Meeting Shared Geospatial Needs Beyond Data

Summary of the Process to Define the Next-Generation of Collaboration (January to April 2008)

Lasted Modified: May 27, 2008

Compiled by
MetroGIS Staff Support Team

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ACKNOWLEDGEMENTS

The advice provided by the MetroGIS Technical Leadership Steering Workgroup and facilitation team of John Antenucci and Jim Fries from PlanGraphics Inc., was invaluable to maturing the "Beyond Data" Workshop objectives, defining a program format respectful of the time and expertise offered by the workshop participants, and crafting compelling recommendations from the myriad of information received at the workshop. The members of the Workgroup were as follows:

- Bob Basques (St. Paul) – Chair, MetroGIS Technical Advisory Team
- David Bitner (Metropolitan Airports Commission) –MetroGIS Coordinating Committee
- David Brandt (Washington County) - MetroGIS Technical Advisory Team
- Jim Bunning (Scott County) - MetroGIS Coordinating Committee
- Pat Cummens (ESRI)
- Tim Loesch (DNR) –MetroGIS Coordinating Committee
- Nancy Read, (Metropolitan Mosquito Control District) – MetroGIS Coordinating Committee member and past Committee Chair
- Ben Verbick (LOGIS) – MetroGIS Address Workgroup
- Jim Maxwell (The Lawrence Group) - MetroGIS Technical Advisory Team and past Team Chair
- Mark Kotz (Metropolitan Council and MetroGIS Support Team)

A thank you is also in order to the 22 other workshop participants in addition to the individuals listed above (see Appendix B) and those who provided critical assistance and support behind the scenes before and on the day of the workshop (Jonathan Blake, Christopher Kline, Blink Bonnie catering, and Metro Counties Government Center support staff).

Finally, contributions from three organizations are recognized, without which the workshop would not have been possible. Funding provided by the Metropolitan Council, in conjunction with its capacity as primary sponsor of MetroGIS and custodian for MetroGIS's "Fostering Collaboration" function, made it possible to support the workshop preparations and follow-up, retain the PlanGraphics facilitation team, and consider the option of an all day event by providing for an onsite lunch. The Metropolitan Mosquito Control District and Metropolitan Emergency Management Board freed up the meeting space and related support facilities and provided them free of charge.

This workshop and the follow-up discussions to refine the ideas generated at the workshop into definitive next steps could not have been successful without the combined efforts of these individuals and organizations.

Respectfully,

Randall Johnson, Workshop Project Manager
MetroGIS Staff Coordinator

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EXECUTIVE SUMMARY

Authority and Leadership

On October 27, 2007, the MetroGIS Policy Board adopted the 2008-2011 MetroGIS Business Plan. This plan calls for three scope expansions deemed to be necessary to maintain MetroGIS's relevance with changing stakeholder needs:

- Expand regional solutions beyond data to include applications,
- Pursue partnerships with non-government interests to address shared needs,
- Pursue interoperability of data with jurisdictions that adjoin the Twin Cities Metropolitan Area.

The MetroGIS Technical Leadership Steering Workgroup[1] was created in November 2007, immediately following adoption of the 2008-2011 Business Plan. This workgroup was charged with providing technical direction to act on the "expand regional solutions beyond data to include applications" scope expansion.

Document Purpose

The main components of this document are intended to provide an institutional record of:

- The proceedings and major findings of the January 24, 2008, workshop hosted by MetroGIS and entitled "*Meeting Shared Geospatial Needs Beyond Data.*" from the perspective of the facilitation team of John Antenucci and Jim Fries of PlanGraphics, national respected leaders in the geospatial community.
- Deliberations of the Technical Leadership Steering Workgroup and Coordinating Committee following the January 24th workshop to analyze and synthesize the report developed by the PlanGraphics Team to arrive at the next-step recommendations presented for Policy Board consideration.
- Specific next steps approved by the MetroGIS Policy Board on April 23, 2008 that launched an initiative targeted at addressing shared geospatial needs of the MetroGIS community related to applications and geospatial web services (beyond data).

Major Conclusions and Next Steps:

High-level deliverables, sought through the project documented in this report, were to define:

- Appropriate role for MetroGIS relative to pursuing solutions to application needs shared by organizations that serve the Twin Cities metropolitan area
- Anticipated support requirements needed to accomplish technical, applications-related, roles desired of MetroGIS

On April 23, 2008, the MetroGIS Policy Board considered a recommendation of the Coordinating Committee as to how to best achieve these deliverables and endorsed the following conclusions and next steps:

1) MetroGIS's roles, in pursuit of solutions to shared application needs, , should be principally that of providing, in order of their relative importance:
    - Leadership
    - Coordination
    - Policy/Procedures
    - Funding MetroGIS' role related to shared application needs should be principally that of providing leadership and coordination to leverage the GIS resources of the Twin Cities metropolitan area.

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2) Key next steps to act on the roles stated in Item 1, above, follow with the understanding that the presence of the proposed Technical Coordinator will be needed to fully address several of these actions in a timely manner:

Leadership:

- Define a strategy to secure a Technical Coordinator and initiate negotiations

Leadership & Coordination:

- Define a process to identify and prioritize shared application and service needs.
- Populate GeoServices Finder to the extent possible with available metadata information

Coordination & Policy:

- Define full data, applications and web services broker, guided by the state conceptual geospatial architecture plan and the GeoServices Finder project.
- Explore methods to establish trust (Service Level Agreements, Multi-nodal systems, mutual back-up)

Policy:

- Avoid "obstacles to sharing" such as: not using standards, copyright issues – who owns, who can use, security issues, unknown Return On Investment, culture, don't know technology)

Coordination & Knowledge Sharing:

- Define communication needs - easy "One-Stop" entry, mailing list strategy to share information)
- Create a forum for applications & web services - share vision, find resources (people, funds), find users, test sites

Workshop Participants:

Thirty-one individuals[2], each possessing insight important to maintaining MetroGIS's continued success, participated in the day-long workshop referenced above. They included two members of MetroGIS's Policy Board, ten members of the MetroGIS Coordinating Committee, five members of MetroGIS's Technical Advisory Team and fourteen individuals possessing special expertise important to achieving the purpose.

The mix of perspectives possessed by the participants also included that of policy makers, managers, and technologists, representing a wide variety of professions affiliated with all forms of government that serve the seven-county Twin Cities metropolitan area and adjoining jurisdictions, as well as academic, utility, non-profit, and for-profit interests. To encourage networking and wide ranging discussion, the facilitation team preassigned the seating so that everyone was seated next to someone they do not interact with on a regular basis, and in some cases had never met.

