

GIS Information Policy for Emergency Management in Wisconsin

A Wisconsin Land Information Association Emergency Management Task Force White Paper

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A S S O C I A T I O N

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In order to prevent, protect against, respond to, and recover from threats and hazards, entities at all jurisdictional levels require the timely acquisition of up-to-date, comprehensive, scalable, and accurate spatial information and data. Multi-jurisdictional and multi-disciplinary collaboration facilitates spatial data acquisition, distributes costs, reduces duplication, and leverages expertise and capabilities. But, collaboration should be supported by a consistent framework that enables entities at all jurisdictional levels to communicate and coordinate with each other efficiently and effectively. Thus, as illustrated in the sections above, a need exists in Wisconsin to:

- Develop a comprehensive and coordinated statewide plan to facilitate the sharing of spatial data that clearly delineates the roles and responsibilities of local, state, and federal entities, defines interim objectives and milestones, sets timeframes for achieving objectives, and establishes performance measures;
- Establish a spatial data coordination council “that interfaces and coordinates with private, academic, military, Tribal communities, and government agencies on homeland security geospatial information issues” and emergency management. This council should have the authority to develop and enforce standards and policies at the state level.
- Develop fully productive spatial data sharing relationships within State government, between State government, other governmental entities (local, regional, and federal), and the private sector, and between neighboring jurisdictions at all levels of government;
- Develop State and local capabilities to gather, analyze, disseminate, and use spatial data (*in real-time*) regarding threats, vulnerabilities, and consequences to support prevention and response efforts; and
- Provide appropriate incentives to non-governmental entities to encourage spatial data sharing with the State, e.g., grants, regulations, tax incentives, and regional coordination and partnerships.¹

However, after the terrorist attacks of September 11, 2001, homeland security concerns prompted the institution of policies and statutes that restrict access to information, including spatial data, which was once publicly available and which was used to meet a variety of needs. As a result, government entities now must weigh security concerns against the benefits of widespread use of spatial data; they must consider carefully what data to restrict, what data to

¹ Adapted from three sources: 1) Post-hearing Questions from the September 17, 2003, Hearing on “Implications of Power Blackouts for the Nation’s Cybersecurity and Critical Infrastructure Protection: The Electric Grid, Critical Interdependencies, Vulnerabilities, and Readiness,” released December 08, 2003. GAO Report GAO-04-300R. GAO Website, accessed January 17, 2006, <http://www.gao.gov/htext/d04300r.html>; 2) FY 2006 Homeland Security Grant Program: Program Guidance and Application Kit. December 2005. Appendix H: Geospatial Guidance, Department of Homeland Security, USDOJ Website, accessed January 16, 2006, www.ojp.usdoj.gov/odp/docs/fy2006hsgp.pdf ; and 3) GIS Needs Assessment Project Presentation, Wisconsin Emergency Management, published 2005, accessed January 6, 2006, http://emergencymanagement.wi.gov/announcements_detail.asp?annid=18

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share and with whom, and what data to release to the public. This is not an easy task, particularly with little national or statewide guidance. For example, shadow of dam reports, which map the areas that would be impacted if a dam were to breach and which indicate the potential resulting deaths, are restricted to government personnel. At issue is the potential for misuse of this information by terrorists and the undue fear its release might generate in the community;² on the other hand, some would argue that all too often there is an over-classification of information³ and that “openness equals security.”⁴ For instance, public access to this information might prompt citizen oversight, thus holding accountable those officials responsible for dam maintenance. In addition, if made aware of this information, citizens living in the shadow of the dam could obtain flood insurance to minimize their potential loss.⁵ It also is worth noting that restricting access to information comes at a cost – for example, over \$6.5 billion nationwide in fiscal year 2003; “every secrecy decision generates a stream of direct costs to the taxpayer, in addition to the indirect costs of inefficiency...information asymmetries”⁶ and administrative overhead.

