seek out/understand a cross level business process	2	2	0	2	2
Meet early with people closest to the issue	2	3	1	1	3
<b><u>Planning</u></b>					
Buy in from participants in the beginning of the process	0	0	3	1	2
Definition of outreach	1	0	0	0	1
Broad participation means groups have input into the process and understand everyone's role	1	1	2	2	3
Federal proactive "marketing" to bring it to the community: go beyond web reinforcement, make the business case, and show ROI and cost effectiveness	0	2	1	3	3

<b>HSDE</b>					
Develop common interests and goals; know your audience; involve participation of all stakeholders' have commitment to outreach	3	1	1	4	3
Provide adequate training for the target audience	0	1	0	1	2
Support a project or program, build a network that evolves/grows to critical mass	3	0	0	2	0
Bottom up strategy - go to local government participants and listen to true needs	7	1	3	4	2
Use stats as points of contact - intermediaries between federal agencies and local governments	1	1	0	6	1
Understand the skill level and the business model of the end user	0	0	0	0	0

**Program Contents**

<b>Program Contents</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Embed technology into a core business process...solve problem	2	4	0	4	2
Plan big, but have an initial narrow focus, and then expand with experience	2	0	1	1	0
<b><u>Planning</u></b>					
Establish data sharing rules up front	0	0	0	0	0
Outreach needs to build capacity at the end...allow it to continue to strengthen institutions that will continue	3	2	5	1	2
Institutional framework needed, strengthen framework through outreach program	0	1	0	1	0

Inability to work in isolation, need to collaborate	0	1	0	0	1
Outreach continuity	0	0	0	1	1
Pilot projects are good, but they must be small and have maintenance and sustainability built in	1	0	0	0	1
Think about project design and use everyone's ideas and provide for sustainability and maintenance	2	2	2	1	2
3 C's-Community, Coordination, Collaboration	1	0	0	0	0
Training: including joint training/updates, shared roles/partnering to hold sessions, narrow focus and audience, and need trusting relationship with trainees	4	1	5	3	1
Staffing: state/regional GIT outreach coordinator, maybe a shared position	0	0	0	0	0
Different data types require different outreach, i.e. remote sensing data (needs money/different licensing) versus vector GIS data (cheaper/free licensing)	1	0	4	0	0
Good communication strategy	0	0	0	0	0
Model specifications for data/project components and different types, especially new remote sensing and its applications' platforms	0	0	0	0	0
Think about the future users at project planning	1	0	0	0	0
Need data models for remote sensing data. i.e. use this platform's data for this application	0	0	0	0	0
Data, not software focus	0	0	2	1	6
Coordinating function	0	0	0	0	1
'National' bridges 'state'; and 'state' bridges 'county'	0	0	0	0	0
If want external money, then must comply with standards and share	0	0	0	0	0

Peer-to-peer important, help reveal 'best practices'	0	0	0	0	1
Need early strategy/plan for outreach as key design element of project/pilot etc. based on 'user' view or perspective (such as planning, homeland security, electricity) including making end product more user friendly	0	0	1	1	2
Clear benefits of application, including well defined purpose for decision making	0	0	1	0	0
Timely execution	0	2	0	0	0
<b><u>HSDE</u></b>					
Projects and programs should address motivating problems' homeland security brings urgency	1	1	0	0	0
Provide funds, incentives, in kind contributions, token gifts, resources, etc.	7	1	1	3	3
Branding: have a program identity, personalize (i.e. National Map and GOS are now popular brands)	0	0	1	2	1
Recognize the multi-level character of projects 3 and programs, the varied participation and contributions, understand there are haves, have nots, and have mores.	3	0	0	2	0
Adherence to standards	1	1	0	2	0

**Resourced Strategic Plan**

<b>Resourced Strategic Plan</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Be honest, don't over sell	2	0	1	0	1
Identify how technology relates to "bigger plan"	0	0	0	1	1
Identify the specific needs of stakeholders	1	2	2	0	2
Partner with groups that have outreach as core mission	0	0	2	4	1

Use peers as resources (credible outreach)	0	2	0	0	5
<b>Planning</b>					
Establish data sharing rules up front	0	0	0	0	0
Affordable local share	0	0	0	0	0
Look at a variety of funding sources and be creative	0	0	0	0	0
Maintainable program for data and information (with consistent updates)	0	0	0	0	0
Primary Source "Stewards" (for data)	0	0	0	0	0
Federal "contract" with state: incorporate incentives and carrots					
Adequate financing	4	1	7	1	1
<b>HSDE</b>					
Capture institutional knowledge	0	0	0	2	0
Maximize use of the internet for networking and for information	0	1	0	3	2
Written strategy	1	2	0	1	2