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PHASE I: JANUARY 24, 2008 WORKSHOP

(Note to the reader: The presentation slides used to transition from one segment of the workshop program to the next are presented in Appendix B.)

WELCOME

William Brown, Hennepin County Surveyor and MetroGIS Coordinating Committee Chairperson

At 8:05 a.m. Chairman Brown welcomed the participants. He began his remarks by commenting that both GIS technology and MetroGIS have come a long ways during the past decade, as evidenced by GIS technology playing an ever increasingly important role in the everyday operations of more and more organizations. He thanked the sponsoring organizations for making this event possible and the participants for agreeing[3] to dedicate an entire day to helping MetroGIS define its role regarding pursuit of solutions to shared application needs.[4]

Chairperson Brown concluded his remarks by noting that with the amount of serious commitment represented in the room, he is confident that important work will be accomplished to set a course that is both compelling and ambitious for MetroGIS to pursue over the next several years.

WORKSHOP OBJECTIVES AND EXPECTATIONS

Randall Johnson, MetroGIS Staff Coordinator

For context, Johnson begin his comments by stating that the 2008-2011 MetroGIS Business Plan, adopted October 2007, established "expanding regional data solutions to include applications" as a high priority need of the MetroGIS community and that this workshop was designed to provide direction to MetroGIS's leadership as to how best to go about defining:

- Appropriate roles for MetroGIS's relative to pursuing application needs shared by organizations that serve the Twin Cities Metropolitan Area
- Anticipated support requirements needed to accomplish role(s) desired of MetroGIS

Also for context, he briefly summarized the core functions served by the MetroGIS. He concluded his remarks by overviewing seven topic areas that the Technical Leadership S6tyeering Workgroup believed to be key components in addressing the two high-level outcomes listed above and stated that today's workshop had been designed to obtain direction regarding each of these components:

- What is meant by geospatial "applications/services"?
- The universe of inter-organizational sharing types related to geospatial applications / services
- Those types of sharing related to applications / services that are appropriate for MetroGIS to pursue
- Tactics or projects to accomplish each option appropriate for MetroGIS (haves and needs).
- Resources, roles, and any policies modifications needed to act on sharing options appropriate for MetroGIS.
- Expected stakeholder behaviors for each type of application sharing appropriate for MetroGIS.
- A conceptual methodology to identify business information needs that:
  a) Are shared by multiple organizational interests that comprise the MetroGIS community *and*
  b) Require an application(s) running on geospatial data to be fully satisfied.

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INTRODUCTIONS AND RULES OF ENGAGEMENT

John Antenucci and Jim Fries, PlanGraphics, Inc., Workshop Facilitators

The workshop facilitators introduced themselves, shared the rules of engagement for the day (see Appendix B) and asked each of the participants to introduce themselves and offer a little known fact about themselves.

John Antenucci and Jim Fries, PlanGraphic, Inc.

Refer to Appendix E for a listing of the participants, their organizational affiliations and the perspectives they were invited to represent.

SETTING THE STAGE: PRACTICAL EXPERIENCES

Jim Fries emceed a series of presentations about GIS related projects in the Twin Cities metropolitan area selected by the Technical Leadership Steering Workgroup to demonstrate different types of application-related sharing opportunities to stimulate creative thinking during the day. Each of the presenters was also a workshop participant. (See Appendix C for links to their actual slide presentations.)

(1) **Sharing Resources**

Dakota and Scott Counties (Jim Bunning and Randy Knippel)

- Boards recognized need to collaborate on GIS
- Purpose is to strengthen relationships between staff
- Collaboration website (SharePoint)
- Common data models – standardized data sets (parcels, parks, emergency preparedness, data inventory)
- Data acquisition (cost sharing model, economies of scale)

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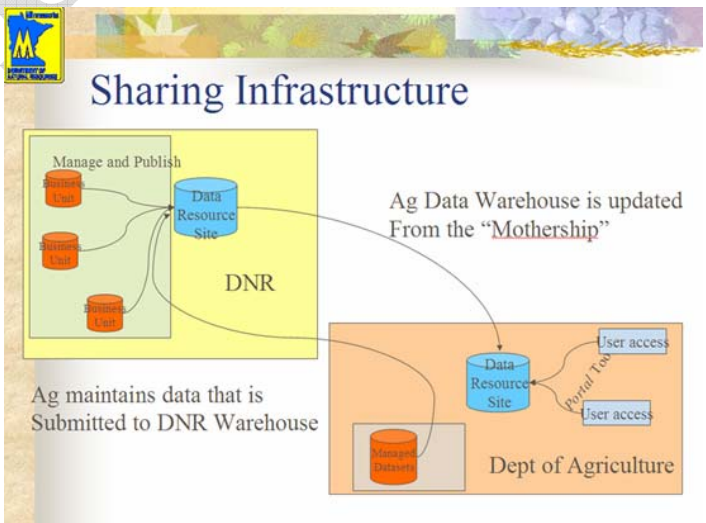
Jim Bunning, GIS Manager, Scott County

(2) **Sharing Infrastructure**

Department of Natural Resources (Tim Loesch)

- Data Deli
- 1000+ users of DNR GIS software and data
- GIS is considered a utility at the DNR (employees expect instant access to GIS data)
- Business need – provide staff access to departmental spatial data, share data with external entities, provide infrastructure for data management
- Three tier design – Managed Data, Data Warehouse, Metadata
- DNR is a microcosm of state agencies
- Conducted shared infrastructure project with Department of Agriculture in 2006 – Everyone across the state from Ag now has access to DNR data and vice versa
- Obstacles – Establishing open connectivity (security concerns), Getting data producers to conform to standards, Providing adequate tools to allow data producers to enter information into Data Warehouse


Tim Loesch, GIS Manager,
Mn Department of Nature Resources



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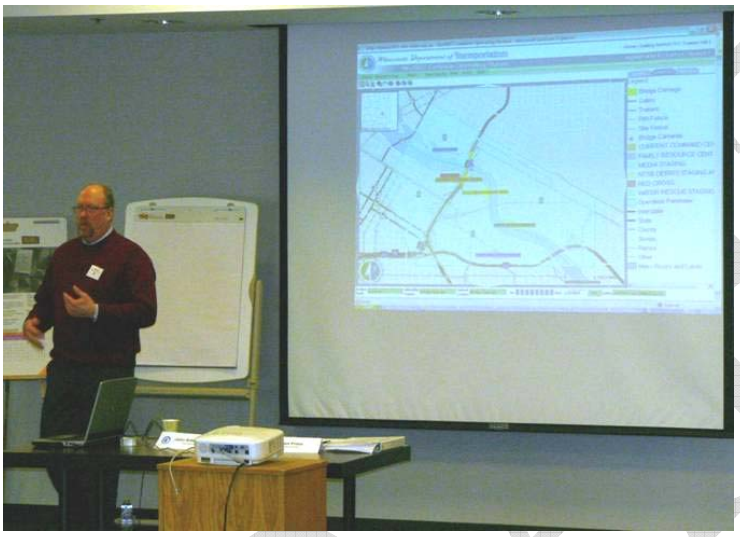
(3) **Applications Using Services**