Additionally, access to government information is sometimes restricted for reasons other than national security concerns, including the proprietary nature of the data, a desire to recoup data creation costs, privacy protections, or “even governmental embarrassment of one sort or another.”⁷ Whether or not government information, such as spatial data, is made publicly available can depend on staff preferences or on individual local government policies. For example, in Wisconsin, despite state open records laws, some government entities charge significantly more than cost of reproduction for copies of their digital orthophotos, digital elevation models (DEMs), and parcel maps; albeit, these entities contend that such data is legally exempt. At the same time, communities may be willing to share their spatial data for

² Bellovary, Tony. Bay-Lake Regional Planning Commission, Wisconsin. Personal Communication, December 21, 2005.

³ Indeed, Thomas H. Kean, Chair of the 9/11 Commission and former Governor of New Jersey, quoted in Cox News Services on July 21, 2004, stated that “Three-quarters of what [he] read that was classified shouldn’t have been.” “The material Mr. Kean was reviewing included the most recent and sensitive terrorism-related intelligence and counterterrorism information.” In addition, Rodney B. McDaniel, executive secretary of the National Security Council under President Reagan, quoted in the Moynihan Commission report (1997, 36), stated that only 10% of classification was for “legitimate protection of secrets.” Cited in “Rising Tide of Secrecy”, Statement by Thomas S. Blanton, National Security Archive, George Washington University, March 2, 2005. Hearing on “Emerging Threats: Over-classification and Pseudo-classification”. Subcommittee on National Security, Emerging Threats, and International Relations, Committee on Government Reform, U.S. House of Representatives. Accessed January 17, 2006. National Security Archive Website, <http://www.gwu.edu/~nsarchiv/news/20050302/#testimony>

⁴ Blanton states that the balance between security and the public’s right to know is a false dichotomy. Rather, “[t]he tension is actually between bureaucratic imperatives of information control versus empowering the public and thus making us more safe.” In “Rising Tide of Secrecy”, National Security Archive Website, <http://www.gwu.edu/~nsarchiv/news/20050302/#testimony> See also, Onsrud, Harlan J. 2003. “Access to Geographic Information: Openness versus Security.” In Cutter, S., D. Richardson and T. Wilbanks (Eds.), *Geographic Dimensions of Terrorism* (New York: Routledge), 207-213. National Academy Press Website, accessed January 17, 2006, <http://books.nap.edu/catalog/11030.html> and see Tombs, R. Bradley. 2004. “Policy Review: Blocking Public Geospatial Data Access Is Not Only a Homeland Security Risk.” *URISA Journal* 16(2): 49-51. URISA Website, accessed January 17, 2006,

⁵ Alan Lulloff, Project Manager, Association of State Floodplain Managers, Inc., personal communication, December 13, 2005.

⁶ “Rising Tide of Secrecy”. National Security Archive, <http://www.gwu.edu/~nsarchiv/news/20050302/#testimony>

⁷ Solicitor General of the United States, Dean Erwin Griswold, Washington Post, February 15, 1989. Cited in “Rising Tide of Secrecy”, National Security Archive, <http://www.gwu.edu/~nsarchiv/news/20050302/#testimony>

emergency purposes free of charge, albeit with restrictions on redistribution, if they will benefit in return (e.g., more accurate floodplain layers).⁸

Non-governmental entities, on the other hand, such as private companies, may be reluctant to share information because there “has been the lack of clarity regarding the benefits and associated liabilities in sharing information within and between industry sectors and with the government. For example, information sharing could lead to allegations of price fixing, restraint of trade, or systematic discrimination against certain customers; it could raise privacy concerns, expose proprietary corporate secrets, or reveal weaknesses and vulnerabilities that erode consumer confidence and invite hackers [or terrorists]...Overcoming these concerns [will require] an informed position on the existing legal framework.”⁹

As stated above, several fundamental but difficult questions need to be answered with regards to data sharing and public access, including “who should share what information, when, how, why and with whom?” A few national documents address these issues, including:

