MetroGIS

Emergency Preparedness Workgroup

Project Report

(January 2003 to August 2005)

September 1, 2005

EXCERPT
METROGIS POLICY BOARD MEETING SUMMARY
OCTOBER 19, 2005

5. ACTION AND DISCUSSION ITEMS

a) Emergency Preparedness – Proposed Interim Regional Solution Report

Coordinating Committee Chairperson Read introduced the need for regional interoperability of emergency preparedness-related data with the following scenario. A jet aircraft is having difficulty and dumps fuel before landing. The fuel falls across a three county area. Emergency responders need to assess the impact on water intakes.

She then introduced Randy Knippel, Dakota County GIS Coordinator and Chair of the MetroGIS Emergency Preparedness Workgroup, noting that the Coordinating Committee had endorsed the proposed collaborative solution presented in the agenda materials at its September 21st meeting. The presentation slides can be viewed at http://www.metrogis.org/teams/pb/meetings/05_1019/slides.pdf.

Knippel summarized the collaborative vision, noting that the seven counties are to be the core participants and that officials affiliated with each of the counties had been actively involved in the development of the vision. He commented that the initial focus is on public health related topics such as data related to the Strategic National Stockpile initiative and that a major benefit is provision of a common operating picture for how the GIS and Emergency Preparedness/Management communities can collaborate. The key is recognizing that all disasters are local and that local officials possess the detailed knowledge needed to quickly respond. Moreover, to apply outside resources – nearby communities, state, federal assistance – quickly and effectively, there is a compelling need to create systems that facilitate easy and comprehensive access to data about the specific locality involved. In short, the protocols proposed by the Workgroup are designed to capture a host of data important to effectively respond to emergencies and create a sustainable mechanism with defined organizational roles and responsibilities to keep these data current and readily accessible. He also noted that a website has been created to improve communication with and understanding by the emergency preparedness community.

Before concluding his presentation, Knippel invited Debra Ehert of the Minnesota Department of Health to comment from the perspective of a benefactor of the proposed vision. Ms. Ehert spoke strongly in favor of the proposal, noting that the efforts of the Workgroup have been critical to their ability to effectively integrate GIS technology into their day-to-day business functions. She emphasized that the existence of cross-jurisdictionally compliant data are critical to achieving the Department of Health's mandates, as there is a major spatial dynamic to their work.

Knippel concluded his presentation by summarizing the components of the recommendation. In response to a question from Member Delaney, Knippel commented that the Workgroup is asking if the Board concurs that the vision has political legitimacy before further testing is initiated. Policy Board members then suggested that in addition to seeking a finding of legitimacy from the Policy Board, the Workgroup should be seeking the desired acknowledgement from the Pawlenty Administration, in particular the Department of Public Safety, as well as from the Legislature, League of Cities, and Association of Minnesota (and Metropolitan) Counties. At the county level, Board members concurred that the focus should be on seeking legitimacy from the Emergency Management Coordinators (EMC), as opposed to directly from the County Boards, noting that if the EMC's are sold on the idea, they will recommend it to their respective county boards. Member Delaney noted that each of the county EMCs is responsible for detailed plans to satisfy FEMA compliance standards and that access to accurate data is critical to their ability to effectively carry out this planning requirement.

Member Schneider commented that he supports the vision concept as most cities and counties have detailed plans that call for a high level of coordination. He concurred with other members that the plan should seek to obtain recognition at the state level sooner rather than later. He also offered constructive criticism concerning the graphic that illustrates the process, which is included in the agenda materials. The Board concurred with Member Schneider that the graphic needs to focus on demonstrable program-related outcomes familiar and important to policy makers and that the terminology needs to be more aligned with their worlds.

Vice-Chair Kordiak asked for clarification about how the Workgroup expects the Emergency Management community to use GIS technology. Knippel responded that the goal is to raise awareness of the value that the GIS professional can bring to a disaster response effort and include them on the team. No one is expecting the Emergency Managers to use the technology themselves in the time of a crisis.

Member Schneider noted that the presence of accurate data maintained in a system that permits analysis of "what if" scenarios would provide an enormously valuable training tool.

Motion: Member Egan moved and Member Delaney seconded, with the understanding that the process graphic will be improved to illustrate program rather than process outcomes, that the Policy Board and, in particular, each county representative:

1) Advocate among the leadership of their respective organizations for the next phase of testing and further refinement.
2) Offer suggestions for how the proposed roles and responsibilities might work better in their respective organization.
3) Authorize Chairperson Reinhardt to sign a letter inviting members of the EP community to attend an outreach event(s) at which the subject interim strategy will be explained and next steps discussed.