Minnesota Department of Transportation (Dan Ross)

- Fewer than 100 high end users at DOT
- Created Common Operating Picture with City of Minneapolis in response to 35W bridge collapse
- Partnered with ESRI on road closure and routing web service (web services hosted by ESRI) in response to SE MN flood response
- Future potential – Integrate routing with 511 information on MNDOT website with an interactive web service
- What's next? GIS Portal



Dan Ross, GIS Manager, Mn DOT

(4) **Collaborative Development**

OpenMNND Project (Randy Knippel)

- Minnesota/North Dakota Collaborative
- Funded by federal grant
- Collaborative effort to create open source, web mapping solution
- Objectives – Low cost, easily implemented, high configurable, consistent look and feel, focus on general public
- Strategy – Leverage existing, open source software efforts; adapt to meet county and city expectations; be able to download, install, use easily
- Services-oriented architecture
- Reasons for success – Commissioned a technical lead; Used an interactive process; Recruited early adopters; Established open source steering committee for GeoMoose; Concentrated on outreach
- Obstacles – Funding; Geographically dispersed partners; Selling concept of open source

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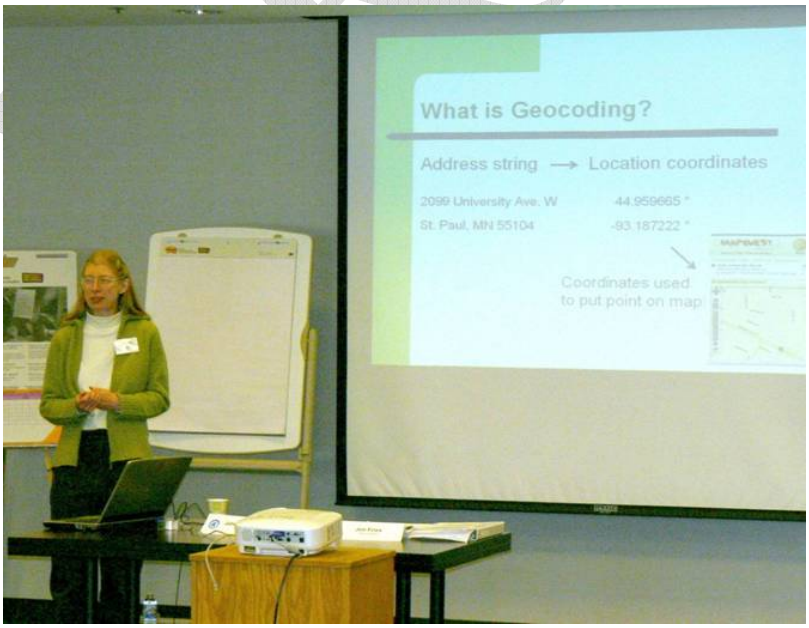
Randy Knippel, GIS Manager, Dakota County

(5) **Services Using Shared Data**

Geocoder Development Project (Nancy Read)

- Address string → Location coordinates
- Challenges – Spelling or order errors (West 5th versus 5th West); Some parcels not addressed; Load and process updates of parcel layer
- Needs – Robust geocoding engine; Usable with website; Host for service, data; Data maintenance plan
- Written in ANSI C
- Challenges – Legal agreements (funding, licensing); Code maintenance; Possible hosting issues if service is popular
- Legal concerns regarding open source



Nancy Read, Technical Coordinator, Metropolitan Mosquito Control District

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(6) **Support For Infrastructure**

LOGIS (Ben Verbick)

- LOGIS is a consortium with 36 member cities
- All participating member cities pay the same amount
- Cooperative funding effort helps foster participation
- Integration to business databases (Database structures; Data unique by city)
- Obstacles – Consensus; IT philosophies; Data source control; Timing; Interface

Ben Verbick, GIS Manager, LOGIS

Experiences Beyond the Local Area and Concept of Extended Enterprise

Antenucci and Fries then spent a few minutes explaining characteristics of several other application related sharing initiatives from around the country (Chester County, PA, King County, WA, LOJIC (Kentucky), KGIS (Tennessee), Michigan Center for Geographic Information, and Pennsylvania Geospatial Technologies Office), again to stimulate creative discussion at this workshop. (See Appendix B for more information about each of these projects.)

Antenucci then shared a concept that he referred to as an "extended enterprise", which he believes best describes what today's workshop is about to further set the context for the day's efforts and explained that this concept is not relevant and can not be achieved until a community understands the benefits collaborating on shared data needs, as is the case with the MetroGIS community.

He surmised that the question now is how best to expand the current MetroGIS model to effectively collaborate on shared application needs and better meet the needs of the ever growing demands of the customer bases. He used a Venn diagram (see slide in Appendix B) to illustrate the overlap between Applications, Infrastructure, and Institutional agreement, noting that for purposes of discussion they would be addressing them as separate topics, which in practice is not possible. He concluded his context setting comments by complimenting MetroGIS for its good work to institutionalize data sharing and for its leadership's recognition that expanding the model to address shared application needs can provide substantial additional benefits that greatly leverage investments made to achieve regional data solutions.

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REFRESHMENT BREAK

At 9:55 a.m. the facilitators recessed the group for a break.

DEFINING THE APPLICATION ROLES APPROPRIATE FOR METROGIS

John Antenucci, PlanGraphics, Inc., Lead Workshop Facilitator

Part 1: Sharing Applications

The PlanGraphics facilitation team began the interactive part of the workshop by asking the participants to identify examples of current sharing activities. These ideas were categorized into the following four categories or types of sharing activities with the assistance of the facilitation team:

- Access
- Visualize data
- Develop infrastructure
- Infrastructure

Next, the participants were asked to take a *contrarian view* by responding to the following question "What actions could be taken by MetroGIS participants if the preference was to prevent sharing of data/applications?"