- The 2004 RAND report “Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information,” for example, “offers an analytical process that can serve as an initial framework for assessing publicly available geospatial information in order to understand its homeland security implications.” This analytical process “[provides] a structured and consistent approach to identifying sensitive geospatial information; [ensures] that all relevant factors are weighed; [and provides] an explicit methodology and rationale to justify and explain the decision.”¹⁰
- The Federal Geographic Data Committee’s (FGDC) “Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns” builds on the RAND report by providing “standard procedures to: 1) [i]dentify sensitive information content of geospatial data that pose a risk to security; [and] 2) [r]eview decisions about sensitive information content during reassessments of safeguards on geospatial data...If safeguarding is justified, the guidelines help organizations select appropriate risk-based safeguards that provide access to geospatial data and still protect sensitive information content.”¹¹ Importantly, this report also provides a “Decision Tree for Providing Appropriate Access to Geospatial Data in Response to Security Concerns” (Fig. 1). For additional resources, refer to “Emergency Management and Geographic Information Systems (GIS) – Information Policy Resources: Data Sharing, Public Data Access, Data Security, and Privacy”.

⁸ Bellovary, Tony. Bay-Lake Regional Planning Commission. Private communication, December 14, 2005

⁹ Personick, Stewart D. and Cynthia A. Patterson, (eds.). Critical Information Infrastructure Protection and the Law: An Overview of Key Issues, p. 2. National Academies Press, accessed January 16, 2006, <http://books.nap.edu/catalog/10685.html>

¹⁰ Baker, John C. et al. “Mapping the Risks: Assessing the Homeland Security Implications of Publicly Available Geospatial Information.” 2004. Prepared for the National Geospatial-Intelligence Agency. National Defense Research Institute, p. 6. RAND Website, Accessed January 16, 2006. http://www.rand.org/pubs/monographs/2004/RAND_MG142.sum.pdf

¹¹ FGDC. 2005. “Final Guidelines for Providing Appropriate Access to Geospatial Data in Response to Security Concerns,” p. 1. FGDC Website, accessed January 17, 2006, http://www.fgdc.gov/fgdc/homeland/access_guidelines.pdf

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- In order to promote a standardized model for building collaboration and interoperability across a national infrastructure framework, the Federal Department of Homeland Security (DHS) published a “Geospatial Enterprise Architecture” document to guide state and local government investments. This document is available by e-mailing gmo@dhs.gov.

As of yet, no consistent statewide policy or guidelines exist in Wisconsin that address what spatial data sets should be made accessible and what should be restricted, nor that specify who can make these determinations, with the exception of the WDNR’s “Water Supply System Information and Maps in Community Comprehensive Plans.”¹² Moreover, government entities at all levels in Wisconsin are developing their own policies for spatial data sharing and public access, often without regard for statewide emergency-management needs or overall statewide goals. Thus, answering any question about data access on a regional or statewide level is virtually impossible, and obtaining data on a regional or statewide level can be down right onerous.

Unfortunately, spatial data sharing in Wisconsin largely occurs informally. For example, the federal Emergency Planning & Community Right to Know Act (also known as Title III of Sarca or as EPCRA; 42 U.S.C. 11001 et seq. (1986)), which was designed to enable communities to protect public health, safety, and the environment from chemical hazards, establishes a State Emergency Response Commission (SERC), Emergency Planning Districts, and a Local Emergency Planning Committee (LEPC) for each district within each state. EPCRA specifies that “each emergency response plan, material safety data sheet, list described in section 11021(a)(2) of this title, inventory form, toxic chemical release form, and follow-up emergency notice shall be made available to the general public.”¹³ This information was made publicly available statewide in Wisconsin as per the requirements of the statute through the Wisconsin Emergency Management website; but, after 9/11 it was removed from the site. This information also is maintained at the local level; however, as is often the case, no formal written policy as to who can get access to this information, and by what criteria, is in place. In one county in Wisconsin, for instance, this is handled informally through the LEPC. A data requester must submit a written request which specifies identifying information, their position, and reason for needing the data. The LEPC then reviews and verifies this information to determine whether or not to release the EPCRA data to the requester. By requiring the data requester to identify themselves and by verifying their information, this county hopes to minimize abuse of the information. However, without a formal written policy in place, access decisions may be inequitable or inconsistent depending on the viewpoints of those serving on the LEPC.