Motion carried, ayes all.

SECTION I. INTRODUCTION

This Project Report documents the efforts of the MetroGIS Emergency Preparedness Workgroup from its inception in January 2003 until August 2005. Its purpose is to provide context and a detailed explanation of the process through which the Workgroup defined its recommendation for proceeding with an interim solution to address common priority geospatial information needs of the Emergency Management community.

A. Project Goal

The goal of the Workgroup's effort is to continue to improve the Emergency Management community's understanding of how partnering with the GIS community can help deliver emergency management services quickly and efficiently. The ultimate goal is to enable emergency managers to more quickly secure accurate information that covers the area(s) impacted by an incident. The Emergency Management community is defined as all entities charged with supporting emergency management services for the seven-county Minneapolis-St. Paul Metropolitan Area, with a focus on local and regional government entities. Emergency managers include managers of police, fire, medical, public health, medical services, public works, homeland security and other responders to emergencies and disasters.

B. Context for Workgroup's Efforts and Recommendations

Disasters can occur anywhere, anytime, at any scale. Fire can ravage a single residence or an entire city block. Floodwaters can swell the banks of a secluded rural creek or inundate a populated river valley impacting multiple counties and states. Disease outbreaks can infect a school, metropolis, region or continent. Each event requires response; each responder requires immediate, accurate information. As a disaster's extent increases, acquiring and using the information necessary to respond effectively becomes an increasing challenge.

Recently, the critical information found in geospatial data and the power of geographic information system (GIS) technology have become increasing priorities for emergency managers. To gain the respect of the Emergency Management community as an effective resource, users of GIS technology must provide responders with quick and accurate information that covers the area affected, regardless of the jurisdictions involved, scale of the incident or recent changes to the site.

An increasing number of organizations are building geographic information systems today, many with little attention to where efforts are being duplicated, with quality unevenly applied or incompatibilities created. When called upon to support responders in an emergency, irreconcilable data and application designs in these systems can negate their usefulness and possibly exacerbate a critical situation. In its simplest terms, Emergency Management geospatial data must not compromise the safety of a first point responder.

In order to create effective and useful geospatial data for large-scale emergency scenarios, the information gathered must, first and foremost, be accurate and reliable. It must emanate from the most reliable sources and be available for regions that extend beyond local jurisdictional boundaries. This Workgroup acknowledges that data collection necessarily involves many different players, but a standards-based, data optimizing, collaborative must be organized in such a way that it allows the best information, whenever possible, from local to county to state and then to the national level.

This document explains the Workgroup's proposal to ensure that datasets critical to Emergency Management decision-making undergo a *refinement process* prior to use. The proposed refinement process calls for data produced by multiple sources to be reviewed and accepted by knowledgeable county or municipal personnel to ensure interoperability and the best possible accuracy and completeness. The proposed process also calls for not less than bi-annual updates to ensure that transactions are no more than two years old.

The collaborative data refinement process proposed by the Workgroup and as explained in this document would be applied to all datasets endorsed by the proposed process as part of a synchronized voluntary effort necessary to fulfill the needs of emergency personnel within the seven-county Minneapolis St. Paul Metropolitan Area. The Workgroup believes the results of a successful implementation of the proposed data management and refinement process will serve as a trustworthy resource supplying data needed by Emergency Management personnel on an ongoing basis. A schematic of the proposed custodial roles and responsibilities is provided on page 4.

This proposed process is designed to be a shared volunteer effort. No organization will be asked to support a role for which they do not have an internal business need. The resulting collaboration is expected to serve as an integral resource to supply emergency managers with critical geospatial data on an ongoing basis. And, if successful, the intent is to pass this business logic up to the next jurisdictional level. If the proposed regional model is successful, the Workgroup's intent is to pass this business logic along to State of Minnesota and federal interests with related business needs.

