

Sharing Parcel Data to Protect and Rebuild Communities: Results and Recommendations

A Workshop to Explore the Possibilities for Data Sharing

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Data Subcommittee**

February 25, 2008

New Orleans Louisiana

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Introduction:

The purpose of the “Sharing Parcel Data to Protect and Rebuild Communities” workshop was to explore the advantages, opportunities and issues of sharing parcel data from government-to-government. The objectives of the workshop were:

- to document specific federal programs and/or applications that rely on or could benefit from local parcel data;
- to document what services and/or information federal agencies could provide back to local governments from the use of the parcel data; and
- to identify and document the action items and responsible parties to move forward with parcel data sharing.

The FGDC Cadastral Data Subcommittee (Subcommittee) and the International Association of Assessing Officers (IAAO) have a common interest in identifying the parcel data needed by federal and state agencies and industry as well as identifying the partnerships and successes that could be achieved through shared efforts. The Subcommittee develops standards, encourages partnerships and coordinates the construction, maintenance and use of the Cadastral National Spatial Data Infrastructure (NSDI). IAAO also supports the development and implementation of cadastral standards and the training and certification of local parcel data producers.

This report provides the results of the input from the three components of the URISA/IAAO GIS and CAMA Conference in New Orleans February 24, 2008: 1) The pre-workshop report that summarized the business needs for parcel data from fourteen federal, state, private sector and Non Governmental Organizations (NGO) (Appendix A); 2) input from the workshop (Appendix B); and 3) the Observations and Recommendations that were derived from both.

The pre-workshop report provided background information on some of the concepts and standards that have already been developed to maximize the workshop time available for exploring opportunities and identifying the issues that need to be addressed during the workshop. Fourteen interviews were conducted with the purpose of describing each organization’s parcel data business needs and the services that these organizations provide back to local governments. This pre-workshop report is a cursory assessment and not a complete list of parcel data users or services. Interviewees include seven federal agencies, three states, one non-governmental organization and three private sector businesses.

The interactive portion of the workshop identified real and perceived issues that were barriers to government-to-government parcel data sharing (Appendix B). There were approximately ninety issues collected during the workshop. They were compiled, numbered and categorized. Items were then divided into two groups, those items that had an identifiable action and those that were general or study issues. Proposed actions were identified. General issues were not actionable and included issues that will need more study, refinement or definition to address such as intra-governmental cooperation, variations in state laws, regulations or policies and the absence of state coordination for parcel issues.

The observations include concepts and definitions that were developed by the authors, for the most part, as a result of ideas that were raised in the pre-workshop report and the workshop itself. The nuances of each of these concepts and definitions could and should be explored in much greater detail. Topics include a definition of assistance used to justify data sharing dividing assistance into two types, indirect services and direct assistance; a brief discussion of authoritative and trusted data sources; different types of data sharing that will require different approaches; a discussion of the digital divide in local governments and how it relates to the ability to share data; an incomplete listing of existing solutions to the identified issues and a call to compile a more complete list of best practices; and a description of what a national strategy will probably look like.

The recommendations in this version should be considered a first draft. The review process will refine these initial recommendations with the partners and that future meetings of the workgroup(s) will provide an opportunity to further assess the recommendations.

Observations:

The following observations were synthesized from the workshop discussions or are concepts that are particularly relevant to the issues.

Assistance: There are two types of services that can be provided to a local government that are used to justify government-to-government data sharing; *indirect services* and *direct assistance*. *Indirect services* are those products and services from Federal and State agencies, Non Governmental Organizations (Red Cross) and Industry that are provided to local government or its citizens. The delivery of these services can be more timely and effective if the organizations have access to the local governments parcel data. This includes emergency preparedness and response, more efficient delivery of low interest business and residential loans in times of disaster, protection from hazardous materials, wildland fires and flooding. *Direct assistance* comes in the form of resources to assist with parcel conversion, data maintenance and/or the publication of parcel data. Resources may include data that is needed for parcel conversion (orthoimagery or improvements to the reference grid), grant dollars, and/or technical assistance. *Direct assistance* supplements the local government budget for conversion, maintenance or publication. It creates a partnership environment where the costs for development or publication are shouldered by multiple parties. It is most applicable to communities that lack the financial resources and technical expertise to easily incorporate parcel conversion or data publication into strained budgets. *Indirect services* provide the justification for government-to-government sharing of parcel data for those communities that have the resources for a complete parcel management program but need further documentation and understanding of the benefits that they will receive for sharing their parcel data..