Currently, Wisconsin Emergency Management (WEM) is using informal means to obtain needed spatial data sets. But, WEM operations are highly dependent on spatial information and data obtained from many other agencies, such as the Wisconsin Department of Natural

¹² Wisconsin Department of Natural Resources (WDNR). 2003. Water Supply System Information and Maps in Community Comprehensive Plans – Addressing Security Concerns. WDNR Website, accessed January 20, 2006. http://dnr.wi.gov/org/es/science/publications/SS_988_2003.pdf

¹³ EPCRA. Title 42. Ch. 116, Sec. 11044. Public availability of plans, data sheets, forms and followup notices. Accessed January 18, 2006. http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=browse_usc&docid=Cite:+42USC11044

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Resources (WDNR), Wisconsin Department of Transportation (WDOT), Wisconsin Department of Agriculture, Trade & Consumer Protection (DATCP), Public Service Commission of Wisconsin (PSC), U.S. Geological Survey (USGS) and Federal Emergency Management Agency (FEMA). For example, the WDNR has spatial data, such as drinking water facilities, dams, rivers, lakes, groundwater, forestry, floodplains, and so forth, which can be used by WEM to assist in emergency management. In turn, the WDNR would benefit from receiving plume information for nuclear and chemical releases from WEM to determine what environmental hazards may result in the event of an accidental release.¹⁴ Formal data sharing agreements and data standards would greatly facilitate the compilation and integration of statewide GIS data sets needed by WEM.

During an emergency, spatial data policies that limit access or that require a fee may be waived. But, as an event unfolds, community Emergency Operation Centers (EOCs) will add data (e.g., staging locations, damage tracks, etc.) and update maps in real-time as new information becomes available. Those responding to the crisis at all levels of government will need access to this information immediately; they cannot afford to waste critical time, particularly when lives are at stake, trying to determine the appropriate procedures and protocols for acquiring or releasing spatial data. "In some cases, there [may not be] enough time to get the data and to become familiar with the content and format to support the incident request."¹⁵ Clearly, it would be very beneficial either to build a centralized GIS data repository or to make the information accessible via an "e-sponder portal" in advance for emergency planning and mitigation. But, without widely adopted model data sharing agreements or licensing templates and with potentially over 72 different information policies statewide, this could be administratively and financially prohibitive.

Recommendations:

Ultimately, if these spatial data systems are operated in isolation, their full benefit might not be realized. For example, if a disaster occurred involving multiple neighboring jurisdictions or affecting much of the state, data acquisition and integration would not be easy or quick. Ideally, given the time-sensitivity, regional nature, and life-threatening potential of all hazards, spatial data and spatial analysis tools should be made accessible to a large number of users for emergency management through regional or statewide coordination and through a standardized and centralized system. Model data policies should be developed and adopted that address such things as data content standards; metadata standards; data sharing formats; symbology standards; coding and naming conventions; data update procedures and stewardship responsibilities; and data privacy and security procedures.

In order to facilitate spatial data sharing for emergency-management in Wisconsin, as illustrated above, there is a need to identify and synthesize information policies and laws related to data sharing, data security, and public access of spatial information and data. To this end, the following recommendations are proposed:

¹⁴ WEM GIS Needs Assessment, p. 69.

¹⁵ Wisconsin Emergency Management GIS Needs Assessment. Final Report. July 2005. Prepared by ESRI-Minneapolis, WEM Website, accessed January 17, 2006.