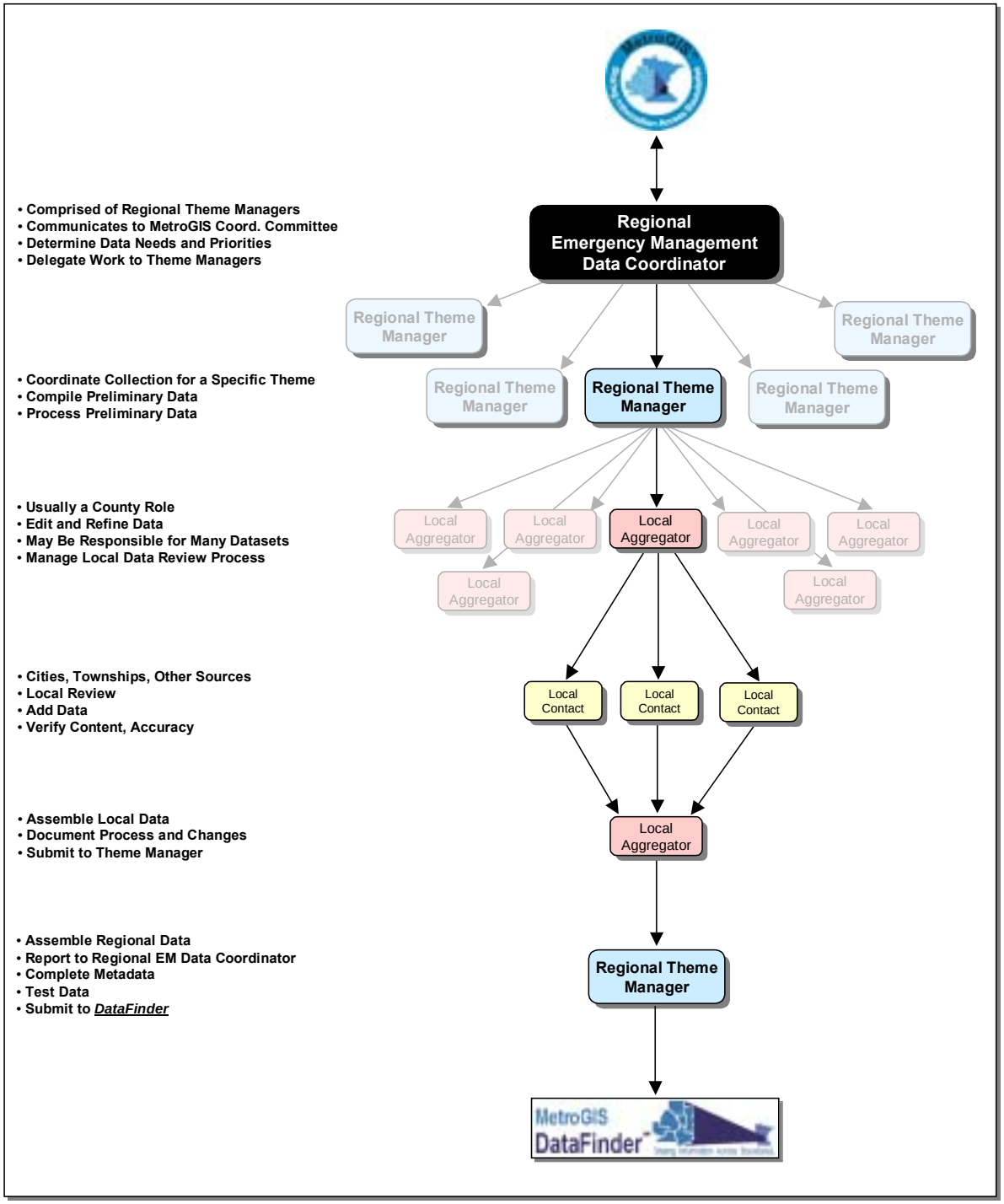
The discussion that follows provides a detailed explanation of the MetroGIS Emergency Preparedness Workgroup's proposed course of action to supply necessary and accurate geospatial information to those who require it, when they need it.

C. Workgroup's General Strategy

The Emergency Preparedness Workgroup's general strategy to achieve its desired outcome includes the following components:

1) **Achieve buy-in by the leadership of all seven counties** of the proposed collaborative Emergency Management data refinement process (page 4). The counties would share responsibilities for assembly and ongoing maintenance of several data themes, on a seven-county, regional scale.
2) **Assemble emergency management-related data into regional datasets** that the Workgroup has identified as important to emergency managers' responsibilities with whom they have interacted. A coordinated data refinement process for EM data assembly, documentation, and updating will ensure accurate and current data in the most cost effective manner. GIS professionals familiar with Emergency Management needs would select the initial data themes. This strategy makes data available quickly for use in emergencies and for GIS demonstrations to emergency managers.
3) **Continue outreach efforts to the emergency management community**. The outreach effort focuses on how GIS technology can help deliver emergency management services. A key component of this outreach effort involves hosting and continuing to refine the prototype regional web-based Emergency Management GIS Application, which is based on an application developed by Dakota County. Demonstrating capabilities and benefits of GIS technology using working Emergency Management applications is key to generating support in the Emergency Management community. Early adopters of GIS technology will spread the word about the value of GIS to their colleagues. Using the Emergency Management GIS Application is key in engaging emergency managers because they are able to directly see the value of GIS to their work.
4) **Engage emergency managers in evaluating GIS technology and data.** When the Workgroup believes enough emergency managers understand the value of GIS to adequately represent emergency management information needs, a needs assessment process would be conducted. The needs assessment would be focused exclusively on emergency management issues. Existing information needs documentation from local, state and national evaluations and from evaluation comments from users of the Emergency Management GIS Application would be used to begin the refinement of the Twin Cities' Emergency Management information needs. The results of this evaluation would be used to prioritize information needs from the emergency manager's perspective and prudently allocate resources to address gaps and shortcomings in existing data.