Authoritative Source:¹The characteristic of an *Authoritative Source* is an organization that creates and maintains the data, they are the recognized data steward and they have the authority to certify the data for a particular use which is frequently stated in statute. The County Assessor is the usual authoritative data source for parcel data attributes.

The GIS parcel boundary file has an interesting existing. It is often lumped together with the Assessor's parcel attributes but is in reality completely separate. The boundary file is a representation of the boundary but it is not the legal boundary. The authoritative data source for the legal boundary is the legal description that was developed by a survey and most often resides in the Clerk of the Courts Office. No one should make a legal decision based on a GIS parcel boundary file. So what is it? The GIS boundary file, if it was done to recognized standards, is a trusted representation of the legal description *with known limitations* (accuracy +/- 10 ft). The last three words are very important.

A *Trusted Data Source* is an organization, such as a state integrator that collects the data from an authoritative data source(s) and publishes it (usually a subset of the data with a

¹ Concept was expanded upon in August 2008, *Authority and Authoritative Sources: Clarification of Terms and Concepts for Cadastral Data*, FGDC Subcommittee for Cadastral Data, Internet, Aug 2008, <http://www.nationalcad.org/showdocs.asp?docid=1045&navsrc=Report&navsrc2=>

stated currency) to meet the needs of a broader user community. The Trusted Data Source is approved by the creator of the data as a distributor and as a consequence they are recognized as a trusted source for that data by the user community. The data has *known limitations* such as currency and that it includes only a limited subset of data (although adequate to meet the users needs).

If some one acquires data from an authoritative or a trusted data source it is simply a copy of that data whose value degrades over time relative to the rate of updates in the original data.

Coordination Issues: Inter and intra-governmental coordination is difficult because it is not part of most organization's core mission and is often meagerly funded. Inter-governmental is defined in this report as meaning across jurisdictions (multi-county) and intra-governmental describes activities within the same jurisdiction. The challenge of coordination is to recognize that *inter-governmental* sustainable solutions must address an organization's business needs and more importantly be institutionalized by incorporating the practices into regular business operations. *Intra-governmental* coordination is at a very detailed level of granularity and is beyond the scope of this effort. The workshop focus is principally on inter-government coordination.

Data Sharing Types: For the purpose of discussion four types of data sharing have been identified: intra-governmental, government-to-government, government-to-public and government-to-industry.

Intra-governmental data sharing is within the same level of government. Situations vary widely depending upon technical inter-operability and institutional arrangements. It is beyond the scope of this effort to address intra-governmental data sharing at the local level although the same concepts should apply.

Government-to-government data sharing, as used here, is between different levels of government and it is the focus of this effort. The parties include the authoritative and trusted sources and the users (see authoritative data sources). A user could be an adjoining county.

Government-to-public data sharing occurs as an interaction between the authoritative data source and the public. This can take many forms, on the digital side it generally means Internet access either through web servers or by data downloads. The public is generally defined as any person including the private companies. Government-to-industry, for the sake of simplifying the issues, is kept separate.

Government-to-industry data sharing has many forms that have not been well explored. The different types of relationships include open access, enhanced access, mutually beneficial partnerships, license agreements, and more. The resource issues of government-to-industry data sharing are similar to government-to-government data

sharing in that there are indirect and direct benefits to local governments (see Role of Industry).

Digital Divide: There are conditions in different communities that were expressed in terms of the *haves and have not's* implying an availability of resources. The difficulty with using this term is that there are many examples of *have not's* (populations under 1000) that are digitally enabled can take full advantage of parcel data both inside and outside of the Assessor's office while there are *haves* (population greater than 2 million) that can be viewed as digitally encumbered. Of course there are the expected situations in-between but it is necessary to use a better term to describe the issues. The term *digital divide* is used to describe a situation where governments do not comfortably exist in a digital world. There is a vast array of reasons that an organization could be considered digitally encumbered including the normally cited shortage of resources for conversion but less often cited is the absence of a business need for assessment, an inability to hire and retain technical expertise, substandard geometry and policies that restrict the use of parcel data.

Organizations that are digitally enabled are able to collect and maintain digital parcel information and have access to the skill sets and technical resources that enable the community to utilize the full value of their parcel information. These counties are able to apply parcel data internally to local business needs beyond the real estate tax system, building a parcel data asset and infrastructure that is used throughout the organization. Through government-to-government data sharing that are able to maximize the *indirect services* to their community from state and federal agencies and industry.