**Evaluation Mechanisms**

<b>Evaluation Mechanisms</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Well defined/tangible/memorable	1	4	2	5	2
Promote cost effectiveness	1	0	3	3	1
Comprehensive evaluation of delivery acceptance, and result	1	1	1	2	2
<b><u>Planning</u></b>					
Successful pilots need to be useful beyond pilot stage - there must be value to encourage participation, incentives	0	0	1	3	0
Develop a measure of success	2	1	3	1	2

<b><u>HSDE</u></b>					
Have measures of success; return on investment and performance measures "out of the gate;" clearly define and ad for what you want accomplished; note: success can be that a project is never used (i.e. homeland security)	5	0	1	6	2
Develop a feedback loop with the media and elected officials	0	1	1	0	0
Emphasize saving lives, minimizing injury and supporting first responders	1	0	0	1	0

**Flexibility**

<b>Flexibility</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Think business like-relationship based (or RSP)	1	2	0	3	1
<b><u>Planning</u></b>					
Remember turnover in people, and plan for it as people move around, including elected officials and volunteers (need to be aggressive)	0	0	0	0	0
Flexibility/ease of use	0	0	0	0	0
<b><u>HSDE</u></b>					
Develop good relationships and trust; ongoing communications; follow through; sincerity; show interest; non-condescending, respectful attitude	2	0	3	2	2
Keep it simple silly; KISS principle applied to projects and programs	5	0	1	4	1

**Other**

<b>Other</b>					
	<b>Municipal (Green)</b>	<b>City (Light Blue)</b>	<b>Regional (Yellow)</b>	<b>State (Red)</b>	<b>Federal (Dark Blue)</b>
<b><u>Water</u></b>					
Spend federal money locally	0	2	0	0	3
<b><u>Planning</u></b>					
Articulate champion	2	4	0	2	3
Well organized, such as "grants.gov"?, with simple thematic areas, email alerts and good keyword search	0	0	0	0	0
<b><u>HSDE</u></b>					
Divisions within and among federal agencies should speak with one voice and be better coordinated	3	1	0	3	3
Projects and programs should be opportunistic; use disasters for the best purposes; find multiple uses for initiatives; in moving quickly to respond to a need "dare to be adequate;" and ACT	4	2	2	2	1
Find/use a good communicator for project and program; organize an "advocacy posse"	2	1	0	3	2

## **APPENDIX E GOVERNING SECTOR BREAKOUT SESSIONS - COMPILATION OF RAW DATA**

All participants were designated to attend one of five breakout sessions during a portion of the final day of the workshop. This session consisted of a facilitated discussion to help understand unique perspectives of each of the five governing sectors represented at the workshop. Participant input during each of these panels, and in discussions during “mini-breakout sessions” in the fourth part of the breakout sessions, is discussed in Chapters 5 and 6. This appendix provides verbatim input provided by workshop participants as recorded on a series of flip charts in each of the five groups. This text includes some editing and explanation of the actual input on the flip charts by breakout leaders and some participants to increase understanding.

### **PART 1: ADDITIONAL NEEDED OUTREACH TRAITS**

All workshop participants were provided with a list of 12 common needed GIT traits that had been compiled by the facilitators of the three functional breakout sessions on the previous day. During the governing sector breakout discussions, participants in the five governing groups were asked to validate this list by providing revisions to the terminology of these identified 12 needed GIT outreach traits, and identify any other needed traits from their perspectives. The 12 identified traits and terminology suggestions attributed by sector are provided in Figure 5-1 and discussed in Chapter 5.

Below is a list of additional traits generated by the governing groups as was requested. As noted, each set of additional traits are attributed by sector. Three sectors are included because only participants in the municipal, county and regional groups chose to add additional traits, while the state and federal participants chose not to do so.

After each group reached consensus about the common 12 needed traits and additional ones, participants in each of the sessions were then asked to “vote” on the most important items from their perspective by placing colored dots representing the functional breakout session they participated in the previous day. Compilation of the dots indicated for each of the 12 common traits by all five groups is discussed in Chapter 5. The number of dots indicated by participants for additional traits is noted below.