Emergency Management Data Custodian Roles



D. Tasks

To achieve its purposes, the Workgroup carried out the following tasks, the results of which are presented in this Project Report for endorsement by MetroGIS:

1. Determine preliminary geospatial information needs of the Emergency Management community.
2. Identify data sources that could potentially meet those needs.
3. Identify gaps between information needs and available data sources.
4. Recommend datasets for endorsement by MetroGIS as components of a regional Emergency Management information solution.
5. Recommend policies and actions to help fill gaps between available data and information needs.
6. Prototype a strategy for compiling and sustaining currency of the "Endorsed" Emergency Management datasets.
7. Recommend Emergency Management dataset dissemination and access strategies.
8. Recommend a strategy to promote understanding of GIS technology and applications by Emergency Managers.

E. Workgroup Membership

The MetroGIS Emergency Preparedness Workgroup is comprised of the following three subgroups:

a) Data Development and Deployment
b) Building Relationships with the Emergency Management Community
c) Organizing GIS Resources

The Workgroup is managed by a Steering Committee comprised of the chairs of each of its three subgroups, the Chair of the Workgroup as a whole, and representatives from the Metropolitan Emergency Services Board (formerly the Metropolitan 911 Board) and the Metropolitan Council. The membership includes seven individuals who represent a wide diversity of emergency management interests at the city, county and regional levels of government. See Appendix A for a listing of members, by subgroup, along with their organizational affiliations. The members of the Steering Committee were the primary authors of this document who are as follows:

Chair, Emergency Preparedness Workgroup: Randy Knippel, Dakota County
Chair, Data Development And Deployment: Keith Anderson, LOGIS
Chair, Building Relationships with the Emergency Management Community: Carla Coates, Ramsey County
Regional Theme Manager, Strategic National Stockpile: Tim Zimmerman, Hennepin County
Metropolitan Emergency Services Board GIS Coordinator, Gordon Chinander
Metropolitan Council GIS Manager, Rick Gelbmann

SECTION II. COMPONENTS OF PROPOSED INTERIM SOLUTION

A. Guiding Philosophies

The Emergency Preparedness Workgroup's proposed Interim Regional Emergency Management Information Need Solution embodies the following philosophies:

- Creating and maintaining high quality GIS emergency management data adds to the safety and security of the Twin Cities region.
- Working cooperatively across jurisdictional boundaries is the most cost-effective way to create consistent and accurate data needed by Emergency Management.
- Emergency Management data must be sustainable and consistent with other regional GIS data and processes.

- Relying initially upon Workgroup members' understanding of emergency management data priorities will make it possible to develop demonstration data and applications.
- Demonstrating capabilities and benefits of GIS technology using working Emergency Management applications and accurate data is key to generating support of Emergency Managers.
- The best solutions are those endorsed by the Emergency Management and the MetroGIS communities.
- Communicating regularly with key GIS personnel at the County jurisdictional level on process is important to maintaining current and accurate data.
- Communicating regularly with key emergency managers at county and local jurisdiction will ensure needed data are identified for development.

Finally, the solution proposed in this document is labeled as "interim" because the Workgroup wants to be sure that the roles and responsibilities are thoroughly tested in a production environment before seeking endorsement by the Policy Board as a formal regional solution.

B. Website Developed as Visualization Tool

The Workgroup concluded that it needed a means to clearly demonstrate to Emergency Managers the benefits of collaborating with the GIS Community. The MetroGIS DataFinder Emergency Preparedness Application at http://www.datafinder.org/ep_launch.asp was developed to fill this need. It was patterned after a similar website created by Dakota County. The Metropolitan Council agreed to permit it to be hosted on the same server on which DataFinder Café operates. It became operational in the spring of 2004 and has been used by the Workgroup as an outreach tool at conferences and in meetings with key Emergency Management officials since that time.

To expedite deployment of the Emergency Management Resources Website, the Workgroup concluded that its Data Subcommittee should select the initial datasets to be supported. Selection was based upon the members' personal experience and knowledge. This solution is intended to be an interim measure because of the need to demonstrate benefit before inviting the community to participate in more detailed discussions of geospatial information needs. In the future, the Emergency Preparedness Workgroup plans to help the Emergency Management community define desired enhancements to the initial website solution.