Participants offered the following general "barriers to sharing":

- Start recovering costs – charge for all data
- License all data
- Stop communicating with other agencies/organizations
- Strict internal needs – don't consider what others are doing
- The agency that pays for code owns the code
- We have a responsibility to make public information available (question law include applications or just require access to the data?)
- Not adhere to standards
- Weigh highest in maintaining privacy
- Stop funding technology (applications) that improve access
- Stop outreach to educate policy makers on value of sharing/collaboration

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- Drop internal priority to work with others/not reinvent the wheel – do everything yourself.
- One barrier to sharing is if an organization has "too much money" and has no incentive to share
- Leaders/policymakers do not have trust in collaborating partners to uphold their responsibilities (data maintenance to standards, host web services, etc.)
- Destroy/lose trust in collaborating partners' data/capabilities
- No recognition of benefits of sharing
- Stop pursuing consistency among department policies within organizations
- Focusing only on short-term benefits can impede sharing
- Stop pursuing individuals with appropriate expertise for the job
- Support cultures that stifle creative thinking about effective way to share
- Accept fear for concerns about manipulation/injection of errors into of data by others
- Diminish trust in ability to security systems to protect critical assets from unauthorized access and unauthorized changes.

The facilitators then shifted the focus to actions that MetroGIS and or its partners could take in order to prevent sharing. The following actions were identified by workshop participants:

- Eliminate DataFinder
- Ignore customer needs
- Ignore need to continually seek to improve upon efficiencies
- Stop funding for "fostering collaboration" - catalyzing cooperation
- Stop funding grants/seed money for projects with regional significance
- Stop using data from others
- Stop outreach (forums, GCGI, networking/information sharing, MetroGIS general websites, stop publishing publications, stop supporting committees, stop fostering inter-county sharing

The participants were asked to identify ways in which outreach is currently pursued to inform the community of MetroGIS's accomplishments and activities. The responses were:

- Governor's Council
- Networking
- User groups
- MetroGIS website and others
- Publications
- Inter-county sharing of information

The participants were then asked to identify applications/services that would have greatest potential value to their organization which involve participation beyond internal interests. The following applications/services were identified (listed in order identified):

- Geocoder service that works with regional parcel and street dataset and eventually Address points (currently being worked on by MetroGIS)
- Aerial photography service (LMIC) – particularly if functionality is enhanced (see below for desired enhancements
- Universal data services (all data published as services)
- An application with the capability to integrate data from many sources for decision support – particularly public policy questions with which policy makers must wrestle (e.g., how property values are effected by traffic, crime, etc.)
- Real Estate comparables

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- Rapid data update service (multiple addressing authorities can update a central database quickly and simultaneously. Quality control is provided by the producer.)
- Implement the ApplicationFinder concept (queries search metadata for data, applications, services, etc.) Also need a means to effectively communicate its existence to actually populate the items searchable via the site
- Parcel information queries (mailing labels, property information, etc)
- Data standards for land records (XML schema)
- Data standards for law enforcement (XML schema)
- Pilot standards for a Service Registry tool for use statewide – common plug ins (ask Dan Ross if more information needed for this idea)
- Tool to help project managers identify prospective partners for specific projects
- Base map services that producers can use to plot their data (mass cache version so it runs quickly)
- Spatially-enabled catalogue – expansion to current data discovery tools (e.g., DataFinder)

As a means to rank the relative value of these potential projects, the participants were each given $50 in monopoly money, comprised of multiple denominations, ranging from $5 to $20, and were asked to allocate these funds among their top three priorities from the ideas listed above.

John Antenucci, Lead Workshop Facilitator, handing out monopoly money

The allocations of the participants from the private sector (included non-profit and academic sectors) were counted separately for comparison with the preferences of the public sector participants. The results were as follows, from highest to lowest priority:

- Private sector:
  - Common services: $80
  - Imagery server (or image service extension): $80
  - Registered catalogue service: $70
  - XML schemas: $40
  - Universal data service: $35
  - Decision support tool: $20
  - Data quality tool set: $20
  - Property comparables: $5

- Public sector
  - Registered catalogue service: $240
  - Common services: $235
  - Data quality tool set: $170
  - XML schemas: $160
  - Universal data service: $155
  - Decision support tool: $105
  - Imagery server (or image service extension): $50
  - Property comparables (comparable valuation): $30

LUNCH BREAK

At 12:30 p.m. the facilitators recessed the group for a lunch break. Box lunches were provided on site to encourage networking and ensure that the group could be reassembled in keeping with the program schedule.

Part 2: Sharing Infrastructure

The facilitators began this segment of the workshop by asking the participants if their organizations would be able to support data and applications if the demand were to quadruple (external and internal users). If they did not believe their organizations could not do so, they were asked to comment on obstacles that would inhibit meeting the demand. The following responses were offered:

- **DNR** - Technologically possible, difficult in practice due to funding limitations that would involve a yearlong process to implement needed hardware expansions, etc
- **Scott County** - Yes, capacity is closely monitored and improvements made on a quarterly basis to remain current with changing needs. Capacity needs are not as difficult to deal with as service/support needs
- **Metropolitan Council** - Yes, if the marginal costs of adding capacity/development are directly related to achieving the organization's mission
- **Mosquito Control** - Experienced a crash this past summer due to an unusual, one time, short lived peak load follow a TV report. No change made to the system to avert a similar incident

- **Dakota County** - Yes technically but at expect to answer what is in for the county to do themselves

The facilitators then asked if any of the organizations meet peak instances through outsourcing. The responses were as follows:

- **ESRI** noted that it is doing so for itself and some of its federal agency clients.
- **Houston Engineering** is aware of the option but in the instance of the MMCD application, the fee charged does is not adequate to cover the cost of outsourcing for peak loads.
- **Wright County** - Yes. Huge investments have been made in network storage capacity. GIS needs not separate form IT in general. Have ability to ramp up now and ability to do so will continue to get easier.
- **St. Paul** - Maybe. Bandwidth is the critical limiting factor, which in some cases is out of their control

The facilitators observed that an opportunity appears to exist to **document best practices for managing infrastructure related to GIS and related application development**. Ross (DNR) suggested that failover and achieving a common architecture should also be investigated as key components

The facilitators further observed that this community, in their experience, appears to have more interdependences in place than typical. The participants agreed and added that a movement is in progress in the Twin Cities to organizationally "consolidate" GIS into IS/IT, but not necessarily with regards to infrastructure.