Before identifying the different types of barriers it is valuable to describe how some of the *have not's* became digitally enabled. First there is no doubt that parcel modernization does take resources but the strategies that are used have significantly different impacts. It has been the observation of the authors that there must be a certain quantity of parcels before technology becomes cost effective. The communities that are under the threshold can still effectively use manual methods to meet the Assessor's business needs. Effective solutions to this problems is to expand the geography until there is adequate mass to make conversion and maintenance cost effective and provide the improved product back to local governments. The same goes for technical expertise, it is not necessary to have the technical expertise in the local government office, this can be provided by a regional or state office with the local governments being users of that product. Arkansas has a technical staff of four individuals that is serving the *have not's* in the State. Montana is another excellent example of the strategy. There are 21 of 56 counties with populations ranging from 4,590 to 438. That and the State Legislature determined that it was cost effective for the Montana Department of Revenue to assume responsibility for converting and maintaining the approximately 900,000 parcels which has digitally enabled every county in the State.

The following are some of the barriers to digitally enabling an organization.

Local Government Business Driver for Parcel Conversion: In many rural counties the systems that have worked in the past continue to serve the local needs. These

may be systems that are not fully automated and they often reflect procedures that were institutionalized years ago. Typically there is neither funding base nor political pressure to change the current operations and the demonstrated benefit of change has not been made to county managers, county board members, assessment and parcel mapping staff. The benefit of data sharing with federal and state agencies has also not been made for these counties.

Technical Infrastructure: These are situations where the local agency does not have an internal information technology department nor does technical expertise to manage database and computer resources. These organizations are often captive to older technology that is often proprietary and requires custom applications to export the data.

Technical Expertise and Staffing: These are situations where the local government has in house computers but staffing for the parcel mapping, maintenance and assessment data collection are part time positions. In some cases staff may be splitting duties with non-parcel related duties such as snow removal or weed control. In these cases the local agency may not be able to participate in data sharing or even the completion of data collection because of conflicts with time and duties. Success with parcel and assessment systems in these counties has often been hard fought through individual determination of a single person or office. Adding new work loads for data sharing can be the final straw.

Policies: There are policies that governments have adopted that prevent data sharing with other government agencies. This is generally in the form of fees and license agreements. Even cost of reproduction fees can inhibit data sharing because of paper work required to issue a purchase order. The number of counties that have these arrangements is less than 10% but this is still an important issue.

Digital divide issues vary from state to state and between counties. The workshop highlighted these differences emphasizing the need for state driven solutions. Many of the insufficiencies at the local level can be addressed with funding, grants or other support but to acquire assistance it must be done within a plan that ensures adherence to standards with an end objective of government-to-government data sharing.

Existing Solutions: There are existing solutions that partially or wholly address some of the issues that were identified and there are existing Federal, State and Industry grant programs that can provide direct assistance to local governments. One of the objectives of this effort is to identify existing solutions and work them into a coherent strategy for parcel data development and data sharing. The following is a list of some of the known efforts that are relevant to the identified issues.

- *Core Data Standard* for published data²
- *Compliance Levels for State Stewardship*³

² FGDC Cadastral Data Subcommittee, *Cadastral NSDI Reference Document*, Oct 2007, Internet, [http://www.nationalcad.org/data/documents/Cadastral NSDI Reference Document v11.pdf](http://www.nationalcad.org/data/documents/Cadastral_NSDI_Reference_Document_v11.pdf)

³ FGDC Cadastral Data Subcommittee, *State Parcel Data Stewardship*, Sept 2007,

- *State Parcel Management Program Business Plan*⁴
- *Web Site for State and Local Parcel Data Contacts/Coordinators*⁵
- IAAO - Standards and a training program for Assessor Certification⁶
- NSGIC – Imagery for the Nation⁷
- State Parcel Management Programs (Montana, Florida, Utah, Tennessee, North Carolina, New Mexico, Arkansas, ...)

Role of Industry: The emphasis of the workshop was on government-to-government data sharing but data sharing and parcel applications can not ignore the role and contributions of private industry. In the past three to five years significant resources and many new industries have sprung up across the nation. These businesses are typically serviced based, web hosted, subscription for a fee applications. There are a wide range of the services and their value added products but they have a common need for locally generated and maintained parcel level data.

Historically there has been some resistance from local parcel producers in providing data to these private industry “corporate giants” which were viewed as taking the hard fought local efforts and turning them for a profit which did not return benefit directly to the parcel producer. As the parcel based value added service industry is evolving there is an opportunity to turn the tables from we-they to cooperative partnerships and enlightened self interest.

