Sharing Parcel Data To Protect And Rebuild Communities

A Workshop To Explore The Possibilities For Data Sharing.

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International Association Of Assessing Officers

And

FGDC Cadastral 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 is to explore the advantages, opportunities and issues of sharing parcel data from government to government. The objectives of the workshop are:

- 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 sets 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.

Data Access Vision:

> Several counties maintain cadastral parcel data in varying formats using different customized assessment programs. The state Department of Revenue has standards for reporting value information to support statewide equalization. The state GIS coordination office assembles parcel data and a selected set of attributes for the state's GIS portal, standardizing this information across county boundaries in the state and publishes the data through its data portal. The State DOR can use the standardized parcel geometry and attributes to support equalization analysis. Federal agencies and industry users of parcel information can identify the existence of parcel data; acquire a selected set of parcels and attributes in a standardized format without disrupting the internal operations of the local county source.

Disaster Event Scenario:

> Organizations that respond to disaster events would acquire and pre-deploy parcel data in their applications. In the aftermath of a natural disaster parcel data would be used to identify affected properties and estimate damage. This information would be used to deploy emergency response teams and request funding from Congress. Parcel information stored in offsite areas by the state coordination office can be used to support response and recovery efforts. If an organization provides rebuilding relief to residents or businesses this information can be shared back with the local government to identify people, businesses and locations where building permits will be needed and where economic development activities could be coordinated. The local government can provide feedback to the agency or industry providing assistance completing the feedback loop for determining the success of relief efforts.

These are just two scenarios that illustrate how parcel data needs can be met and the feedback that could be provided to the mutual benefit of the parcel producers and the data consumers.

This report provides 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 following is a list of the parcel data consumers of local government parcel data and a brief description services that these organizations are providing to communities.

American Red Cross: Red Cross disaster relief focuses on meeting people's immediate emergency disaster-caused needs by providing shelter, food, and health and mental health services to address basic human needs. In addition to these services, the core business of Red Cross disaster relief is the assistance given to individuals and families affected by a disaster to enable them to resume their normal daily activities independently.

Army Corps of Engineers: On directions from Congress the Army Corps of Engineers (ACE) will respond to a project that provides disaster assistance to communities as was the case in New Orleans after Katrina.

*FEMA GIS Solutions Offic*e provides damage assessment for the Stafford Act formulas which are used to determine the assistance needs and funding requirements of communities affected by disasters. The GIS Solutions Office is one of many divisions in FEMA.

*FEMA HAZU*S office provides software and training to disaster planning and risk assessment.

EPA Superfund Program: Provides staff and resources to clean up hazardous materials.

Housing and Urban Development: Integrators of parcel data that will be provided back to local governments. The Office of Policy Development and Research supports HUD's policies for its grant programs that go to local communities.

Small Business Administration: Provides low interest loans to businesses and private residences in the event of a disaster.

USGS GIO – Structures: Integrates and standardizes critical structures data to be included in the National Map. This data will be used in disaster response.

Florida: Parcel development program to provide local governments with orthoimagery, technical assistance and training for parcel mapping.

Louisiana: Provides technical assistance and training to local governments. It has begun building the technical infrastructure for the integration and publication of parcel data. The state would benefit greatly from assistance in the creation of a parcel management program.

Montana: The State has assumed the responsibility for building a parcel data layer for 48 of its 56 counties. The Montana GIS Office has begun working on ways of vertically integrating parcels with other boundary layers and providing results to local governments. The state has integrated and published a state parcel layer that is used for many applications including disaster response.

Sponsors

First American Corporation was established as an Abstract and Title Company in Orange County, CA in 1889. Parcel data serves as a key component for many of its core business operations such as Flood Zone Determinations and precision location for disaster impact and insurance rating services. Because parcel data is such a fundamental part of their organization the company will convert and/or maintain the parcels, returning data to the local governments with a range of sharing options that are related to the local governments' contribution.

Intergraph is a leading global provider of spatial information management (SIM) software. It serves a wide spectrum of industries, ranging from commercial photogrammetry and public safety to plant design and construction, local utilities and communications, and the U.S. federal government. Parcel data needs are dependent upon the individual clients and applications but generally it is used across all of Intergraph's capabilities.

ESRI is a GIS applications service provider that has long recognized that the software and services that they provide have a synergistic relationship with the data. Because of this they have provided the technology (ArcData Online) to facilitate data sharing and they have long served as a sounding board for the GIS community to improve the sharing of ideas and spatial data.

Summary: Concepts, Definitions and Observations of Interviewed Organizations.

1) Parcel Data Types: A common misunderstanding between the sources of parcel data and the users are the differences and requirements for production, publication and project data. The Cadastral Subcommittee has developed a more extensive discussion of these concepts[1]. A summary follows:

Production Data*:* Local government's assessment or production data contains a wealth of information that is used by assessors to conduct their daily business operations. These are complicated databases that include complete descriptions of taxable properties and an assessment of its value for taxation purposes that may or may not include the parcel geometry that can be used in a GIS. Likewise in State agencies there will be production data to support the collection and maintenance of state owned lands, business license and sales tax data that will include public and non-public information.

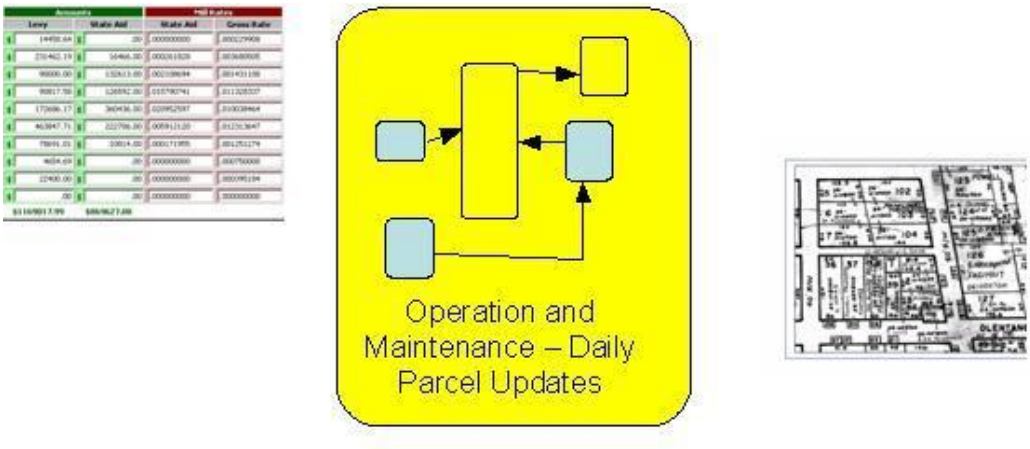

Figure 1 – Production Data

Publication Data: The FGDC Cadastral Data Subcommittee has found that a small subset of the *production data*, known as **publication or core data,** meets over 95% of the users needs for planning and emergency response. The core data consists of nine content fields and a location (see Table 1 p. 9). The FGDC's Parcel Management Plan[2] recommends that this core data is updated annually, processed, published by the state and provided ready to pre-deploy for applications. The publication data needs to be down-loadable so it can be incorporated into existing applications.

[1]von Meyer, Nancy, *Production and Publication A Concept for Geographic Information Environments*, FGDC Cadastral Data Subcommittee, 2002, http://www.nationalcad.org/data/documents/pub-prod.pdf

[2] Stage, David, Parcel Management Program Brief, FGDC Cadastral Data Subcommittee, 2006, http://www.nationalcad.org/data/documents/3StateManageProgOnePager.pdf

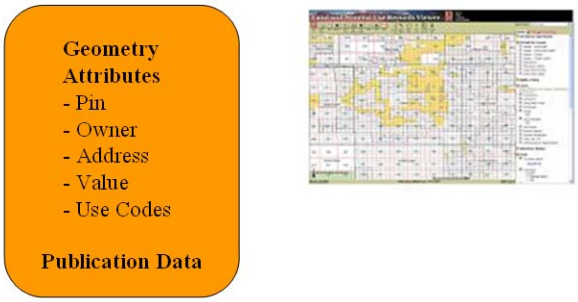

Figure 2 – Publication Data

Project Data: In the case of a disaster, properties can be identified through a geographic selection of an area of interest which may be an overlay of a storm path, a wildland fire predicted path or other event related footprints. The core data can be extracted for the affected area and provided for response analysis. Parcels of interest in the affected area can be identified and more current and detailed information on this subset of parcels can be requested from the source(s) to verify ownership and other information about a parcel. This is known as *project data* and would be provided by the *authoritative source* after an event to ensure that the most current data is used for post event processing.