#### **Municipal Governments**

- Use/incorporation/customized local data
- Training should focus on local data to solve local problems
- Re-education/politics (Water 1, Planning 2, HS/DEM 3)

- Connect theoretical with day to day processes (Water 4, Planning 3, HS/DEM 6)
- Solutions to problems not just a solution/develop flexible solutions to similar problems (Water 1)
- Develop stabilized/supported programs; not political (HS/DEM 2)
- Connect GIT/RS to practical (Planning 1)

### **County Governments**

- Assurance that federal partnerships will be sustained - end of the moving target
- Grab what you can now
- Less or equal focus on equipment, more on information (Water 2, Planning 2)
- Work towards the core business processes and accept changes in existing programs (be flexible and adaptive to program changes)
- Programs that support business processes are the programs that last – programs should drive technology, not the reverse
- Sustained funding to go from pilot to implementation
- Demonstrate the utility of technology within the framework of existing issues (Water 3, Planning 3)
  - Don't be afraid to market
  - Be aware of politics and embrace it
- Get your own house in order (internal outreach)
- Focus on distribution of success stories
- Work with local associations to further your message (professional organizations)
- Be up front about what you can and cannot do (don't over commit – be clear and realistic)
- Synchronize production of tools with decision making process (must fit in mission process)
- Recognize total cost of ownership like building a house – GIS is not just hammers and nails, it also needs an architect, etc.) (Water 6, Planning 1)
- Use very simple language (Water 1, Planning 1)
- Once the grant runs out, what do you do?
- What's in it for me?
- Commonality in products produced through pilot projects
- Explore academic partnerships
- Federal agencies should work with states to help access local government, but states must be adequately funded to tackle this (Water 1)
- Federal agencies should not assume there is a “trickle down” effect (i.e. knowledge from pilots spreading to others) (Water 1, Planning 2, HS/DEM 1)
- Look to counties to help when implementing a statewide coordinator (Planning 1, HS/DEM 3)

- Statewide GIS conferences build networks - institutionalize them (Planning 2, HS/DEM 2)

### **Regional Councils**

- Dedicate human resources (not an add-on role), USGS as good model
- Continuity (Planning 4)
- Recognition of many and different players' structure and needs (extend the reach of outreach/assistance to more governments and entities: need to extend beyond the usual governments and agencies who are 'in the loop' enough to ask or submit proposals. Pilot studies, though a practical necessity sometimes, can be inequitable and insular - especially if the effort is not made to disseminate results and information about future opportunities to participate.); "one size doesn't fit all" (Water 2, Planning 12, HS/DEM 3)
- Resources – grants should provide adequate administrative funding (Planning 3)
- Work through existing structures and institutions to create economies of scale (Water 2, Planning 10, HS/DEM 2)
- Projects must be meaningful to appropriate level (Water 2, Planning 4, HS/DEM 2)

**State Governments** – None

**Federal Agencies** - None

### **PART 2: NEEDED ACTION STEPS IDENTIFIED BY SECTOR**

After individual participants in each governing sector session determined the most needed GIT outreach traits using the colored dots, they were asked to work together to identify needed action steps to best serve the needs of the sector they represented in terms of future GIT outreach activities.

### **Municipal Governments**

#### **Short Term Action Items**

- Summary of presentations programs and this session
- Canned power point for elected/appointed officials
  - use us as conduits
  - directory of programs
- Providing maps (empowered users later)
- Follow-up projects underway

- Quarterly/ relevant data exchanges
- Success cookbook of “best management practices,” application processes
- Listing of web sites for RS/GIT opportunities
- Developing standards, model RFPs/RFQs so data can be shared among levels
- Partnering for financial success/cost-effectiveness
- Begin to speak same language
- Bring local governments together like this workshop to solve problems/develop solutions (e.g. regional summit)

#### **Mid Term Action Items**

- Follow-up
- Federal agencies support state orthophoto programs (National Map?)
- Move from specific self-serving pilot programs to programs that benefit across spectrum
- Develop national program from local to state to federal for ortho, topo, etc. (funds fed/state/fed)
- Federal agencies should accept local orthophoto, other data updates into national framework
- Geo-technical grants to localities (GPS, ESRI)
- Coordination of federal/state grants (GPS, Critical Infrastructure, etc.)
- Incorporate RS/GIT into practical uses
- Bridging GIS to public safety/first responders
- NLC/PTI/ICMA Summit on RS/GIT