There are “good corporate citizens” examples that need to be fosters and encouraged. At the workshop several corporate models were presented and discussed that can provide *direct* and *indirect services* that can benefit to local parcel producer and the community they serve.

Education about these opportunities, development of state based business plans to identify the needs and recognition of the supporting efforts can lead to successful implementation for all parties.

National Strategy: The challenge of a national strategy is 1) there are over 4000 authoritative data sources and probably as many users in State and Federal Agencies and Non Governmental Organizations as well as the private sector; 2) although the sharing of parcel data can have great value to the users it is not the principle mission of these organization to collect or compile this data; and 3) similarly the Assessor’s role is to accurately assess the value of properties in their jurisdiction, the publishing of their data is not a core mission. A national strategy will necessarily account for these factors. A good strategy will consists of a set of defined roles for classes of organizations with defined products or processes that are reviewed by the stakeholders, and can be institutionalized within that organization. These will be plug-and-play responsibilities that are not an operational burden. The most important and more difficult role is for the States who must

[http://www.nationalcad.org/data/documents/State Stewardship for Cadastral Data Sets Sep 2007.pdf](http://www.nationalcad.org/data/documents/State_Stewardship_for_Cadastral_Data_Sets_Sep_2007.pdf)

⁴ FGDC Cadastral Data Subcommittee, Sept 2006, Internet, <http://www.nationalcad.org/data/documents/Parcel-Mgt-Prog-Business-Plan-v1.pdf>

⁵ FGDC Cadastral Data Subcommittee, Land Records Inventory , http://www.nationalcad.org/lr_index.asp

⁶ IAAO Education Courses, Internet, <http://www.iaao.org/education/index.cfm>

⁷ NSGIC, Imagery for the Nation, Internet, <http://www.nsgic.org/hottopics/imageryforthenation.cfm>

take on the responsibility for compiling and integrating the data. Although more resource intensive it does fall within the roles and responsibility of the State GIS Coordinating Office.

IAAO Workshop Draft Recommendations

1. Advocacy and Coordinated Actions

There are multiple users and numerous sources (~4000) for local government parcel data. As was apparent from the pre-workshop report there is a great deal of interest by Federal and State programs, nongovernmental organizations and the private sector to have access to local government parcel data. Critical to the success of this effort is the immediate establishment of a workgroup to establish to move this effort forward. The purpose of the workgroup is to build a clear and coherent strategy in which both the producers and users understand the *quid pro quo* and the responsibility of their organization to participate..

- 1.1. Establish a workgroup(s) consisting of representative of user community (Federal and State) and the producers to begin addressing the action items.
- 1.2. A coherent national strategy should be developed for the modernization and publication of local government parcel data for government-to-government data sharing.
- 1.3. Advocates should be identified in Federal, State, Local governments, non-profit organizations, associations and the private sector that can speak to the needs of those organizations and communicate to their management about supporting a national parcel data strategy.
- 1.4. Federal agencies should take a proactive role in support of the creation of a national parcel data layer that can be used by their agency by clearly defining their business needs and the benefits of having access to local government parcel data and identifying how existing grant or assistance programs can be used to assist local governments for the production, publication of parcel data.

2. Identify and document Federal and State needs and applications for parcel data

The pre-workshop report (See Appendix A) identified many federal business operations and applications that depend on parcel information. The currency and content of these needs vary somewhat but there remains a core set of information that meets most needs. The FGDC Subcommittee for Cadastral Data has documented the parcel needs for hurricane response, wildland fire and energy. The additional needs of the agencies and organizations identified in the IAAO/FGDC Workshop that were identified in the Pre-workshop Report (See Appendix) need to be added to that documentation.

An awareness of the needs for parcel data by the parcel producers and for agencies and organizations to recognize the needs of their sister organizations is an important first step in building common approach for parcel data nationwide.

- 2.1. Federal and state agencies that are the users of parcel data should identify methods of establishing feedback loops to local to local governments that will improve the source

data or services back to the local parcel provider to be used to extend or improve services, local data updates or local outreach.

2.2. Federal and State agencies should conduct a needs analysis of parcel data and contribute that information to the FGDC Cadastral Data Subcommittee for Publication.

2.3. The FGDC Cadastral Data Subcommittee should develop centralized parcel data needs reporting tool that can be used by Federal and State agencies to publish their requirements.