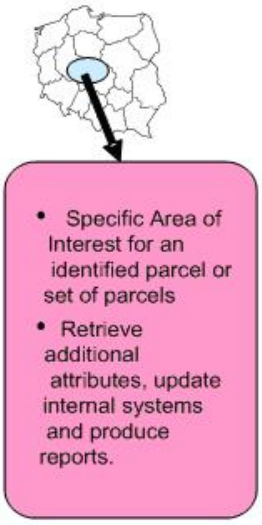

Figure 3 – Project Data

The information flow from production to publication to project level data is as shown in Figure 4. The publication data should be refreshed annually. The publication data would include data

from multiple jurisdictions. The request for data from the source based on the project data is a post event request and would require more detailed and more current information than the publication data.

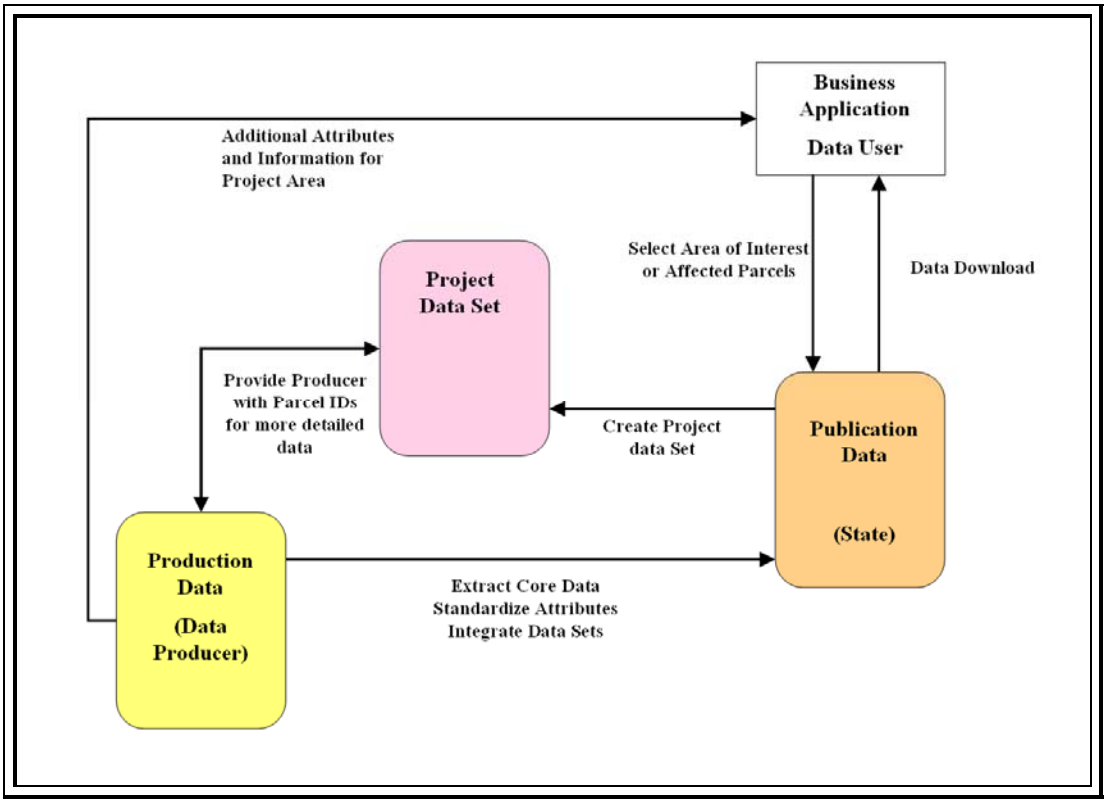

Figure 4 - Production, Publication and Project Data Information Flow

2) Disaster Life Cycle: The disaster life cycle describes the process through which emergency managers prepare for emergencies and disasters, respond to them when they occur, help people and institutions recover from them, mitigate their effects, reduce the risk of loss, and prevent disasters such as fires from occurring.

3) Authoritative and Trusted Sources of Data: Cadastral Data is slightly different than many of the other geospatial framework themes. The data steward is the creator of the data is considered the *authoritative source for the data.* If certified copies or data validation is needed it is provided by the authoritative source. Local governments are the most common authoritative data source for the geospatial and attribute information in this report. A state agency that receives, standardizes and integrates the data from multiple sources (counties) is the *trusted source of standardized information.* The terms are significant. The Subcommittee's vision for cadastral information is to recognize the local governments as the authority and authoritative source for their data because their attention to detail and accountability to the citizens they serve. The states role is to compile and integrate the data across jurisdictional boundaries and to host the data as a *trusted source* of the standardized data for the publication environment. The published data does not usurp local authority and to be considered a *trusted source* it must be recognized as such by the local producers as well as the data consumers.

4) Data Needs:

This section interprets the data needs results in Appendix A based on the interviews found in Appendix B.

Pre-deployed data: The FGDC Cadastral Data Subcommittee has identified a core data set that consists of nine content areas that that Subcommittee has found to address 95% of the user needs for planning, disaster response and discovery. The Subcommittee's strategy is that each state would compile and publish data on an annual update cycle scheduled to be most current at the beginning of the hurricane, wildland fire and flood seasons that would impact that jurisdiction..

Table 1 Core Data[3]

Core Data	
Descriptive Name	**Brief description**
Geometry	A polygon or point that represents the location of a parcel. If the geometry is managed separately from the attributes, it must include a parcel identification number (pin) that is common with the attribute data.
Pin	Unique parcel identification number that includes the state and county FIPS codes and the parcel identifier used by the local assessor. The FIPS codes are used to create identification uniqueness.
Owner	Owner name if not redacted. Surface management agency if the land is publicly owned
Mailing Address	Mailing address of owner if not redacted.
Street Address	Situs address or street number of the properties with structures.
Parcel Use Code	Assessors use code and inclusion of a text description in database.
Owner type	(International, Federal, Regional, State, Tribal, Private, non-profit)
Value	Value of property and value of improvement
Structure Present	Flag that indicates if a structure(s) exists on the property. Not how many structures
Source Reference	A pointer to, or an attribute describing, the source reference for the parcel. This could be a deed, plat, or other document reference.
Metadata	All data files will have FGDC Compliant metadata including authoritative source.

Project Data*:* Once an event occurs and the affected properties are identified a request is made directly to the source for an update to acquire: 1) the most current data and 2) additional attributes that is not included in the core data.

[3]FGDC Cadastral Data Subcommittee, *Cadastral NSDI Reference Document*, 2007, http://www.nationalcad.org/data/documents/Cadastral NSDI Reference Document v11.pdf

***Currency Requirements**:* The requirements for acquiring updates to the data vary from one day after an event to one month depending on the business operation and the type of event.

- *Annual:* Agencies that are using the parcel data for long term projects or initial response to a disaster. Examples include the USGS structures layer to build the national map and FEMA HAZUS risk assessment modeling. State agencies that are responsible for integrating parcel data by definition only need an annual update.
- *Day One:* FEMA GIS Solutions Office needs data within 24 hrs for high growth areas to provide Congress with an accurate budget request for as disaster response (Stafford Act).
- *One Week:* Most organizations needed an update within one week.
- *One Month*: Organizations that are principally concerned with recovery and require time to put their services in place. The Small Business Administration (SBA) is a good example of an organization with these operational requirements.
- *Beyond One Month*: Long term recovery may extend the time to several months after an event. For example after a wildland fire event hydro seeding may take place several months after the event.

Additional Attributes: Information needed agency specific applications.