Jim Fries, of the facilitation team, shared that he was surprised to learn from the pre-workshop survey that the option of pursuing a "shared/common development environment" scored low and asked the participants to comment about why they do not support this option for the MetroGIS community. The responses were as follows:

- The environment does not matter – how the results are exposed is what matters. (Method of sharing is more important than development environment)
- May be useful to collaborate with another organization with same development environment, but it is unrealistic for entire community to agree on a single environment and has not been a goal
- Wide sue of open standards is the key – components that work together. Service-oriented architecture
- Move to data-centric approach instead of application-centric approach
- Communications standards, common language are needed
- Divorce the back end from the front end.
- Applications that run on endorsed regional data solutions will drive the need for application based standards that align with one another.

Mark Kotz, of the MetroGIS support staff team, was asked to explain MetroGIS's past practices to achieve agreement on standards and roles and responsibilities for regional data solutions. The purpose of this presentation was to make sure each of the participants had a similar understanding of past practices before attempting to evaluate their relevant to achieving solutions to shared application needs. Key points made by Kotz follow:

- Two types of strategies have been used by MetroGIS to reach agreement, which are exemplified by the process used to implement the regional parcel dataset and process in progress to develop a regional address points dataset.

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- Parcels: Define user preferences and negotiate with counties (producers) to match producers capabilities to extent possible
- Address Points: No existing producers. Begin with emerging national standard and seek buy-in from candidate producers.
- Adopt solution on form of a "regional policy statement" that sets forth data standards, custodial roles and responsibilities, and organizations that have accepted the defined roles and responsibilities.

REFRESHMENT BREAK

At 1:45 p.m. the facilitators recessed the group for a break.

Part 3: Institutional Arrangements for Sharing

The group was asked to consider any potential/benefits that might come from a more formalized organizational structure, in specific, to respond to the question "Do we need to institutionalize the format/structure to accomplish solutions to shared application needs?" The group generally concurred with the following points:

- The organizational structure is not as important provided the needs are being met. For instance, the lack of a formal structure has not precluded the ability to accomplish standardized licensing agreements that streamline data sharing. Suggest continuing to build the case through effective solutions and not divert valuable resources to a new structure at this time.
- The ability to document benefit of GIS projects and programs in manner acceptable to policy makers was raised as a need. Internal marketing is critical to build support among policymakers. There will likely be less resistance to the necessary organizational modifications is accompanied with a strong case for the need. There is currently a lack of acknowledgement in the state administration that providing support for GIS is valuable public investment. The idea of pursuing a marketing plan was offered (TIES) a one means to address this need. The Staff Coordinator commented that MetroGIS's current Performance Measurement Plan is also scheduled to be updated later this year to align with outcomes defined in the new Business Plan
- There is a need to develop templates/standard business rules for how the community is to address solutions within each major shared application solution category. A formal structure does not appear to needed to do so.
- MetroGIS does not necessarily yield short-term quantitative benefits, but the qualitative benefits should be further communicated
- Minnesota policymakers, as a whole, do not appreciate the value of GIS or GIS collaboration as much as policymakers from other states. MetroGIS's efforts, in particular involvement of policy makers, should be promoted as a model for the state (Tim Loesch with DNR)
- An incremental step to a more formal organizational structure, should one be determined to be necessary, could be the use of service level agreements. There are no GIS problems, just business problems (*editors note – see the existing "Statement of Regional Policy" that has been adopted for each regional solution. How to enhance them to meet expectations?)*
- Marketing within participant organizations and across the region is critical
- Chester County, PA example of documenting benefits can and should be replicated. The business drivers need to be documented and what effect was achieved. Serving the policy maker directly with decision support tools for issues that deal with can make a

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difference in demonstrating benefit. Information that policymakers need to know: What is the relationship between home values and characteristics like traffic volumes, crime, access to jobs, etc.?

- Decision support technologies can help policymakers see a direct benefit of GIS. Perception - Very little of what is created by MetroGIS and GIS departments makes its way into the hands of policymakers
- GIO and CIO positions at the state level may be helpful, but are not the entire solution to statewide coordination (the solution also needs to include policy makers from all other stakeholder communities).

The facilitators then reported that the participants, through the pre-workshop survey, had generally concurred that a function of MetroGIS should be to host web services. Antenucci asked the group how MetroGIS might pay for the required resources. The following responses were offered:

- Expanding MetroGIS's role to include applications would require additional support resources and possible new sources of funding – sustaining the current "foster collaboration role" as well as any custodial roles if the community elects to ramp up MetroGIS into an organization capable of such support. The Staff Coordinator commented that in 1998 MetroGIS created a robust "fair share" funding model with a federal grant but ultimately the model was declared to be a non-starter by key stakeholder interests, in large part, due the Metropolitan Council's responsibility to provide leadership to achieve regional solutions to shared needs and its taxing authority.
- Application development needs will happen because some of the stakeholders already the business need and political will to move forward. The key is to have a forum through which to coordinate these projects and leverage available resources. The latter is what MetroGIS has been doing and is good at. Another key is funding the marginal costs to make sure deliverables meet similar needs of other stakeholders. The King County, Washington model was offered as a possible means to accomplish the marginal expense.
- For project funding, existing revenue streams (e.g., $10 recording fee) need to be leveraged.
- Most concurred with a comment from Perry Mulcrone, with Scott County, that charge backs/cost recovery should be avoided. The current model should be kept, as it is proven to foster collaboration ands leverage existing resources to achieve shared needs. The fear is that initiating a fee based structure would substantively detract from working together and fees would begin to pop up for services/data that are currently open to the community.
- The idea of creating a best practice for financing, given the current model, was suggested.

BREAK

At 3:45 p.m. the facilitators recessed the group for a break.

Part 4: Summarization and Next Steps

The facilitation team began this segment of the workshop by leading a short exercise to assist the participants identify any topics important to them that had not been identified or not covered in the depth they had hoped and which they believe important to development of a sound strategy to address shared application/web service needs. The ideas mentioned were as follows:

- Catalogue and registry service
- DataFinder – As it expands to services and applications, what structural or other changes need to be made to make it work in a "portal environment"?

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- Centralized and convenient way to find out what other organizations are doing and how to contact them as well as planned activities. (e.g., who's doing XML studies, in-state/out-of-state, etc.)
- Look into informal as well as formal search tools to connect prospective partners. (e.g., develop a collaboration website - SharePoint)
- LMIC is where organizations should be publishing what they're doing
- Do we need a full-fledged UDDI registry?

The facilitation team's closing included the following comments about next steps.

- Recorders will compile their notes and submit to PlanGraphics
- PlanGraphics will submit a report of their observations, recommendations from today's discussion to the MetroGIS Workgroup which will develop recommendations for next steps
- Next week, participants are asked to retake the online survey
- Draft summary document will be shared with the participants to insure its accuracy
- Policy Board considers recommendation in April 2008
- The workshop summary document and related materials will be published to MetroGIS's website.