C. Website Dataset Maintenance Assignments

The Workgroup has agreed that each of the seven counties should be responsible for maintaining the datasets viewable on the Emergency Management Resources Website and that county dataset assignments should be decided using a random selection process. If a county is uncomfortable assuming the Custodian role for a particular dataset, it can notify the Data Subcommittee, which will be responsible for mitigating the situation. The proposed interim solution requests a formal commitment from each to affirm their acceptance of roles and responsibilities proposed in this document.

The first series of Emergency Management datasets to be implemented concentrate on themes associated with the Strategic National Stockpile (SNS). The SNS is an effort to prepare a mass inoculation in the event of an epidemic, bio attack or other public health emergency. Federal, state, regional, county and local health and emergency services agencies are involved. GIS is being used to identify inoculation and triage sites as well as transportation, transit and traffic management issues. For this example GIS staff from each county have agreed upon the following assignments:

Hennepin: Hospitals & Nursing Homes (MDH Data Source) – Regional Theme Manager
Ramsey: Pharmacies (MDH Data Source)
Carver: Clinics (MDH Data Source)
Scott: Senior High Rises (MDH Data Source)

Anoka: Schools (Complete at LMIC)
Dakota: Red Cross (EM IMS Application)
Washington: Rehabilitation Centers (MDH Data Source)

The county GIS staff participants recognize the importance of cooperating to effectively compile and sustain current Emergency Management datasets. Additional maintenance assignments are being made to address other identified emergency management needs. See Appendix B for a list of identified priority data sets (shown as Priority 1) as well as other emergency management information need topical areas and data (Priority 2 or greater). As such, they concur that if any county cannot participate due to time or resource issues, the other counties should do what they can to populate any missing data.

D. Data Custodian Roles

(1) General: Defining data custodian roles for Emergency Management datasets is different than for past MetroGIS endorsed regional solutions. For the previously implemented regional solutions, an organization with a direct business need was identified that justified taking on regional data responsibilities. This situation has not and is not expected to materialize for the Emergency Preparedness Information Need. Hence, the proposed interim solution calls for the seven counties to oversee work beyond their normal jurisdictions to benefit from region-wide data processing efficiencies where a multi-county jurisdiction is not available.

The premise for this proposal is that each county has similar Emergency Management needs and should save effort by dividing custodial responsibilities for Emergency Management regional datasets. Each county would only have responsibility for a share of the Emergency Management datasets. In other words, having each county process 1/7th of the data files for the whole region takes less time than having each county process all the data files for their individual county. This procedure is also expected to decrease the total number of requests to many specific data sources already relied upon. In short, the proposed shared custodial responsibilities are expected to result in efficiency benefits for all.

(2) Hierarchy of Custodian Roles

The proposed solution creates the following hierarchy of custodian classes:

- Data Source
- Local Aggregator
- Regional Emergency Management Theme Manager
- Regional Emergency Management Data Coordinator

A diagram is provided on page 4 that illustrates the relationship between and among these data custodian roles. An explanation of these relationships follows.

Data Sources: This is the starting point for all regional Emergency Management data solutions. The producing organization (often a regional, state or federal agency) may or may not have a role other than to permit access to their data. The goal is to first acquire their data, and secondly to achieve buy-in from these organizations, where possible, to update their source data with modifications made through the data refinement objectives associated with the proposed Interim Emergency Management Solution. Ultimately, an ongoing partnership is preferred with these organizations to not only integrate the data enhancements made via the Interim Solution, but also to support a process whereby they update the data enhanced by the MetroGIS community with new data that they produce. The Regional Theme Manager would be the primary contact with each Data Source.

Local Aggregator: A guiding principle of proposed Interim Solution is that local government entities often produce the best available Emergency Management-related data. Local Aggregators are those closest to the source of information, which is usually county-level

government. The seven Metro Area counties are proposed to serve in this capacity. Each Local Aggregator would be responsible for:

a) Arranging to access information from each organization that produces "best available" local data for their jurisdiction. Local data may come from a county, city, school district, emergency service provider or other local organization.
b) Coordinating the compilation of the "best available" local data for their respective county's jurisdiction that they acquire from all available organizations, for each Regional Emergency Management dataset.
c) Processing the local data to integrate it into the Local Aggregator's component of the Regional Emergency Management Dataset.
d) Documenting the updated component of the Regional Emergency Management Dataset.
e) Maintaining the updated component of the Regional Emergency Management Dataset.
f) Submitting updates of their respective Regional Emergency Management Dataset component to the Regional Emergency Management Theme Manager on an agreed-upon schedule.