- *CAMA:* Property assessment database is used by states that have the responsibility for maintaining a centralized assessment database (Montana) or this also indicates that there is a major subset of Assessor's database that is used for quality control for equality of taxation (Florida). There are several states that have centralized the assessment database in various forms (Alabama, Arizona and Tennessee are other examples)
- *Documentation* Includes Metadata, date of last update, source for currency updates and additional attributes, type of geometry (point or polygons), and documentation of the use codes (the trend is to include definitions in table with use codes).
- *Location:* The parcel is usually adequate for most location needs. Structure location is important for the National Map structures layer and 911 uses structure locations although they were not a part of this assessment. When parcels are located by points instead of polygons the area of the parcel is useful for assessment purposes. Tying the *Automated Number Identification* to parcels is useful for emergency notification by geography.
- *Occupation:* The Red Cross targets its resources to assisting individuals after a disaster. It is important to the Red Cross responders are able to differentiate between seasonal dwellings and permanent housing so they know where to best direct their resources. For example 63% of the housing in Myrtle Beach, SC is seasonal and from previous experience the seasonal visitors will leave and the permanent residences to stay to protect their homes. Also to determine the financial impact it is important to know the number of units on a property and whether it is business or dwellings.
- *Ownership Verification:* Although most agencies have an interest in owners for the purpose of contacting them for various reasons, the SBA has many applications needs. They are responsible for issuing low interest loans for properties affected by disaster. Their stated goal is to process applications in 21 days. Parcel data can be used to pre-populate many of the fields in an application and avoid delays in processing caused by misspellings or incomplete applications. The SBA is also concerned credit history and fraud and wants to use the assessment database to tie together information that affects

loan applications that include proof that taxes are paid, property lines, alimony payments, title information, utility bills, etc.

- *Structure Information:* There are three uses for additional structure information, damage claims, data modeling and structure description. The more accurate the description of the number and type of properties that are included in the HAZUS data model the better the risk assessment results. The SBA needs to verify the presence of all structures on a property to verify claims. The USGS structures layer needs descriptive information about critical structures to include in the National Map.

5) Uses and Benefits of Parcel Data to Agency

- *Addressing:* Parcels can be used to improve addressing by using parcels to better locate a property and tie address to that location.
- *Budget and Finance:* Parcel data is used by the GIS Solutions Office of FEMA to identify the types of properties (residential, commercial, agriculture) that have sustained damage which is then combined with additional information (value) that is used as a component for developing a cost estimate for the response. FEMA submits a request to President and Congress for funding which is determined by the extent and value of the impacted properties as established in the Robert T. Stafford Act. This act defines the roles of FEMA and other agencies and the process for to acquire funding for a response and recovery operations in areas that are declared disasters. The categorization of property types is important because the funding comes from different sources.
- *Communication:* Having a common, trusted, current and complete source of information about properties greatly facilitates communication between agencies at all levels of government in a disaster or for planning.
- *Damage Claims:* Low interest loans and insurance claims. The combination of parcel data and orthoimagery allows claims adjusters to use "desktop" visits to reduce the number of trips to the field. SBA uses parcel data to expedite the claims process by pre-populating applications and verifying ownership to ensure that the claims are valid. Parcel data can be used as a "parent file" to link with other sources of information to verify claims (tax payments, intangible property, registered businesses, etc.)
- *Resource Management:* Governments and non-profit organizations have limited resources and are concerned about improving services while reducing cost. Parcel data provides the highest granularity allowing disaster responders to target resource by determining the exact number and kinds of properties affected by a flood, tornado or fire or to know that within in the cone of impact that 23% of the affected properties are mobile homes. This allows the Red Cross better assess how many people need to be deployed to a disaster area and what types of supplies provided (plywood for mobile homes, persons likely to need shelter, clean up supplies, etc). The EPA Hazardous Materials uses parcel data as an inventory and project management tool to assist in the cleanup of home hazardous materials (white goods (refrigerators) and propane tanks). The US Forest Service uses parcel data in their recently released RAVAR fire modeling software to determine whether to let the fire burn or be suppressed. The parcel data is used to identify the location of structures and determine where to best deploy their fire fighters.

6) Benefits to local governments and to its citizens when they share parcel data:

State Assistance Programs: Some state agencies have developed programs to provide local governments with assistance in parcel conversion, standardization and publication. This varies considerably from State to State. The most successful programs have a business requirement such as tax equalization or the state has taken on the responsibility for parcel conversion in those communities that do not have the population to support the conversion of parcel conversion and maintenance. Alabama, Arkansas Florida, Montana, Tennessee and Utah are examples of pro-active states. Some states have begun or are implementing plans for the standardization and publication of parcel data such as Oregon and Arizona. These states have the potential of directing assistance to local governments. Federal agencies have a more active role in the Western States than they do in the Eastern US because of the amount of federal land.

Montana is an example of a state that has taken on the responsibility of creating parcel layer for the 48 of its 56 counties and a complete coverage of the state was in place several years ago. Having accomplished the creation, integration and publication of the data the integration office has begun the next challenge to vertically integrate the parcel data with sub-themes (State Trust Lands, Federal Lands, private parcels, etc.). These data are then provided back to the counties to improve discrepancies in school districts, Census Tracks, county boundaries and taxing districts.

Industry has recognized the importance of more complete parcel coverage and has developed assistance programs targeted to the less populated counties and parishes.

Disaster Planning: FEMA's HAZUS software is a sophisticated GIS application that is free to communities for their disaster planning. FEMA provides training and is continually improving the application to provide additional functionality. HAZUS has been tuned for planning and mitigation with its core product being loss estimation. It can be used to model different scenarios such as estimating losses to wind damage if shutters are installed or to determine how many people will need to be sheltered. Local government parcel data can be imported to provide a more refined risk assessment.

Disaster Response and Recovery: The benefits of these operations are much easier to understand because there are clear cut budget request that direct resources to impacted communities. The use of parcel data can be directly tied to improvements in response time which in turn protects the life, property and economic viability of a community. Some of the benefits are obvious and others are simply stumbled upon. A few follow:

- FEMA GIS Solutions Office can use parcel data to improve the accuracy of their damage assessment which is needed for the budget request to congress.
- SBA provides low interest loans to disaster victims, parcel data can greatly facilitate the processing of applications and get the money to those qualified sooner to begin rebuilding their properties.
- The US Forest Service uses parcel data to locate structures and determine if a fire should be suppressed or if it can be left to burn itself. This is critical to the deployment and safety of the limited number of fire fighters.
- The Red Cross can use parcel data to best deploy its limited resources.

Table 1 is a damage assessment developed by the Red Cross to summarize the impact of 2005 hurricanes Katrina and Rita in the Gulf.

Federal agencies have yet to develop a strategy to provide assistance for parcel development. A recent NRC report[4] on National Parcel Data provides further discussion and potential solutions for federal support. There are several roles federal agencies could play in supporting parcel data development. Some examples of support are as follows.

Table 1 Damage Assessment for Hurricanes Katrina and Rita prepared by the American Red Cross.

American Red Cross Damage Assessment Summary Sheet								
DR Number:	DR Name:		Collection Type:	State:	Prepared By:	Time:	Date:	
	Katrina, Rita Combined		**PDA**	**Gulf**	**GTune**	**9:00pm**	**10/3/2005**	
Jurisdiction:		**Dwelling Type**	**Destroyed**	**Major**	**Minor**	**Affected**	**Inaccessible**	**Total**
FIPS Code	**Chapter Code**							
Katrina		SFD	310,353.0	102,297.0	135,879.0	127,290.0	1,769.0	677,588.0
		MH	1,815.0	3,388.0	6,692.0	5,834.0	248.0	17,977.0
		APT	40,762.0	33,691.0	27,881.0	52,551.0	341.0	155,226.0
		Sub-Total	**352,930.0**	**139,376.0**	**170,452.0**	**185,675.0**	**2,358.0**	**850,791.0**
Rita		SFD	2,252.0	5,145.0	11,195.0	17,620.0	11.0	36,223.0
		MH	707.0	1,126.0	2,055.0	2,714.0	15.0	6,617.0
		APT	0.0	9.0	38.0	288.0	0.0	335.0
		Sub-Total	**2,959.0**	**6,280.0**	**13,288.0**	**20,622.0**	**26.0**	**43,175.0**
		Sub-Total	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Sub-Total for SFD:			312,605.0	107,442.0	147,074.0	144,910.0	1,780.0	713,811.0
Sub-Total for MH:			2,522.0	4,514.0	8,747.0	8,548.0	263.0	24,594.0
Sub-Total for APT:			40,762.0	33,700.0	27,919.0	52,839.0	341.0	155,561.0
Carry-over from other pages:								
Totals:			**355,889.0**	**145,656.0**	**183,740.0**	**206,297.0**	**2,384.0**	**893,966.0**

SFD = Single Family Dwelling
MH = Mobile Home
APT = Apartment

Federal Assistance: The following is a description of the resources provided by Congress for the 2005 hurricanes in the Gulf Coast.