A concern was raised by a couple of the participants that although the day's work was productive, sufficient clarity had not been achieved as to the "how" to achieve tangible results for each of the major categories of shared application activity and asked how this clarity would be achieved. The facilitators commented that they believed that several substantial activities had been identified and to give them (the facilitators) an opportunity to reflect on what the next steps might be.

The facilitation team concluded their remarks by thanking MetroGIS for the opportunity to participate in this initiative and emphasizing that there are few places in the country that have this many key constituencies working together in a truly effective organic process. They encouraged us to keep up the good work and invited the Staff Coordinator to offer any final comments.

WORKSHOP CLOSING

Randall Johnson, MetroGIS Staff Coordinator

Johnson thanked the participants for dedicating an entire day to helping MetroGIS define its role with regard to fostering solutions to shared application needs, emphasizing that he does not take this level of commitment lightly. He promised that he would do what he can to ensure that substantive actions are taken to carry through on ideas identify at this workshop.

He reiterated the importance of the participants offering comments on any aspect of the facilitation team's report or subsequent report of the Technical Leadership Steering Workgroup to ensure that nothing important to them is overlooked in the recommendations eventually presented for consideration by the MetroGIS Policy Board.

He concluded his remarks by encouraging each participant to complete and hand in a workshop evaluation form before they leave the building.

Editor's Note: According to evaluations submitted by the participants', the Workshop successively achieved its purposes. On a scale of 1 to 5, with a 5 meaning "outstanding", the effectiveness evaluation ratings for each of the core workshop components ranged from 3.89 to 4.35, with an overall average of 4.03[5], with a 5 meaning "outstanding". (See Appendix D for the detailed results.)

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PHASE II: REFINING RECOMMENDATIONS FOR NEXT STEPS

During the week following the workshop, the facilitation team compiled detailed notes taken by the recorders (Attachment G), the Staff Coordinator and Jonathan Blake (member of the staff support team), along with the ideas captured on the flip charts and developed their draft findings and recommendations. The Technical Leadership Steering Workshop met with the PlanGraphics Team on February 1, via conference call to clarify expectations concerning the content and process for delivery of their final report. A draft final report was received by MetroGIS staff on February 12. It was posted to a SharePoint Wiki website to expedite review by the Technical Leadership Steering Workshop members in preparation for their meeting on February 19.

At the Workgroup's meeting on February 19, the members agreed on several factual-based modifications they believed should be addressed in the final deliverable from the PlanGraphics Team. These modifications were forwarded, by email, to the facilitation team the next day.

The final report from the PlanGraphics Team was received on February 26, 2008 and immediately forwarded to the workshop participants. They were encouraged to offer comments, as they deemed appropriate, to ensure nothing important to them was missed in the Workgroup's pending recommendation to the Coordinating Committee. No comments were received.

The Workgroup then met in person twice (February 28 and March 12) to develop its report and recommendations for next steps for consideration by the Coordinating Committee on March 27, 2008. A major component of the Workgroup's report was an item-by-item response to the findings and recommendations of the PlanGraphics facilitation team. The workgroup's report the Coordinating Committee was forwarded on March 21 to the workshop participants in addition to the Committee members. Workshop participants were invited to attend the Committee meeting, again to ensure nothing of importance to the participants had been overlooked.

Nancy Read, Metropolitan Mosquito Control District, and Mark Kotz, Metropolitan Council, both members of the Technical Leadership Steering Workgroup, presented the Workgroup's recommendations to the Committee. The Committee concurred with the Workgroup's recommendations and unanimously recommended that the Policy Board endorse the proposed next steps (meeting summary – see Item 5a).

PHASE III: NEXT STEPS ENDORSED

On April 23, 2008, Nancy Read and Mark Kotz presented recommended next steps to MetroGIS the Policy Board, which unanimously approved them, as endorsed by the Coordinating Committee. (For more information, see: Agenda report to the Policy Board. The slide presentations – definition of terms / findings and recommendations to the Board. Except of Board's meeting summary –Item 5b.)

The specific actions approved by the Policy Board were as follows (see the above referenced agenda report for supporting documentation):

1) Endorse, as appropriate for MetroGIS's efforts, support of the following roles in pursuit of collaborative solutions to shared needs for applications and web services:
   - leadership,
   - coordination,
   - policy direction,
   - testbed funding to leverage the GIS resources possessed in the metropolitan region.

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2) Endorse the detailed next steps presented in the Coordinating Committee's report to the Board and the relative importance of these next steps regarding MetroGIS's pursuit of collaborative solutions to shared needs for applications and web services.

3) Concur that a need exists to secure a Technical Coordinator to join the MetroGIS support team to ensure relevance is maintained to changing stakeholder needs.

4) Endorse continued negotiations with the Metropolitan Council to dedicate additional support resources to MetroGIS's "foster collaboration" function sufficient to accomplish the roles and responsibilities of a Technical Coordinator, as described in Attachment B of the agenda report.

With this approval, the Technical Leadership Steering Workgroup was completed the charge asked of it.

PROLOGUE:

1) Several members of the Phase 1 Technical Leadership Steering Workgroup agreed to reconstitute as a Phase 2 Workgroup and began meeting on May 21, 2008 to define a detailed strategy to identify shared application needs which are priorities of the broad community.
2) At the time of this writing, a business case, which demonstrates the value to the Metropolitan Council of adding to its staff an individual capable of serving in the capacity of MetroGIS Technical Coordinator, had been developed, as requested by Policy Boardmember Pistilli and was anticipated to be submitted to Council management in early June.

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APPENDIX A

MetroGIS

Cooperation, Coordination, Sharing Geographic Data

Meeting Shared Geospatial Needs Beyond Data

Thursday, January 24, 2008

Board Room, Metro County Government Building
2099 University Avenue, St. Paul
7:45 a.m. to 4:30 p.m.

***Purposes**: Define MetroGIS's:*

- *Role(s) relative to addressing application needs shared by organizations that serve the Twin Cities Metropolitan Area*
- *Tangible next steps to act on shared application needs*

***Facilitators**: John Antenucci and Jim Fries of PlanGraphics, Inc.*

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Program

7:30 A.M.	**Continental Breakfast - Pick up Program Materials**
8:00	**Welcome** *William Brown - Chairperson, MetroGIS Coordinating Committee*
8:05	**Introductions, Objectives, Expectations, Rules of Engagement**
8:20	**Setting the Stage: Practical Experiences**
9:45	*Refreshment Break*
10:00	**Part 1: Sharing Applications**
11:45	*Lunch (on site)*
12:30 P.M.	**Part 2: Sharing Infrastructure**
1:45	*Break*
2:00	**Part 3: Institutional Arrangements for Sharing**
3:15	*Refreshment Break*
3:30	**Part 4: Summarization and Future Direction/Next Steps**
4:25	**Closing**

APPENDIX B

Program Transition Slides

Click here to view the main slide presentation used to transition from one component of the workshop to another, including the context setting comments made by the PlanGraphics facilitation team.