#### **Long Term Action Items**

- A “National Map” funded by federal agencies to states. Map to be comprehensive base map. (4-band imagery, etc.)
- MOUs between locals and federal agencies for involvement, funding, specific information (data)
- Moving GIT/RS to necessity like roads, water (funding)

#### **County Governments**

##### **Short Term Action Items**

- Share information with local networks
- Involve key decision makers and key stakeholders to help find new champions and gain exposure – need to market to decision makers and align with core business processes

- Take advantage of existing marketing opportunities (i.e. GIS Day)

#### **Medium Range (Programmatic) Items**

- Outreach strategies need to be built in as program design component
- Study and establish statewide coordination models, and look to counties to help when forming program
- Counties should establish outreach programs to towns, boroughs, municipalities, etc. as applicable

#### **Long Term Action Items**

- Federal government will work best when work through statewide coordination programs to access county governments
- Federal programs need to provide utility to local governments, and if providing data, make it be at a usable scale at the local level
- Better coordination of procurement (governments should leverage each other) for information, data and resources, including better budget tracking

#### **Regional Councils**

##### **Immediate Action Items**

- Federal agencies: recognize “one size does not fit all” and each organization has unique roles and responsibilities
- Federal agencies: Develop institutional capacity framework with state/local/regional partners that identifies abilities and responsibilities
- Federal agencies: Ask for help to implement legislative strategy for more money
- Federal agencies: Don’t continue to rename federal programs annually

##### **Short Term Action Items**

- Understand institutional capacity landscape and utilize Intergovernmental Cooperation Act (of 1968) model
- Inventory existing outreach programs - both within individual agencies and across all agencies, and post/publish results

##### **Medium Term Action Items**

- Review and standardize funding mechanisms
- Deliver information through capacity framework to locally based entities

- Establish schedule of regular meetings (to encourage 2 way communication and evaluate outreach progress)

## **State Governments**

### **Short term Action Items**

- Adequate incentives: (1) financial, (2) technical assistance, (3) training
- Actively involve state stakeholders in all phases of program design and execution
- Elevate outreach as a priority, and not just a “check box metric”
- Create a national geospatial extension program
- Comply with the order to get your data to Geospatial One-Step, clearinghouse
- Continue grants and workshops

### **Mid Term Action Items**

- Adequate incentives: (1) financial, (2) technical assistance, (3) training
- Actively involve state stakeholders in all phases of program design and execution
- Expand the national geospatial extension program
- Continued grants and workshops for the 14 states affiliated with IAGT
- Develop one-page summary for all projects and distribute (professionally presented)

### **Long Term Action Items**

- Adequate incentives: (1) financial, (2) technical assistance, (3) training
- Actively involve state stakeholders in all phases of program design and execution
- Create sustained outreach programs, e.g. NOAA Coastal Service Center
- Sustain the national geospatial extension program
- Continue meetings such as this one
- Deploy more liaisons (e.g. USGS)

## **Federal Agencies**

### **Short Term Actions**

- Develop and deliver consistent federal message – need to synchronize message of Washington D.C. offices with that of regional and field federal offices/implementers

- Strengthen the FGDC by encouraging participation and providing more incentives (carrots and sticks)
- Strengthen metadata and access to federal data, including improve and expand Geospatial One Stop
- Office of Management and Budget should support more coordination between agencies
- Regional coordinator of federal regional offices (across and within agencies)
- “Dare to be adequate” – don’t wait until an initiative is perfect, go ahead and roll it out and evolve it through broad involvement

#### Mid Term Actions

- Regarding regional efforts of federal agencies: have all states involved in a project “at the table”
- Have federal person on state GIT advisory councils
- Synchronize federal GIT activity at the regional level, including regional meetings and interaction across federal agencies, particularly for outreach
- Encourage outreach people in different agencies to have their own meetings

#### Federal Long Term

Implement the recommendations of past reports, such as *Geographic Information for the 21<sup>st</sup> Century: Building a Strategy for the Nation* by the National Academy of Public Administration, several National Research Council reports, and other past reports dating back to 1936 (See *Federal Surveying and Mapping: An Organizational Review: Commission of Geodesy*, Appendix B, July 1973 by the National Research Council/National Academy of Science). Among others, recommendations in some reports included increasing the involvement of federal policy officials and merging data responsibilities among multiple federal agencies.