Hurricane Katrina struck the Gulf Coast of the United States on August 29, 2005, causing widespread flooding and significant property and infrastructure damage to Louisiana, Mississippi, and Alabama. In response, the 109th Congress completed action on an emergency supplemental appropriation bill (P.L. 109-61, H.R. 3645) that provides $10.5 billion in FY2005 funding to areas stricken by the disaster. The President submitted the request for the emergency supplemental on September 1, 2005. Both the Senate and the House quickly took action on the

[4] http://books.nap.edu/catalog.php?record_id=11978 last accessed Feb 20, 2008

measure. The Senate passed the request by unanimous consent the evening of September 1, 2005. The House approved the bill by voice vote on September 2, 2005, and the President signed it into law the same day. P.L. 109-61 provides $10 billion in FY2005 funding for the Department of Homeland Security's Federal Emergency Management Agency (FEMA), and $0.5 billion for the Department of Defense (DOD) to support the costs of evacuation, emergency repairs, and deployment of personnel, and other costs resulting from the immediate relief efforts.[5]

The magnitude of these disasters caused more home and business owners to apply for disaster loans from SBA's Office of Disaster Assistance (ODA) than any previous disaster. Over 420,000 home and business owners applied for assistance as a result of the 2005 hurricane season.

The EPA Hazardous Waste Section parcel data are used to identify and contact the owners of impacted properties. Those properties of concern may be properties surround a Superfund site, in the cone of a hazardous material release, or in the case of flooding such as occurred during Katrina, to identify and track properties to dispose of household hazardous waste, white goods (refrigerators) and propane tanks.

Non-governmental Organizations: The American Red Cross measures describes event in order of the resources that it takes to respond to an event. The following is a list of recent Level IV and V disasters.

- Level IV - $250,000 to $2.5 million
  - Flooding – NW in 2007
  - New England Flooding - NH, MA, ME, NY, Flooding in the spring of 2007L
- Level V – greater than $2.5 million
  - CA wildfires
  - Hurricanes Katrina and Rita (893,966 house holds affected – single family 713,811, mobile homes, and rentals)
  - Oklahoma Tornado
  - Birmingham, AL - tornadoes in early 2000

The Red Cross per person cost for travel for deploying persons into the field is budgeted at $750 for 21 days which is typical of a Level IV and V disaster. The 2007 Oregon floods put 60 to 70 persons in the field and the Washington floods mobilized 100 persons. The 2008 California wildland required the Red Cross to mobilize 1000 people.

7) Conclusion

Understanding the three levels or environments for parcel data (production, publication and project) simplifies the discussion of what data is needed, when and by whom. Understanding the business need for parcel data helps the data providers assure that data users are getting the right information at the right time. Knowing what products and services data consumers create from parcel data can crate feedback and support for local parcel producers.

The workshop session will facilitate discussions on finding solutions to improved data sharing and supporting efforts for parcel producers and parcel consumers to move forward together.

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[5] Emergency Supplemental Appropriations for Hurricane **Katrina** Relief. ***http://fas.org/sgp/crs/misc/RS22239.pdf***

Appendix A: Parcel Data Needs Summary by Organization

Appendix B Organization Parcel Data Profile

Appendix B

Organization Parcel Data Profile

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The fourteen interviews represent a cursory view of one “section” in an organization and it does not represent all of the uses of parcel data or the services that are provided to communities.

Non Governmental Organizations

American Red Cross

Type of Activity: Preparedness/Response/Disaster Assessment

Jurisdiction: US and its Territories

Description of Activity and Background: Disaster Response oriented towards providing assistance to persons affected by a disaster.

Although the American Red Cross is not a government agency, its authority to provide disaster relief was formalized when, in 1905, the Red Cross was chartered by Congress to "carry on a system of national and international relief in time of peace and apply the same in mitigating the sufferings caused by pestilence, famine, fire, floods, and other great national calamities, and to devise and carry on measures for preventing the same." The Charter is not only a grant of power, but also an imposition of duties and obligations to the nation, to disaster victims, and to the people who generously support its work with their donations

The Red Cross uses GIS technology to provide intelligence in anticipation and immediately after a disaster for the purposes of determining the scope of the disaster and the allocation of resources

Uses of Census data and Parcel Data:

- Census data provides demographic information for current estimates of the characteristics of a geography and five year projections.
- Parcel data provides addresses and more detailed information for affected properties giving a better picture of the housing stock within potentially impacted area. For example parcel data can be used determine the percentage of mobile homes within a cone of impact which helps them determine what type of resources need to be deployed.

Organizational Structure is in three tiers.

1. *Chapters* have a finite capacity but are able to quickly respond.
2. *Service Areas* vary in size from 4 to 9 states. There are a total 8 service areas in the Red Cross that are able to bring in outside resources into a disaster area when the Chapters need them.
3. The *National Office* assists the chapters for planning and responding intelligently to events by providing them with technical support that they do not have. They bring in additional resources when the Chapters and Service areas need them.

How is parcel data used?

The Red Cross' history of using parcels has been at the local level with chapters working closely with local governments. Nationally the use of parcels by the Red Cross has been irregular because they do not have ready access to the data.

Parcel data helps to identify the actual addresses that have been affected.

Preparedness is an area that is handled at the local or Chapter level but parcels can be used to identify critical areas:

- Pre-identify areas that are impacted year after year by flooding.
- 100 yr and 500 yr flood plain with parcels
- Earthquake hazard – In the San Francisco Bay area parcels are used with shake maps shows where the vulnerable housing is located.
- Slosh modeling is used to identify housing stock that would be identified by hurricane surges.

Benefits to local communities:

Red Cross Services:

- The primary role of the Red Cross is on the people side of disaster relief with its stated objective of meeting the immediate needs of families in a disaster.
- Government agencies don't have the ability to respond as quickly as the Red Cross because they do not have the Red Cross Chapter infrastructure that is designed to provide immediate disaster relief.
- The services that the Red Cross provides includes
    - Shelter
    - Housing
    - Feeding – fixed or mobile
        - If the electricity is off families can go to distribution site to get a meal
    - Bulk distribution of supplies.
        - Clean up kits: Allows families to stay in their house by providing them with the appropriate tools to clean up.
- How parcel data is used.
    - Mobile homes vs. basements: Parcel data can determine the type of housing and what type of kits are needed. Plywood for mobile homes, mop broom and a bucket to supplement what the users already have. For example the Red Cross will bring in a truck load of gloves, rakes, shovels and boxes of trash bags to homes and this is often enough to allow homeowners to get back on their feet quicker.
    - It provides a more exact count of the parcels in the flooded area and is used to authorize the number of case workers to provide assistance.
    - The Red Cross needs to distinguish between year round and seasonal residences because visitors readily evacuate. Myrtle Beach, South Carolina is an example of a vacation community with 63% of its residents being seasonal.

Benefits of having parcel data:

Targeting Resources: Parcel data helps to identify the actual addresses that have been affected allowing the Red Cross to better target their resources With a more accurate assessment of the impact in the field it will saves time and money by putting just enough people in the field.

Cost information: The role of the GIS section is to provide the best intelligence so that managers can make the best decisions. This is information is used from the Chapter level to the President to determine what resources need to be mobilized. There are usually 300 major events per year and of those 25 to 30 require a 3 week field stay.. With airfare and corporate lodging this amounts to approximately $750 for 21 days. The Oregon floods put 60 to 70 persons in the field and the Washington floods mobilized 100 persons. The 2008 California wildland fire required the Red Cross to mobilize 1000 people.

The Red Cross Levels for Disaster Response are based on the resources that are needed for the response. Level I and II are handled at the Chapter Level and for levels III through V outside assistance is provided by the Service Areas and the National Office.

- Level I Less than $10,000
- Level II $10,000 to $50,000
- Level III: $50,000– $250,000
- Level IV - $250,000 to $2.5 million
  - Flooding – NW in 2007
  - New England Flooding - NH, MA, ME, NY, Flooding in the spring of 2007L
- Level V – greater than $2.5 million
  - CA wildfires
  - Hurricanes Katrina and Rita (893,966 house holds affected – single family 713,811, mobile homes, and rentals)
  - Oklahoma Tornado
  - Birmingham, AL - tornadoes in early 2000

Red Cross Core Data Needs Time Line				
Data	**Pre-deployed**	**Week 1**	**Week 2**	**Month 1**
Core Data Items				
Geometry	**X**	**X**		
Pin	**X**	**X**		
Owner				
Mailing address				
Street Address	**X**	**X**		
Parcel Use Code	**X**	**X**		
Owner Type (federal , private, commercial, tribal)	**X**	**X**		
Structure Present	**X**	**X**		
Value	**X**	**X**		
Red Cross Needs				
Who is living there now	**X**	**X**		
Seasonal Rental Property	**X**	**X**		

Federal Agencies

Army Corps of Engineers

Title: Real Estate – Property Management

Type of Activity: Projects and Recovery: Life cycle real estate management. US Army Corps of Engineers (ACE) is a large decentralized organization. The ACE Head Quarters provides oversight and support, while the Divisions and Districts execute projects.