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APPENDIX C

Presentations for
Setting the Stage: Practical Experiences

Six examples of sharing activities related to applications were showcased at the outset of the workshop to illustrate the breadth of sharing opportunity that are potentially within scope of pursuing collaborative solutions and to stimulate the participants to be bold and creative in their contributions the remainder of the day. Links to the six presentations are provided here

(1) **Sharing Resources**
Dakota and Scott Counties (Jim Bunning and Randy Knippel)
Click here to view the Presentation

(2) **Sharing Infrastructure**
Department of Natural Resources (Tim Loesch)
Click here to view the Presentation

(3) **Applications Using Services**
Minnesota Department of Transportation (Dan Ross)
Click here to view the Presentation

(4) **Collaborative Development**
OpenMNND Project (Randy Knippel)
Click here to view the Presentation

(5) **Services Using Shared Data**
Geocoder Development Project (Nancy Read)
Click here to view the Presentation

(6) **Support For Infrastructure**
LOGIS (Ben Verbick)
Click here to view the Presentation

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APPENDIX D

Workshop Evaluation Results

Of the 31 participants, 27 submitted an evaluation of their workshop experience. The results of their evaluation of the various aspects of the workshop are as follows:

Outstanding .. 5
Good ……... 4
Average …….. 3
Poor …… 2
Terrible …..… 1

Did this Workshop Provide an Effective Means to:

1. Incorporate diverse viewpoints? ……...…….……4.48
2. Capture new ideas/opportunities? ……..……..4.48
3. Identify ways to improve current practice? ……...……4.04
4. Reach consensus on policy direction? ……..……4.00
5. Set realistic and actionable priorities? ……..……...3.92

Cumulative Average ***4.18***

Usefulness of Materials Provided Before Workshop:

1. Background Information Packet ……..….4.20
2. Information Brochure – *Sharing Information Across Boundaries* ……..……3.96
3. "Starter Kit" Statements ……..…..4.08
4. Roster of Participants ……...4.32

Effectiveness of Program:

Part 1: Opportunities, Challenges, Activities (*Small Group*) ……...…… 4.72
Part 2: Outcomes, Results (*Small Group*) ……...…….4.60
Part 3: Guiding Principles (*Large Group*) ……...……. 4.32
Part 4: Priorities and Capabilities (*Large Group*) ……....…….4.32

Cumulative Average ***4.44***

Adequacy of Facilities:

1. Location – Metro Counties Government Center ……...……...…4.12
2. Meeting Room ……...……4.16
3. Food ……...4.20

Cumulative Average ***4.16***

Click here to review individual participant responses to the following questions:

- **Please identify the most inspiring idea you brought away from the Workshop**
- **Please identify one thing that if achieved would make this Workshop a major success.**
- **Additional Comments:**

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APPENDIX E

Workshop Participants and Support Team

The name of each participant in the January 24, 2008 "Beyond Data" workshop, their organizational affiliation, and the perspective they were invited to represent are listed in the table on the following page.

Also listed is the name and organizational affiliation of each of person who provided support at the workshop.

Workshop Support Team			
1	John	Antenucci	PlanGraphics
2	Jim	Fries	PlanGraphics
3	Mark	Kotz	MetroGIS Support Team
4	Randall	Johnson	MetroGIS Support Team
5	Chris	Kline	MetroGIS Support Team
6	Jonathan	Blake	MetroGIS Support Team
7	Jennifer	Hinz	Recorder
8	Matthew	Parent	Recorder
9	Patti	Roettger	Recorder

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PARTICIPANTS

	First	Last	Organization	Perspective
1	Jeff	Matson	University of Minnesota - CURA	Academic
2	Shashi	Shekhar	University of Minnesota - Computer Science	Academic
3	Sally	Wakefield	1000 Friends of Minnesota	Non-Profit
4	Pat	Cummens	ESRI	Private - GIS Consulting
5	Brian	Fischer	Houston Engineering	Private - GIS Consulting
6	Jim	Maxwell	The Lawrence Group	Private - GIS Data Producer
7	Patrick	Hamilton	CB-Richard Ellis	Private - Real Easte
8	Jeff	Allen	Minneapolis Area Association of Realtors	Private - Real Estate
9	Brett	Budrow	St. Croix County	Public - County (adjoining)
10	Bill	Swing	Wright County	Public - County (adjoining) - IT
11	Scott	Bundy	Xcel Energy	Utility
12	Ron	Jabs	Minnesota Valley Electric Cooperative	Utility
13	Bob	Basques	City of Saint Paul	Public - City
14	Mike	Eberle	City of Maple Grove	Public - City
15	Ben	Verbick	LOGIS	Public - City
16	Paul	Weinberger	City of Minneapolis	Public - City
17	Steve	Elkins	City of Bloomington	Public - City (Policy Board Member)
18	Dave	Brandt	Washington County	Public - County
19	Myjke	Nelson	Washington County	Public - County - IT
20	Jim	Bunning	Scott County	Public - County
21	Randy	Knippel	Dakota County	Public - County
22	Perry	Mulcrone	Scott County	Public - County - IT
23	Dick	Carlstrom	TIES	Public - School
24	Dan	Cook	TIES	Public - School (Policy Board Member)
25	David	Bitner	Metropolitan Airports Commission	Public - Regional
26	Gordon	Chinander	Metropolitan Emergency Services Board	Public - Regional
27	Rick	Gelbmann	Metropolitan Council	Public - Regional
28	Nancy	Read	Metropolitan Mosquito Control District	Public - Regional
29	Alison	Slaats	Metropolitan Council	Public - Regional
30	Chris	Cialek	Minnesota Land Management Information Center	Public - State
31	Tim	Loesch	Minnesota Department of Natural Resources	Public - State
32	Dan	Ross	Minnesota Department of Transportation	Public - State

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APPENDIX F

Directions to Participants
Letter From Chairperson Reinhardt

MetroGIS

Cooperation, Coordination, Sharing Geographic Data

January 14, 2008

Name email
Organization name

MetroGIS Workshop

"Meeting Shared Geospatial Needs Beyond Data"

Dear (Workshop Participant):

Thank you for agreeing to participate in the MetroGIS-sponsored "***Meeting Shared Geospatial Needs Beyond Data Workshop"*** planned for **Thursday, January 24, 2007**. The range of professional and organizational perspectives represented by you and the other participants is outstanding. To ensure efficient use of the limited time available, please plan to arrive no later than 7:45 a.m. Directions to the Metro Counties Government Center, located at 2099 University Avenue, St. Paul, are attached. There is free on-site parking.