These compilations must be processed to be compatible (align) with other regional Emergency Management datasets, as well as other regional datasets endorsed by MetroGIS, using the associated data standards.

The counties (Local Aggregators) are expected to use the standardized process and data standards explained in this document along with any modifications agreed upon during testing of the Interim Solution. In particular, the seven county-based compilations must be processed to be compatible with other regional Emergency Management datasets and other MetroGIS-endorsed regional datasets.

The Workgroup would define "Best Available Data" during the Interim Solution. The focus would be on assembling and enhancing existing data during the Interim Solution. Development of new data, from scratch, would not be undertaken until a formal needs assessment is conducted from the users' perspective, unless the effort would be minimal and the need great.

Where local interests, other than those of the Local Aggregator, have knowledge of the data that comprise an endorsed Emergency Management dataset, efforts should be made to formally incorporate them into the standardized review and update process.

Regional Theme Manager: One organization, the Regional Theme Manager, would have responsibility for coordinating the efforts of each Local Aggregator pertaining to a specified Regional Dataset and assembling the data components compiled by the seven Local Aggregators into a Regional Dataset. This coordination function applies not only to the data itself but also to advocating for solutions to policy obstacles, including but not limited to data standards, organizational responsibilities, and data access policies.

An organization may serve in the capacity as Regional Theme Manager for more than one Emergency Management Dataset. This role is similar to that performed by designated Regional Custodians for other MetroGIS endorsed regional data solutions. A Regional Theme Manager may also serve as a Local Aggregator for the same data theme.

During testing and refinement of the proposed Interim Solution, the Workgroup would seek out organizations with sufficient resources willing to serve in this capacity. Once the process is refined, the benefit of affirming these designations by the MetroGIS Policy Board is anticipated.

The creation of the initial regional datasets begins with the Regional Theme Manager. The Theme Manager will be expected to compile a preliminary regional dataset from the Data Source geo-process data and create county-based theme files. The Regional Theme Manager will then distribute the resulting seven county-based components to each Local Aggregator for updating and enhancement.

All data distributed by the Regional Theme Manager to the seven Local Aggregators will take place within the spatial file. The Local Aggregators are then expected to return updated data to the Regional Theme Manager within a timeframe to be determined by the Workgroup. As updated datasets are received from the Local Aggregators, the Regional Theme Manager will merge them into a single regional dataset. The Theme Manager will then submit the updated regional Emergency Management Dataset to MetroGIS, along with proper documentation, for distribution via the Emergency Management Resources Website and other appropriate applications.

Regional Emergency Management Data Coordinator:
The MetroGIS Coordinating Committee serves in this capacity for each of the previously implemented MetroGIS-endorsed regional data solutions. In each of the other cases, a single dataset was involved, which is not the case with the proposed Emergency Management solution. As such, during the testing of the Interim Solution, the Emergency Management Workgroup would serve in this capacity to ensure that coordination can be achieved among the many datasets anticipated to be involved. During the Interim Solution, the Workgroup would be responsible for recommending a process for coordinating with other regional data solutions via the MetroGIS Coordinating Committee.

E. Custodian Data Responsibilities (Process and Procedures)

The following Process and Procedures are proposed for testing and refinement during the Interim Solution. They serve as the preliminary Regional Policy Statement for the Emergency Management Information Need, with the understanding that this is a working document during the period of the Interim Solution.

Dataset Specifications: It is expected that most of the data sources for Emergency Management data will be in the form of an address and be best suited to representation with point data. To ensure interoperability, these data would need to be processed to be compatible with other MetroGIS-endorsed regional datasets. General specifications for that proposed data processing are as follows:

- The Lawrence Group Street Centerline and/or Parcel data will be used for address matching.
- Finished data will be in UTM 15 NAD83 coordinates.
- For datasets that are small enough to manually assign geographic locations in an efficient manner, these locations would be placed using the 1997 or later DOQs supplied by the Metropolitan Council.
- The Regional Theme Manager will enforce file and table field naming conventions.
- Metadata, conforming to MetroGIS standards, are required for all datasets.