Jurisdiction: World wide

Description of Activity: The US ACE Real Estate Office is responsible for the records management of properties and the planning, acquisition, and disposal of lands, buildings and structures for the US Military and Civil Works. On directions from Congress they may provide assistance to communities as was the case in New Orleans after Katrina. Currently they go directly to the local government Assessor's Offices for the necessary parcel information.

How is parcel data used? Parcel data uses are oriented towards specific projects such as dams, levees, in-land waterways, the expansion or the disposal of military bases. Private parcel records are used to assist with the identification of properties for acquisition and disposal.

USACE is a large organization with concerns for many properties and any one project location may not have real estate activity for many years. ACE may also be directed by congress to do dam or lock or other navigation projects which can be extensive one-time events. Changes in navigational system requirements will impact land interest requirements.

Benefits to local communities: The benefits are dependent upon the project.

ACE Core Data Needs and Time Line	
Data	**Pre-deployed**
Core Data Items	
Geometry	**X**
Pin	**X**
Owner	**X**
Mailing address	**X**
Street Address	**X**
Parcel Use Code	**X**
Owner Type (federal , private, commercial, tribal)	**X**
Structure Present	**X**
Value	**X**

Benefits of having parcel data: Property discovery.

DHS/FEMA GIS Solutions Office of CIO

Title: Support of the Disaster Life Cycle

Type of Activity: Preparedness/Response/Planning/Recovery

Jurisdiction: US and Territories

Description of Activity: The FEMA/GIS Solutions Office of CIO provides situational awareness and impact analysis for disasters. There are many other sections within FEMA that use parcel data to meet specific business purposes.

How is parcel data used?

Parcel data is initially used to identify the types of properties (residential, commercial, agriculture) that have sustained damage which is then combined with additional information that is used as a component for developing a cost estimate for the response. FEMA submits a request to President and Congress for funding which is determined by the extent and value of the impacted properties as established in the Robert T. Stafford Act. This act defines the roles of FEMA and other for determining the process to acquire funding for a response and recovery operation. The categorization of property types is important because the funding comes from different sources.

Currency is a critical component for making an accurate cost estimate in high growth areas for response and recovery operations. Mechanisms to provide a refresh to the parcel data within twenty-four hours would do a great deal to provide better estimate of the damage and subsequently a better cost estimate and break down for funding requirements.

Benefits to local communities:

FEMA Disaster Response:

- Funding: FEMA GIS Solutions Office provides damage assessment for the Stafford Act formulas which are used to determine the assistance needs and funding requirements of communities affected by disasters.
- Improved disaster assistance and response.
- Different sections use parcel data for a variety of applications

The following is a description of the resources provided by Congress for the 2005 hurricanes in the Gulf Coast.

Hurricane Katrina struck the Gulf Coast of the United States on August 29, 2005, causing widespread flooding and significant property and infrastructure damage to Louisiana, Mississippi, and Alabama. In response, the 109th Congress completed action on an emergency supplemental appropriation bill (P.L. 109-61, H.R. 3645) that provides $10.5

billion in FY2005 funding to areas stricken by the disaster. The President submitted the request for the emergency supplemental on September 1, 2005. Both the Senate and the House quickly took action on the measure. The Senate passed the request by unanimous consent the evening of September 1, 2005. The House approved the bill by voice vote on September 2, 2005, and the President signed it into law the same day. P.L. 109-61 provides $10 billion in FY2005 funding for the Department of Homeland Security's Federal Emergency Management Agency (FEMA), and $0.5 billion for the Department of Defense (DOD) to support the costs of evacuation, emergency repairs, and deployment of personnel, and other costs resulting from the immediate relief efforts.[1]

Benefits of having parcel data:

Parcel data greatly facilitates the assessment of damage which is used by Congress to determine how much funding is needed for Response and Recovery operations. As previously mentioned the GIS Solutions Office is one of many divisions that can use parcel data.

The FGDC Cadastral Data Subcommittee conducted a case study on Hurricane Isabel that struck North Carolina in 2003. The workshop report provides many examples of how parcel data was used by FEMA and other agenes.[2]

1) Pre-Event
   a) Identifying properties at risk
   b) News Media Communication
   c) Hazardous material sites
   d) Temporary housing locations
   e) Re-entry Permits
2) Reponses
   a) Debris Removal
   b) Debris Accumulation Modeling
   c) Mobile homes and Facilities at Risk
3) Recovery
   a) Insect control and Aerial Spraying
   b) Aid Requests for Affected Areas
   c) Debris Removal Staging Areas
   d) Shelter Availability

DHS/FEMA GIS Solutions Office Core Data and Time Line		
Data	**Pre-deployed**	**ASAP (24 hrs)**
Core Data Items		
Geometry	**X**	**X**
Pin	**X**	**X**
Owner	**X**	**X**
Mailing address	**X**	**X**
Street Address	**X**	**X**
Parcel Use Code	**X**	**X**
Owner Type (federal , private, commercial, tribal)	**X**	**X**
Structure Present	**X**	**X**
Value	**X**	**X**
Other Parcel Data Needs		

[1] Emergency Supplemental Appropriations for Hurricane **Katrina** Relief. ***http://fas.org/sgp/crs/misc/RS22239.pdf***

[2] Parcel Data and Hurricane Isabel: A Case Study, FGDC Cadastral Data Subcommittee, 2004, Internet, ***http://www.nationalcad.org/data/documents/Hurricane Isabel Final.pdf***

FEMA HAZUS

Type of Activity: Planning, Mitigation for Disasters

Jurisdiction: US and its Territories

Description of Activity: FEMA's Software Program for Estimating Potential Losses from Disasters

HAZUS-MH is a powerful risk assessment software program for analyzing potential losses from floods, hurricane winds and earthquakes. In HAZUS-MH, current scientific and engineering knowledge is coupled with the latest geographic information systems (GIS) technology to produce estimates of hazard-related damage before, or after, a disaster occurs.

Potential loss estimates analyzed in HAZUS-MH include:

- **Physical damage** to residential and commercial buildings, schools, critical facilities, and infrastructure;
- **Economic loss**, including lost jobs, business interruptions, repair and reconstruction costs; and
- **Social impacts**, including estimates of shelter requirements, displaced households, and population exposed to scenario floods, earthquakes and hurricanes.

Federal, State and local government agencies and the private sector can order HAZUS-MH **free-of-charge** from the FEMA Publication Warehouse.

How is parcel data used? HAZUS software automates the process of risk assessment by using raw data for risk identification. It utilizes Census blocks and tracts to define the geography and its characteristics. Users can import additional information that provides better detail for their own jurisdiction through the HAZUS Extraction, Translation and Loading (ETL) tool. Parcel data can be imported to provide a more granular view of a community which is particularly important for flooding where there is a well defined perimeter of the disaster risk area.

Benefits to local communities: The HAZUS software is a sophisticated GIS application that is free to communities for their disaster planning. FEMA provides training and is continually improving the application to provide additional functionality. HAZUS has been tuned for planning and mitigation with its core product being loss estimation. It can be used to model different scenarios such as estimating losses to wind damage if shutters are installed. With damage estimate for a given area it can be used to determine how many people will need to be sheltered.

Benefits of having parcel data: Parcel data provides local governments with more refined data to assess risk in their communities and it is essential to acquire a good

assessment of the impact in flood risk areas where parcel data can differentiate properties that are in or out of the flood zones. This can in turn allow low governments to directly contact the houses in a flood zone instead of sending information to an entire community when only 20 to 30% of the properties may be at risk.