The importance of this workshop cannot be over emphasized. The ideas agreed upon at this workshop will set the framework for taking action to address geospatial sharing and partnering beyond data needs; the number one need defined by the MetroGIS community during development of the 2008-2011 MetroGIS Business Plan that was adopted October 17, 2007.

The purposes of this letter are to:

1) Clarify expectations of your role at the workshop,
2) Encourage you to participate in a pre-workshop survey
3) Encourage you to review several readings and glossary before you attend the workshop
4) Explain anticipated next steps
5) Identify vegetarian meal preferences for lunch

The Workshop Planning Team and I are looking forward to a successful event and take seriously that you have agreed to a full-day commitment. Considerable effort has been invested to ensure that your time is well used.

Your role: Together with that of each of the other participants, you are being invited to collectively help define the types or levels of sharing or collaborating beyond common geospatial data needs that are important for your organization and the region and that are appropriate for MetroGIS to assume leadership to achieve. And for those levels that are determined to be appropriate for MetroGIS's resources, you will be asked to help define characteristics of the collaborative activities and, to the extent possible, actual projects. You have been invited to participate because of the expertise and perspective you possess. Our objective is to support brainstorming and open discussion environments

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in which you and your workshop colleagues are able to apply your breadth of understanding, unshackled from your current organizational perspective, to define what can be if the community is able to leverage resources to achieve the broader common good.

Pre-workshop survey[6]: To make the best use of the time available at the workshop, you are encouraged to respond by **Friday, January 18th** to the pre-workshop online survey at: https://www.surveymonkey.com/s.aspx?sm=le7AvOUkZnrOxbhF93aWPg_3d_3d. By completing this survey, the workshop facilitation team will be able to use the results to identify in advance areas where there is already agreement as well as areas that will require more discussion to reach agreement. We will also be more prepared to address comments that you and your colleagues offered in response to the survey question "*The day would be a success if _____*" and "*My hope for MetroGIS is_____*". In other words, tangible comments about what you believe could be reality if community pursed a particular course of action(s).

Background Readings and Glossary: Prior to the workshop, also to make the best use of the time available, you are encouraged to review the background readings for which links are provided at *http://www.metrogis.org/data/apps/defineapps.shtml* **.** These readings have been selected by the Workshop Planning Team to provide a common understanding of possibilities and, in turn, stimulate identification and discussion of opportunities that MetroGIS should pursue. A **glossary of terms** is also provided for your review before and reference during the workshop. To the extent possible, use of a common vocabulary is encouraged to improve communication and move meaningfully beyond high-level concepts.

Next Steps: The MetroGIS Policy Board has asked for a recommendation as to the role(s) that MetroGIS should play in addressing shared application-related needs to be presented for the Board's consideration at the April 2008 meeting. The results of this workshop will provide the substance for this recommendation. A workshop summary document will be prepared and share with the participants for review comment before it is finalized. The Workshop Planning Team (also known as the MetroGIS Technical Leadership Steering Workgroup) will develop a recommendation and present it to the Policy Board, first sharing it with the MetroGIS Coordinating Committee at its March 27, 2008 meeting for comment.

Vegetarian Meal Preferences: Please contact Randall Johnson (randy.johnson@metc.state.mn.us) by noon on Tuesday, January 22nd if you prefer a vegetarian meal for lunch. Box lunches will be provided.

We trust that you will enjoy the experience while helping with the important task of setting a foundation for MetroGIS's efforts to address application-related needs. If you have any questions please contact Randall Johnson, MetroGIS Staff Coordinator, (randy.johnson@metc.state.mn.us or at 651-602-1638).

Sincerely,

Victoria Reinhardt, Chair
MetroGIS Policy Board *and*
Ramsey County Commissioner

Enclosures:
1) Workshop Program and Directions (*see Attachment A*)
2) Roster of Confirmed Participants (*see Attachment E*)

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APPENDIX G

Detailed Notes from Recorders

Three local graduate students were retained by the PlanGraphics Facilitation Team to serve as recorders at the workshop. Click here to review their combined notes as submitted to the PlanGraphics facilitation Team.

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APPENDIX H

Meeting Notes
Technical Leadership Steering Workgroup Deliberations

The Technical Leadership Steering Workgroup met 3 times following the January 24, 2008 "Beyond Data" Workshop to analyze the results of the workshop and prepare a recommendation for next steps for consideration by the Coordinating Committee on March 27, 2008. The workgroup also met 6 times prior to the workshop to define the project deliverables and to prepare for the workshop

Links to the summaries from each of their meetings can be viewed at
http://www.metrogis.org/teams/workgroups/shared_app/index.shtml

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APPENDIX I

Post Workshop
Participant Preference Survey

A pre-workshop participant preference survey was administered to assist the Technical Leadership Steering Workgroup and PlanGraphics Team prepare for the January 24, 2008 "Beyond Data" Workshop. Following the Workshop, the participants were asked to retake the survey. The results of both surveys were documented in the final project documentation submitted by the PlanGraphics Team. Click here to view the individual tabulations for the post workshop survey, together with a comparison of the pre and post workshop preference rankings (mean scores) for each question.

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APPENDIX J

March 27, 2008 Coordinating Committee Action

Click here to view the agenda report from the Technical Leadership Steering Workgroup to the Coordinating Committee to act on the "expand regional solutions beyond data to include applications" scope expansion the Policy Board for approval.

Click here to view the meeting summary (see item 5a) in which the Coordinating Committee's recommended next steps are listed.

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APPENDIX K

April 23, 2008 Policy Board Action

Click here to view the agenda report presented to the Policy Board to act on the "expand regional solutions beyond data to include applications" scope expansion

Click here to view the meeting summary (see item 5b) which lists the next steps approved by the Policy Board

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END NOTES

[1] See the Acknowledgments Section for a listing of the members of the Technical Leadership Steering Workgroup.
[2] See Appendix E for a list of the workshop participants.
[3] See Appendix F for Chairperson Reinhardt's letter to the participants outlining expectations.
[4] See Appendix A for the workshop program.
[5] See Appendix D for a full accounting of the evaluation results.
[6] The participants were asked to retake the same survey following the workshop. The results of the second survey are presented in Appendix I.

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