3. *Educate and inform parcel producers and consumers about the availability of parcel data and its uses*

Outreach and education needs to continue through organizations like IAPO, URISA, ACSM, NSGIC, State GIS organizations and others on the status of parcel data nationwide, the need for parcel data and the sources of parcel information. The workshop observations indicated that many parcel users did not understand the parcel maintenance cycles at the local level and the barriers to data sharing. Similarly the local parcel producers were not aware of the many applications for their data and the essential role it plays in decision making by federal and state agencies. There are also existing solutions to issues that many persons are not aware of. Information on these topics needs to be taken to these audiences in their natural forums.

3.1. Document existing solutions to the issues related to parcel data sharing.

3.2. Identify publication sources and topics that should be addressed for those organizations. Develop outreach articles that can be used in the publication of professional associations and Federal, State and NGO publications.

4. *Sustain a national inventory of parcel status and sources for parcel information*

Knowing where to find parcel information is essential for federal and state agencies to use the correct, most current data appropriately. Knowing who to contact and how to get parcel data as well as metadata data on parcel content is important to support essential business processes and applications.

4.1. Maintain the FGDC Cadastral Data Subcommittee's national inventory of parcel data and migrate the information to RAMONA.

5. *Develop business plans for the completion of parcel data for all states*

To address the *digital divide* issues and to provide consolidated points of entry for data access it is essential for states to that do not have state parcel programs to support local parcel producers and to publish standardized parcel information produce parcel business plans. These plans should document the current status of parcel collection in the state and document the gap between where the local agencies are now and what resources and efforts will be needed to reach completion.

Templates for the business plans have been published by the FGDC Subcommittee for cadastral data but the existence and benefits of these plans needs to be published to the assessment community and to federal agencies that need the parcel information.

5.1. Each state should develop or document their parcel management plans.

6. *Document and distribute examples of successes and best practices*

There have been many attempts at documenting success stories and benefits for parcel data collection, maintenance and the many uses parcel data have in federal, state and national applications. These efforts need to continue to be expanded across the digital divide and developed in a way that supports the local producers that do not have modern parcel systems. Counties that have parcel information and are using it successfully are often viewed as the “rich” counties by the more rural and less populated counties. The business cases that work in downtown Minneapolis are not the same as those needed in Sunset South Carolina. The successes stories, benefits, model agreements and model RFP’s need to be developed to support the local governments that operate in more resource strained environments.

The benefits and best practice documents can be used to support parcel system advocates in local, state and federal arenas and in private industry.

6.1. Develop and publish model RFP’s and MOU’s that can be used for different communities.

7. *Recognize and encourage good corporate citizens*

An area that has not been explored very well is the role of industry. Historically it has been viewed as having little role in developing a national parcel data infrastructure. They take available data, provide added value and market it. Recently it has become apparent that industry can play a more active role although it is not well defined at this time.

7.1. Establish a workgroup to explore ways of improving government-to-industry relationships.

7.2. Identify the role that industry can play to build a national parcel data infrastructure.

Appendix A: Pre-Workshop Report

Document available from nationalcad web site

IAAO and FGDC Cadastral Subcommittee Workshop: Sharing Parcel Data to Protect and Rebuild Communities	
Author: David Stage Eastern Cadastral Coordinator	Version: V1
Document Type: Reference Docs	Date: 2/27/2008
Abstract: IAAO and FGDC Cadastral Data Subcommittee sponsored a workshop on Feb 25, 2008 at the 2008 GIS/CAMA Technology Conference. The purpose of the workshop was to explore the advantages, opportunities and issues of sharing parcel data from government to government. The objectives of the workshop were to: • document specific federal programs and/or applications that rely on or could benefit from local parcel data; • document what services and/or information federal agencies could provide back to local governments from the use of the parcel data; and • identify and document the action items and responsible parties to move forward with parcel data sharing. A final report will include the identification of issues and action items.	
Keywords: IAAO, Parcel	
http://www.nationalcad.org/showdocs.asp?docid=1030&navsrc=Report&navsrc2	

Appendix B: Issue Summary

Document available from nationalcad web site

IAAO Workshop: Consolidation of Issues	
Author:	Version: Final
Document Type: Project Reports	Date: 8/28/2008
Abstract: Author: IAAO Workgroup Results from the IAAO Workshop, Sharing Parcel Data to Protect and Rebuild Communities This is a consolidated list of the issues that were identified in the workshop.	
Keywords: IAAO, Consolidated, Appendix B	
http://www.nationalcad.org/showdocs.asp?docid=1046&navsrc=Search&navsrc2=	