FEMA HAZUS Core Data Needs and Time Line		
Data	**Pre-deployed**	**Notes**
Core Data Items		
Geometry	**X**	
Pin	**X**	
Owner (insurance writing)	**X**	
Mailing address	**X**	
Street Address	**X**	
Parcel Use Code	**X**	
Owner Type (federal , pvt,, commercial, tribal) Important for insurance purposes	**X**	
Structure Present: Basis of risk assessment	**X**	
Value	**X**	Value - damage analysis assesses the % of loss which can be used to determine the magnitude of the rebuilding effort and an estimate on how long people will be out of their homes.
Organizations.		
Construction Type - different types of building material.	**X**	
Property elevation	**X**	
Number of structures	**X**	
Type of agriculture	**X**	

Environmental Protection Agency – Superfund Program

Title: Superfund Program

Jurisdiction: US and its Territories

Description of Activity:

CERCLA: Superfund is the name given to the environmental program established to address abandoned hazardous waste sites. It is also the name of the fund established by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA statute, CERCLA overview). This law was enacted in the wake of the discovery of toxic waste dumps such as Love Canal and Times Beach in the 1970s. It allows the EPA to clean up such sites and to compel responsible parties to perform cleanups or reimburse the government for EPA-lead cleanups.

How Superfund Works

The Superfund cleanup process is complex. It involves the steps taken to assess sites, place them on the National Priorities List, and establish and implement appropriate cleanup plans. This is the long-term cleanup process. In addition, the Agency has the authority

- to conduct removal actions where immediate action needs to be taken;
- to enforce against potentially responsible parties;
- to ensure community involvement;
- involve states; and
- ensure long-term protectiveness.

The blueprint for these activities is the National Oil and Hazardous Substances Pollution Consistency Plan (NCP), a regulation applicable to all federal agencies involved in responding to hazardous substance releases.

Over the past 20+ years, they have located and analyzed tens of thousands of hazardous waste sites, protected people and the environment from contamination at the worst sites, and involved others in cleanup.

EPA's Office of Solid Waste and Emergency Response (OSWER) in Washington, D.C. oversees the Superfund program.

RCRA: The Resource Conservation and Recovery Act (RCRA) grants EPA and authorized states the authority to regulate hazardous waste management facilities that treat, store, or dispose of hazardous waste. Although EPA guidelines are designed to prevent toxic releases at RCRA facilities, accidents or other activities have sometimes released pollutants into soil, ground water, surface water and air.

The RCRA Corrective Action Program, run by EPA and 41 authorized states and territories, compels responsible parties to address the investigation and cleanup of hazardous releases themselves. RCRA Corrective Action differs from Superfund in that Corrective Action sites generally have viable operators and on-going operations.

These programs are designated in the Stafford Act to be responsible for dealing with hazardous spills and with containing and disposal of hazardous waste in disaster areas. Hazardous waste spills frequently occur during floods as was experienced in Katrina and recent Oklahoma floods.

How is parcel data used?

EPA knows where the existing sites are. Parcel data is principally used to identify and contact the owners of impacted properties. Those properties of concern may be properties surround a Superfund site, in the cone of a hazardous material release, or in the case of flooding such as occurred during Katrina, to identify and track properties to dispose of household hazardous waste, white goods (refrigerators) and propane tanks.

EPA Core Data Needs and Time Lines for CERCLA and RCRA		
Data	**Pre-deployed**	**Week 1**
Core Data Items		
Geometry	**X**	**X**
Pin	**X**	**X**
Owner	**X**	**X**
Mailing address	**X**	**X**
Street Address	**X - navigation**	**X - navigation**
Parcel Use Code	**X - detailed**	**X - detailed**
Owner Type (federal , pvt, commercial, tribal)	**X**	**X**
Structure Present	**X**	**X**
Value	**X**	**X**
Other data		

Benefits to local communities: Protect communities from exposure to hazardous materials. It should be noted that there are different procedures for different types of property. For example EPA has more authority to clean up residences.

Benefits of having parcel data: Provides a complete inventory of properties, owners and their spatial proximity to hazardous waste.

Housing and Urban Development – Office of Policy Development & Research

Type of Activity: Advises Secretary on HUD Policy Issues

Jurisdiction: U.S. and its Territories

Description of Activity:

To carry out its mission, HUD engages in research and develops policies to help socially and economically disadvantaged Americans secure adequate housing in safe communities. PD&R contributes to HUD's mission by maintaining current information to monitor housing needs, housing market conditions, and the operation of existing programs; and by conducting research on priority housing and community development issues (NRC 2003) HUD's Office of Policy Development and Research also has recently been tasked by Congress with developing long-term housing assistance to communities ravaged by Hurricanes Katrina, Rita, and Wilma. As part of this agenda, HUD has recognized that parcel data can be useful in tracking information about housing units.

How is parcel data used?

Census data provides a generalized view of the geography but parcel data provides more detailed information that can:

- support HUD's policy and decision making;
- help assure the accuracy of information
- support loans, grants and outreach activities for community development
- enable integrating and sharing local, State, and federal data such as
    - Damage inspection (FEMA)
    - Loans and grants from other federal agencies
    - State Community Development Block Grants
    - City Building Permits
    - Et cetera

Data is linked using the parcel situs address

Benefits to local communities:
The 1983 National Academies National Research Council's (NRC) report[3] suggested that a major benefit from a national partnership for assembling parcel data would derive from having a standardized set of records for managing federal assistance to local programs. The most direct and long-standing regulations and assistance requirements are related to HUD. A NRC report, *GIS for Housing and Urban Development*, recommended that HUD create an urban spatial data

[3] National Research Council, *National Land Parcel Data, A Vision for the Future*, The National Academy Press, Washington, D.C., 2007, p 46

infrastructure that includes parcel-level data. Parcel-level reporting would help HUD meet many of its strategic goals, such as increasing homeownership opportunities, promoting decent affordable housing, and ensuring equal opportunities in housing. These goals are accomplished through an extensive range of grant programs that are organized into the following categories.

- Community Planning and Development (21 programs)
- Housing – Federal Housing Administration
- Single-Family Housing Programs (17 programs)
- Regulatory Affairs and Manufactured Housing (3 programs)
- Multifamily Housing Programs (17 programs)
- Public and Indian Housing (15 programs)
- Fair Housing and Equal Opportunity (7 programs)
- Policy Development and Research (3 programs)
- Government National Mortgage Association (Ginie Mae) (4 Programs)
- Health Homes and Lead Hazard Control

HUD also operates and Office of Federal Housing Enterprise Oversight that has the specific mission to promote housing and strong national housing finance system by ensuring the safety and soundness of Fannie Mae (Federal National Mortgage Association) and Freddie Mac (Federal Home Loan Mortgage Corporation).

Benefits of having parcel data:

Effective management of these programs requires the property information included in parcel data. While HUD has had long-standing programmatic needs for parcel-related data, the 2005 hurricane season thrust the federal oversight of housing issues into a new arena. In 2006, HUD was tasked by Congress with developing long-term housing assistance of Gulf Coast communities attempting to rebuild after Hurricanes Katrina, Rita, and Wilma,. One element of HUD's response involved pro-active exploratory research using collected parcel data for the impacted communities. The existence of national land parcel data would provide HUD with data it needs for effective management of grants and would have avoided the critical time wasted gathering parcel data piecemeal in the wake of recent hurricanes.

HUD Core Data Needs and Time Line		
Data	**Pre-deployed**	**Month 2**
Core Data Items		
Geometry	**X**	**X**
Pin	**X**	**X**
Owner	**X**	**X**
Mailing address	**X**	**X**
Street Address	**X!**	**X!**
Parcel Use Code	**X**	**X**
Owner Type (federal , private commercial, tribal)	**X**	**X**
Structure Present	**X**	**X**
Value	**X**	**X**
HUD Needs		
Age of Structure	**X**	**X**
Structure Type?	**X**	**X**
Sq. ft of structure	**X**	**X**
Sq. ft of parcel	**X**	**X**
Date of record	**X**	**X**

Small Business Administration

Title: *Expediting Disaster Response – Providing Loans in Response to Catastrophic Disaster*

Type of Activity: Disaster Recovery

Jurisdiction: US and its Territories

Description: The Small Business Administration (SBA) provides long-term low interest loans in the event of a disaster to home owners and businesses. The largest number of loans goes to home owners.

Uses of Parcel Data: SBA needs parcel data to meet their stated objective of processing claims within 21 days of receipt of the application. During the fall of 2005, Hurricanes Katrina, Rita, and Wilma destroyed portions of Florida, Alabama, Louisiana, Mississippi and Texas. These hurricanes wreaked devastation on home and business owners and collectively represent the worst natural disasters in the history of the United States of America. The magnitude of these disasters caused more home and business owners to apply for disaster loans from SBA's Office of Disaster Assistance (ODA) than any previous disaster. Over 420,000 home and business owners applied for assistance. Due to the unprecedented nature of these disasters, the average time to process 85% of all applications (the current SBA performance output measure) exceeded the averages of previous years.