<http://emergencymanagement.wi.gov/docview.asp?docid=3385&locid=18>

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- Establish or assign an interagency workgroup or similar body to identify and synthesize information policies as well as relevant laws and court cases related to data sharing, data security, and public access of emergency management-related spatial data. The Wisconsin Land Information Association's (WLIA) Information Policy Task Force may be one such group, which could work in coordination with the Office of the Geographic Information Officer (GIO), Department of Administration, and Wisconsin Emergency Management (WEM), and all other interested stakeholders to address these issues. Alternatively, a GIS data-sharing policy coordination committee headed by the GIO could meet this need. This "would allow WEM to focus more on planning and responding to emergencies and leave the data and data-sharing policy coordination issues to the GIO, which would increase efficiency within WEM and other state agencies."¹⁶
- Revive the Wisconsin Land Information Program (WLIP) Annual Survey of Land Information Offices (LIOs), but update and extend it to include other entities and to identify information policies related to data security, data sharing, and public access, particularly as they relate to emergency management-related information and GIS data. Through the efforts of a working group under the State Cartographer's Office, the WLIP Annual Survey also might be integrated with the new NSGIC/FGDC-sponsored RAMONA national web-based survey¹⁷ to provide a vehicle for distribution.
- Create a centralized, statewide inventory tool, such as a website, that would allow for the discovery, indexing, categorizing and analysis of local and state spatial information policies. This would facilitate the identification of best practices with regards to spatial data policies and procedures and may aid in the development of model data sharing or licensing agreements.
- Engage all stakeholders – GIS professionals, emergency management, law enforcement, public health, private citizens, and so forth – in the decision-making process about what spatial data policies should be adopted. What spatial data should be protected and what should be made publicly available? Who should make these determinations and by what criteria? Do these criteria reflect the values and goals of local communities and of the State of Wisconsin?
- Develop and adopt statewide, emergency management-related spatial data policy standards and guidelines, as well as Standard Operating Procedures (SOPs),¹⁸ to ensure an appropriate balance between the protection of sensitive spatial data sets with public access, to guarantee sufficient privacy protections, to aid local communities in responding appropriately and equitably to spatial data requests, and to facilitate the timely acquisition of GIS data by emergency management professionals and responders.

¹⁶ WEM GIS Needs Assessment, p. 86.

¹⁷ Ramona is a GIS Inventory tool designed to work in concert with the Geospatial One Stop Portal; it is produced by the National States' Geographic Information Council (NSGIC) as a tool to enable States to track the status of GIS adoption and capacity. <http://www.gisinventory.net>

¹⁸ Standard Operating Procedures (SOPs) are formal written guidelines or instructions for handling events as they occur.

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Data sharing policies, for example, should specify how information is acquired, accessed, shared, and used. They should define the frequency with which the GIS data should be updated and the procedures for updating each dataset. In addition, data policies should address pertinent data security considerations, such as who is authorized to view which attribute columns within a particular data set, what are the redistribution and use rights, in what format and by what mechanism can the data be distributed, and where can the data be stored. Data policies also are needed to provide local communities and emergency responders with clear direction as to what are the appropriate data handling, data sharing, and public access procedures and requirements during an emergency.

- Develop guidelines to ensure compliance with appropriate sections of the Wisconsin State Statutes on information privacy, including in the acquisition, access, use and storage of personally identifiable information (e.g., Chapter 19 – General Duties of Public Officials, Sub-Chapter II – Public Records and Property of the 2005 Wisconsin State Statutes, <http://www.legis.state.wi.us/rsb/stats.html>). Ensure on an ongoing basis that appropriate personnel, structures, training, and technologies are in place to ensure that information is shared in a manner that protects information privacy according to Wisconsin State Statutes and federal law as appropriate.
- Educate local government and state agency employees, particularly those who respond to open records requests, about the types of spatial information and GIS data that can and cannot be released under existing state and federal law and policy guidelines.
- Promote a culture of spatial information and GIS data sharing and public access by assigning personnel, dedicating resources, and providing incentives.