Compilation
a) Transactional Data Sources: It is assumed that the source of most data will be from existing databases maintained by non-county entities. It is the responsibility of the Local Aggregators to research these locations and gain permission to acquire these transactional data. Datasets assembled from existing databases are to maintain all records from the original database query. Any changes to the original dataset would be provided to the original supplying agency for update into the parent transactional database. Once "Refinement" has been completed, the Local Aggregators would negotiate with the organizations from which the Source Data was obtained to establish who has ownership rights for the final spatial file and all data contained within it as well as redistribution rights, restrictions and limitations.

b) "New" (From Scratch) Data Sources: Some Emergency Management information needs may require data to be assembled from scratch. Until such time that definitive information need priorities are established from the Emergency Management users' perspective, such new data development will not be pursued unless minimal resources are involved and there is a critical need for the data. In the latter case, the Workgroup would consult with the MetroGIS

Coordinating Committee regarding the appropriateness of pursuing development of the desired new data.

c) Existing Spatial Data Sources: If the Regional Theme Manager assumes responsibility for an existing Emergency Management dataset for which a spatial file exists and is maintained by another agency, they may begin with that data. Doing so is allowable, since it would expedite turnaround time for refining the Interim Solution protocol. This is only a recommended long-term process if MetroGIS Emergency Management standards can be maintained. For Emergency Management datasets housed at MetroGIS, the Local Aggregators should review the county-based components of each regional Emergency Management dataset. Because these datasets have already been "Processed" and "Geocoded", the next course of action would be "Distribution". The Workgroup would be responsible for proposing actions by MetroGIS to resolve any inter-organizational policy issues of security and data access.

d) Processing: The MetroGIS Emergency Preparedness Workgroup will work with each Regional Theme Manager and the respective Local Aggregator to recommend MetroGIS action on standards needed to ensure that Emergency Management datasets are interoperable across the seven-county region.

The Regional Theme Managers would be responsible for processing assigned regional Emergency Management dataset(s) into a spatial data layer and completing a preliminary update of the dataset(s). Processing may involve manual or automated (geocoded) placement. In either case, the address field must accompany the geography. All transactions must be inclusive within the spatial layer. Each transaction must contain a field stating whether the address is matched or unmatched to a location. The pre-processed, compiled data and the post-processed spatial data must have equal record counts. The preliminary update will use sources and knowledge available to the Custodian. All Emergency Management datasets will be compiled in UTM15 NAD83 coordinates.

e) Distribution: Once the Regional Emergency Management Theme Manager has processed and updated the assigned Emergency Management dataset(s), they would be divided into 7 county-based geographic subsets. The Theme Manager would then distribute the subsets to the respective Local Aggregators for "Refinement".

f) Refinement: Upon receiving a subset of Emergency Management data from the Regional Theme Manager, each Local Aggregator will review these data, make the appropriate modifications, and return the corrected subset to the Theme Manager, along with documentation of changes, additions and processing. Each Local Aggregator would update their individual subset using the supplied audit fields as resources to show edits to any transactions. Upon completion of editing, each Local Aggregator would return the subset to the Theme Manager within a timeframe established by the Workgroup. The turnaround time may vary among datasets.

g) Metadata: All Regional Theme Managers would be responsible for supplying metadata for each spatial dataset they submit to MetroGIS for distribution. The metadata would be expected to conform to MetroGIS standards. The first submission can be in abbreviated form, which will be loaded to standard form.

h) Restoration: The Regional Theme Manager would reassemble the seven county components into a complete dataset for the seven-county region and update the metadata accordingly using documentation from the Local Aggregator.

i) Submission to MetroGIS: The Regional Theme Manager would submit the regional Emergency Management dataset and metadata to MetroGIS for posting to the Internet-based Emergency Preparedness Application. Emergency Management spatial datasets may also be available on the MetroGIS DataFinder website with data access password protection, as

appropriate. Metropolitan Council staff assigned to support MetroGIS functions will post it to the Emergency Preparedness Application and MetroGIS DataFinder websites and update the metadata record accordingly. Subject to internal approval, the Metropolitan Council will host the Emergency Preparedness Application website, in accordance with its responsibilities as primary sponsor of MetroGIS.

j) Bi-Annual Update and Review: In order to keep Emergency Management datasets current and accurate, the maintenance process must be ongoing. For the Interim Solution, the Workgroup has determined that a two-year update cycle will suffice, with the understanding that some datasets will not require as much attention. The process from Compilation through Submission would be repeated by the respective Regional Theme Manager for each Regional Emergency Management dataset supported. The concept of a User Satisfaction Forum, which is the method used to identify desired enhancements for other endorsed regional data solutions, will be investigated as an option for maintaining satisfaction with regional EP data solutions.

k) Coordination with data sources: Most data sources are anticipated to involve existing databases that are developed and maintained by non-county entities. Often these data are publicly available but may contain restrictions on their use. Once "Processing" and "Refinement" occur, property rights become less clear. Coordination with data sources is important since these sources may continue to supply information that would otherwise need to be collected by data custodians. The Regional Theme Manager and Local Aggregators will be expected to establish with the data sources:

- What rights and restrictions apply the data use,
- How anomalies and updates will be reported to data sources, and
- How future updates will be supplied by the data sources.