How is parcel data being used: SBA is in the process of evaluating ways of utilizing parcel data to proactively complete the majority of a loan application before someone applies: This should greatly expedite the processing of an application by reducing errors in the completion of the form while verifying the authenticity of the information being provided.

Benefits to local communities: Billions of dollars are being spent to rebuild communities and to get the local economy back on its feet.

- More efficiently and effectively provide loans.
- Not wasting tax prayer monies.
- 7 billion dollars to Katrina
- SBA money provides low interest rates to rebuild homes and businesses at an extremely low rate 2.75% to 6%

Benefits of having parcel data for SBA:

- Pre-populate applications before applicants do it themselves. Reduces error and expedites the processing of loan applications.
- Incomplete applications hold up processing. Applicants may not understand the question or not know where to get the information.

- The Assessor's Office and assessment database should serve as a liaison to the other community's data.
- Parcel data provides base information for:
  - Proof that taxes are paid
  - Verification of ownership
  - Accurate information about residences
  - Spelling of owner name
  - Loss verification
- Acquiring information from an authoritative data source helps prevent fraud.

SBA Core Data Needs and Time Line			
Data	**Pre-deployed**	**Week 1**	**Month 1** 2nd Wave
Core Data Items			
Geometry	**X**		
Pin	**X**		
Owner	**X**		
Mailing address	**X**		
Street Address	**X**		
Parcel Use Code	**X**		
Owner Type	**X**		
Structure Present	**X**		
Value	**X**		
SBA Needs			
Multiple owners		**X**	
Unknown Data needs			**X**
Zoning			**X**
All Structures		**Maybe**	**X**
Documentation f use codes			**X**
Liens on the property –			**X**
Titling information			**X**
Properties with missing titles and verification of ownership. The Assessor's Office through the assessment records can serve as a "liaison" to other community's data.			**X**

USGS - Structures

Type of Activity: National Map - Structures

The National Map is a consistent framework for geographic knowledge needed by the Nation. It provides public access to high-quality, geospatial data and information from multiple partners to help support decision making by resource managers and the public. *The National Map* is the product of a consortium of Federal, State, and local partners who provide geospatial data to enhance America's ability to access, integrate, and apply geospatial data at global, national, and local scales. The U.S. Geological Survey (USGS) is committed to meeting the Nation's needs for current base geographic data and maps. The vision of the USGS is that, by working with partners, it can be ensured that the Nation has access to current, accurate, and nationally consistent digital data and topographic maps derived from those data.

Jurisdiction: US and its Territories

Description of Activity: Mapping

The USGS identified structures as a major gap in the NSDI and as a result the USGS Geospatial Information Office began working with the Department of Homeland Security (DHS) and the National Geospatial Intelligence Agency (NGIA) to build a structures layer that would be included in the National Map. Structures are considered one of the broad groups of the DHS infrastructure data model. The current focus is on essential facilities (schools, hospitals, police stations). Pilots are underway to explore ways of acquiring residential and commercial properties in disaster prone areas that are susceptible to hurricanes, floods, earthquakes, etc.

How is parcel data used?

The National Maps Structures effort is designed to build and make the data available in a standard format to other organizations who would be the users. The USGS Geographic Information Office functions as an integrator for structures data. There is considerable concern about having a trusted source of data.

Benefits to local communities:

The USGS GIO would serve as an integrator, broker and facilitator to acquire, standardize, provide documentation, develop inventories, correcting and providing the data back to the sources so the data would serve as base line fro a common representation and communication. During an event all parties are looking at the same data. The format can serve as a base line for data exchange with other communities.

Benefits of having parcel data: The Assessor's data addresses the concerns of trusted source of data for residential and commercial properties for all areas of concern. It provides an accurate representation of properties that is updated annually.

USGS National Map Core Data Needs and Time Line		
Data	**Pre-deployed**	**Refresh NA**
Core Data Items		
Geometry	**X**	
Pin	**X**	
Owner (FEMA)	**X**	
Mailing address (FEMA)	**X**	
Street Address	**X**	
Parcel Use Code		
Owner Type (federal , pvt, commercial, tribal)	**X**	
Structure Present	**X**	
Value (FEMA)	**X**	
Other Needs		

Industry

ESRI

Title: *Software Developer, Data and GIS Services Provider*

Type of Activity: Applications and Data Services

Jurisdiction: World wide market

Description of Activity: ESRI is an applications and service provider. They created the Geography Network and ArcData Online to gather and provide a variety of geographic data. Their interests are to support all GIS users by facilitating the gathering and publication of a variety or geographic data because the software and services they provide have a synergistic relationship with the data: the applications need data and the users need tools to explore, analyze and evaluate the data. Following this model ESRI supports and promotes data sharing policies by counties, states, federal agencies so that agencies and organizations that plan for and respond to disasters are ready in time of an emergency.

Role in geospatial community:

- Provides technology to promote data sharing for the betterment of the community;
- Provide sounding board for the GIS community;
- Recognizes the value of sharing data to support a common infrastructure; and
- Develop tools and infrastructure such as the Geography Network which was one of the first portals which assists with the discovery and download various data sets.

How is parcel data used? ESRI software supports all different type of geospatial data.

Benefits to local communities:
ESRI's view of parcel data is that it is valuable asset to the community beyond the benefits to the assessment process. Parcel data provides an often used base geography layer for local government, along with a detailed description of the characteristics of the property. Utilizing appropriate tools it can used to locate individual properties or describe a community as a whole by summarizing the characteristics of each property. This information can be used to support everything from economic development, land use planning and management to community health.

Benefits of having parcel data:

ESRI considers parcels an important data layer as demonstrated by the recent publication of *GIS and Land Records, The ArcGIS Parcel Data Model* through ESRI press.[4]

ESRI Core Data Needs and Timeline: ESRI does not use data except in the context in of building an application for clients.

[4] von Meyer, Nancy, GIS and Land Records, The ArcGIS Parcel Data Model, ESRI Press, Redlands CA, 2004

First American Corporation

Type of Activity: Location Information, Geocoding, Insurance Ratings, & Conversion Services

Jurisdiction: Worldwide

Description of Activity: The First American Corporation was established as an Abstract and Title Company in Orange County, CA in 1889. In the 1960's, offices were located outside of California. By the 1980's, the company had offices in every region of the US. The core business operations for First American Spatial Solutions are based on location information and the Spatial Solutions Parcel Layer. Currently, the parcel layer has over 80 million parcels in its database with a goal to have 110 million digital parcels within the next year (2009). Parcel data provides the geography to correlate other data elements within the First American data libraries which is essential to supporting business operations requiring accurate geographic location. This data serves as a key component for many of First American's core business operations such as Flood Zone Determinations and precision location for disaster impact and insurance rating services. For example, First American's PxPoint geocoder is built to ingest parcel data, creating a more accurate position of the geocode returned, thereby eliminating the guess work that is present in a traditional interpolated geocode.

How is parcel data used? Parcel data is used as the unit of geography for the spatial integration and assessment of a variety of data. Parcels create a more efficient and accurate way of determining property ownership risk and provides superior location precision to any user in need of more accurate location-specific information.

Benefits to local communities:

As a business, First American's benefits to a community are measured by the services provided

- Enhanced location services for a variety of industries through the PxPoint geocoder
- Increased accuracy for insurance ratings involving hazardous risk
- Address and property descriptions for first responders
- Parcel Conversion Service

First American gathers vector parcel data available for a nominal fee with few or no restrictions on its use. The company's business model outlines actions to build data where digital parcels do not exist. First American has a business requirement for the acquisition of parcel data and is ready and willing to enter into cooperative agreements with communities. The company will convert and/or maintain the parcels, returning data to the local governments with a range of sharing options that are related to the local governments' contribution.

Benefits of having parcel data: Parcel data serves as a spatial integrator of data which can be used in various forms to enhance business products and applications.

First American's Core Data Needs and Time Line	
Data	**Pre-deployed**
Core Data Items	
Geometry	**X**
Pin	**X**
Owner	
Mailing address	
Street Address - FA will derive if it does not exist. Builds confidence.	**X - Optional**
Parcel Use Code	**Optional**
Owner Type (federal , private, commercial, tribal)	**Optional**
Structure Present	**Optional**
Value	**Optional**

Intergraph Corporation

Type of Activity: **Spatial Information Management Software**

As a leading global provider of spatial information management (SIM) software, Intergraph Corporation fuses spatial capabilities to security, helping some of the world's largest government, military, and industrial organizations in more than 60 countries better manage their operations and safeguard their infrastructure. Using these solutions organizations build and manage complex systems and operations that make the world work – from oil and gas, utilities, communications, and transportation networks to national security and public safety systems

Jurisdiction: Worldwide

Description of Activity:
Intergraph serves a wide spectrum of industries, ranging from commercial photogrammetry and public safety to plant design and construction, local utilities and communications, and the U.S. federal government. Although diverse, they all share the need to manage and view complex information through a visual representation to make better, faster operational decisions. Parcel data is an important to all of the listed industries with the exception of Marine Shipbuilding.

- Commercial Photogrammetry
- Communications
- Government
- Marine - Shipbuilding and Offshore
- Military & Intelligence
- Process & Power - Chemical
- Process & Power - Consumer Goods
- Process & Power - Metals & Mining
- Process & Power - Nuclear & Power Generation
- Process & Power - Oil & Gas
- Process & Power - Pharmaceuticals
- Public Safety
- Transportation
- U.S. Federal
- Utilities - Electric
- Utilities - Gas
- Utilities - Pipeline
- Utilities - Water /Wastewater

How is parcel data used?
Parcel data needs are dependent upon the individual clients and applications but generally it is used across all of Intergraph's capabilities. General areas of use are

- Solutions for land administration and land management.
- 911 applications –
- Utilities: Infrastructure and Facilities Management

Benefits to local communities: Client driven needs.

Benefits of having parcel data: Parcel data provides the richest and most granular level of geography. It serves as a core data layer that horizontally is useful to all of Intergraph's land management business solutions.

Core Data Needs: Dependent upon client needs. In 911 services it was noted the value of linking the Automated Number Identification (phone numbers) to be used for auto dialing residences in areas that are threatened by an event.

States

Florida (Department of Revenue Mapping and GIS)

Type of Activity: Parcel Integrator and Technical Support

Jurisdiction: Florida

Description of Activity: GIS and Mapping for Florida's Property Tax Administration. The Florida Department of Revenue (DOR) provides oversight of the County Assessors to ensure equanimity of property assessment. The DOR GIS and Mapping has a long history of providing aerial photography to the counties along with technical support and training for mapping. In the late 1990's they began a "Parcel Data Development Program" that did two things; 1) it transitioned the aerial photography program to an orthoimagery program and; 2) it provided financial support to the smaller local governments to assist them with conversion of hard copy maps to GIS. The program has been successful in that all of the counties are now using GIS to manage their parcel data and they are provided with updates to their 1 ft orthoimagery on a three year cycle. The GIS and Mapping Office also provides technical training to the Appraiser's Office along with guidelines for mapping.

Florida has had statutes since 1976 that requires the Assessor Offices to submit a standard file to the Florida Department of Revenue. Over the past several years the Assessors have begun providing parcel geometry. The GIS and Mapping Office has served as an integrator to compile this data into a standard format and the data is available through its FTP download site.

How is parcel data used? The Property Tax Administration uses the parcel data to ensure equanimity of assessment. Each year the County Tax Rolls are reviewed using the data that is submitted to DOR. The parcel data is also shared with the various state agencies and it is used for applications that vary range from emergency response, land acquisition and preservation and to address water management concerns. As in Montana the number of applications in which this data is used is continually expanding.

Benefits to local communities: The Florida Department of Revenues Orthoimagery and Parcel Management Programs provide support to the counties for their GIS Offices, guidelines, contract management and technical services to support these efforts. This is particularly critical for the counties with smaller populations and although Florida is contending for the third largest state, 17 of its67 counties in Florida have populations of less than 25,000.

Florida is susceptible to both hurricanes and wildland fires. Having a complete parcel fabric in place does much to aide emergency responders. Because the parcel data was packaged and ready to deploy the US Forest Service was able to utilize the parcel data for 2007 Georgia-Florida Fires within 24 hrs.

Benefits of having parcel data: The most direct benefit to DOR's Property Tax Administration core business is that the parcel geometry allows the agency to use the spatial analytic tools of GIS to improve equanimity of property assessment. The spatial component allows them to identify similar parcels across a county and between counties which was not possible before the use of GIS.

Parcel Data Needs: As the oversight agency for the source of the parcel data DOR can be viewed as a direct user of production data. They integrate and publish a subset of the data for other users.

Louisiana (Louisiana Geographic Information Center, LAGIC)

Type of Activity: Data inventory, technical assistance and training

Jurisdiction: Louisiana

Description of Activity: LAGIC was established by the state legislature to assist the Louisiana GIS Council (LGISC) and the Louisiana Office of E-Services in facilitating the distribution of geographic information, provide technical assistance, and support GIS data development among Louisiana state, and local governments. Louisiana has 64 Parishes and Orleans Parish has an additional six assessors. According to the 2000 Census, twenty-four of the 64 Louisiana parishes have populations of less than twenty-five thousand and four of those Parishes have less than ten-thousand residents. A recent survey conducted by LAGIC indicates that approximately 40% of the Parishes in the state have some digital parcel data in a GIS or CAD mapping program. LAGIC has assisted parishes that are interested in adopting GIS technology by providing training opportunities and speakers from other parishes that are using the technology to serve as mentors for those that do not. In addition, LAGIC provides "best practice" examples of other Louisiana Assessors and information on cadastral data standards. LAGIC has conducted two surveys of GIS capability among parish assessors. This years' web based survey will be presented at the annual Louisiana Assessors Conference in March and be distributed at that conference. According to the survey responses, the primary impediment to adopting GIS technology was financial, followed by difficulty in finding and retaining experienced staff.

How is parcel data used? Currently the Parishes provide annual tax roll data in digital form to the LA Tax Commission. LAGIC is in the process of creating a data portal that parishes could use to make their data more accessible.

Benefits to local communities: Several Parishes have asked LAGIC to host the data through the LouisianaMAP portal for public access when the portal becomes available.

Summary: The state has recognized the importance of digital parcel data and has recently passed legislation to consolidate the assessor offices in Orleans Parish from seven to one. Louisiana can be seen as a state that is in the initial stages of providing assistance to local communities. They currently have a data inventory with contact information for parcel data in their state and the LouisianaMAP Data Portal will soon be available. There appears to be an interest on the part of some Parishes to take advantage of the LouisianaMAP Portal to provide public access to their data and to act as a data backup site during natural disasters. Currently they would rated by the Cadastral Subcommittee as being at the first level of stewardship for parcel data. Louisiana is a State that is poised to do a considerable amount with outside assistance.

Montana

Type of Activity: Integrator and steward of Montana's parcel data.

Jurisdiction: Montana

Description of Activity: Montana Department of Revenue (DOR) has the responsibility for centrally managing parcel data for the state. The Montana DOR has always had the responsibility of managing CAMA data and in 1997 they began a parcel management program to create and maintain parcel geometry for forty-eight of the fifty-six counties that did not have parcel geometry. The seven counties that maintain their parcels in a GIS provide their data to be integrated with the DOR geometry to create a statewide coverage of parcel data. DOR has an office in each county that provides the assessment data to the state.

Montana DOR serves as the Steward for the data and provides it to a State Integrator who compiles the data into a common format. This data is served to the public through a State Portal.

Having accomplished the compilation and publication of the data the integration office has begun the next challenge of vertically integrating the parcel data with sub-themes (State Trust Lands, Federal Lands, private parcels, etc.). Boundaries have become a significant challenge in the vertical integration for such things as school districts, Census Tracts, county boundaries and others that impact which taxing district that a parcel is in.

How is parcel data used? The Montana GIS Office serves as an integrator and publisher of parcel data. The data is used by State and Federal agencies in a wide variety of applications but the GIS Office does not h track the other uses. It is known that this data was used by the US Forest Service for the 2006 and 2007 wildland fire season. The Montana GIS Office is using parcel data as a base fabric layer and they are working with Federal, State and Local governments to develop procedures for vertically integrating many other layers.

Benefits to local communities: The vertical integration will provide a tool to correct tax records in support of fair and equitable taxation. Furthermore accurate boundary files will facilitate accurate Census demographics which are used for the distribution of many types of Federal funding.

Benefits of having parcel data: The creation and management of parcel data is a core business function of the State DOR. The GIS Office is an integrator and publisher of that data for other users.

Parcel Data Needs:
Montana's GIS data layer is connected to the DOR CAMA database. The published data includes the FGDC Cadastral Core Data is a subset of the CAMA database and includes approximately 20 attributes.