Local Aggregators will be expected to describe the local source data in the metadata submitted to the Theme Manager. Theme Managers will be responsible for documenting the original data source used at the beginning of the data acquisition process.

F. Outreach – Building Intergovernmental Relationships

Outreach efforts will continue to focus on building strong relationships between the GIS community and the Emergency Management community. Many emergency managers have not adopted GIS technology in their work because they may not be aware of its value, they may not know who to contact or may be hesitant to adopt unfamiliar technology. The Outreach subgroup works with emergency managers to demonstrate how GIS professionals and technology may be useful in addressing emergency planning, response and recovery responsibilities. When emergency managers understand the value of GIS technology, they will be interested in using it. This interest gives GIS professionals the chance to understand detailed emergency management needs, which allows complete and accurate information to be developed and delivered.

Activities of the Outreach workgroup are closely linked with similar activities of the Governor's Council on Geographic Information (GCGI) and have included GIS presentations at the annual Governor's Conference for Emergency Managers, the Minnesota Emergency Management Association conference, and Emergency Management educational workshops. Working relationships are being established with key leaders in local, regional, and state emergency management agencies in the state including city and county emergency managers, Homeland Security and Emergency Management (HSEM), and the Minnesota National Guard.

G. GIS Resource Organization

Activities related to organizing GIS resources are also closely linked with similar activities of the Minnesota Governor's Council on Geographic Information (GCGI) and have been endorsed and are actively supported by the Minnesota GIS/LIS Consortium. The primary focus is to increase awareness of the role of GIS professionals in helping the emergency management community become more aware of the technology and the services GIS professionals can provide to them. The subgroup also seeks to increase GIS professionals' awareness of what is needed by

emergency managers, how best to work with them and to recruit emergency management data refinement and maintenance participants.

To this effect, presentations are made at the annual Minnesota GIS/LIS Conference. A workshop titled “Emergency Management for GIS Professionals” was also organized by the subgroup. In May 2005, 65 GIS professionals attended the workshop. The MetroGIS EP Workgroup has developed an increased emphasis in the seven-county metropolitan region through county GIS contacts and GIS users groups. County GIS resources have been organized to support the data development and refinement effort and distribute the related workload.

SECTION III. CONCLUSION

This Regional Emergency Management data refinement process proposed in this Project Report has been prototyped through a combined effort of MetroGIS and GIS analysts in the seven-county Metropolitan Area. The Workgroup believes that sustained support of this process would accomplish the goal of faster access by Emergency Managers to accurate and reliable spatial data critical to emergency management decision-making. It is the Workgroup’s hope that the State of Minnesota’s Emergency Management officials will someday endorse the process defined herein. This interoperability at all levels is necessary to ensure that all levels of government have accurate and consistent datasets.

APPENDIX A

The members of the three subcommittees of the Emergency Management Workgroup (*Data Development And Deployment, Building Relationships With The Emergency Management Community, and Organizing GIS Resources*), who participated in the development of the proposed interim solution, as well as of the Workgroup's Steering Committee are listed below. The *Steering Committee* provided oversight and direction to the effort as a whole

Steering Committee:
Dakota County: Randy Knippel Co-Chair
Metropolitan Council: Rick Gelbmann Co-Chair
LOGIS: Keith Anderson
Ramsey County: Carla Coates
City of Maplewood: Chad Bergo
Hennepin County: Tim Zimmerman
Metropolitan Emergency Services Board: Gordon Chinander

Development And Deployment Subcommittee
The following individuals represent each of the seven metropolitan area counties and the Metropolitan Emergency Services Board:

LOGIS – Keith Anderson, Chair
Anoka County – John Slusarczyk
Carver County – Brad Rupert
Dakota County – Todd Lusk
Hennepin County – Tim Zimmerman
Hennepin County – Scott Simmer
Ramsey County – Carla Coates
Scott County – Jim Bunning
Washington County – Adam Snegosky
Metropolitan Emergency Services Board – Gordon Chinander

Building Relationships With The Emergency Management Community Subcommittee
Ramsey County – Carla Coates, Chair
John Studtmann, Individual
Sarah Schrader, Goodhue County
Mark McCormick, Civil Air Patrol
Judd Freed, Ramsey County

Organizing GIS Resources Subcommittee
City of Maplewood – Chad Bergo, Chair
Jennifer Wittkopf, City of Prior Lake
Carla Coates, Ramsey County
Keith Anderson, LOGIS
James Beal, UCIT Inc.

APPENDIX B

(data assignments)