The Assessor as an Integral Partner in Disaster Planning, Response, and Recovery: 1. Overview of the Damage Assessment Process

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This article is the first in a two-part series. It describes federal, state, and local roles in disaster response, the types of assistance that are available, and the three forms of damage assessment. Part 2, which will appear in the next issue of , will describe the Integrated Damage Assessment Model developed by the Volusia County, Florida, Appraiser's Office. This series is adapted from a presentation given by the author at the 72nd Annual International Conference on Assessment Administration—International Concepts, Hometown Applications, Milwaukee, Wisconsin, on October 9, 2006.

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Natural disasters are chaotic situations. But with proper preparation and planning, it is possible… to restore order, quickly alleviate the suffering of those affected, and get on the road to recovery. In Florida, we plan for the worst, hope for the best and expect the unexpected.

Because critical response components are best administered at the local level, planning for disasters and emergencies also begins at the local level. In Florida, each county and municipality has a plan that covers every aspect of emergency management—before, during and after a disaster.

…local governments that fail to prepare are preparing to fail.
(Bush 2005)

Natural disasters—fires, floods, ice- and snowstorms, tornadoes, hurricanes, and earthquakes, to name a few—occur everywhere. The first response to any disaster, human or natural, is to save and preserve the lives of victims; there is no higher calling. Once life-and-limb rescue operations are under way, the next level of response to a disaster is to determine the extent of the damage. The Red Cross shows up early and requires no forms, providing tremendous assistance to both victims and relief workers in the early stages of a disaster.

However, state and federal response agencies, such as the Federal Emergency Management Agency (FEMA), Small Business Administration (SBA), United States Department of Agriculture (USDA), Department of Energy (DOE), National Oceanic and Atmospheric Administration (NOAA), Federal Aviation Administration (FAA), have requirements for the gathering and dissemination of damage data. Some (most notably, FEMA and SBA) have funds available to assist communities, businesses, and individuals, but all require estimates of damage before funds begin to flow. After a disaster, local recovery efforts are essentially on hold until money flows in to pay for removing debris and rebuilding critically damaged local government infrastructure (roads, bridges, sewers), not to mention restoring affected governments' ability to meet their own payroll, purchase supplies, and so on. No state or federal agency writes a single check without estimates of damage, on its forms, filled out its way. The damage assessment process is a critical part of disaster response and recovery.

Gilreath's management axiom no. 1 covers why estimating the extent of disaster damage is so important: "You can't manage it if you can't define it…." *Damage Assessment* is the proper term for identifying the "what" and "how much" after a disaster strikes. The proverbial water surrounding Damage Assessment, however, is wide and deep and not comprehensively defined anywhere. Damage Assessment activities occur multiple times after a disaster, because federal, state, and local government agencies define the activities at their level of involvement. To my knowledge, all-inclusive discussion of the topic is virtually nonexistent.

Part 1 of this series attempts to provide a comprehensive overview of the Damage Assessment process, and Part 2 presents an Integrated Damage Assessment Model (IDAM). This model allows consolidation of an assessor's database informa-

tion, both administrative and detailed by appraisal characteristic, and provides the capability to perform damage assessment in the field. This IDAM is a working model that has been distributed to all sixteen cities in Volusia County. The model is a Microsoft® Access-based application, which manages damage data from one end of the process to the other. The system is designed to ensure data continuity so that subsequent visitors to a property have the benefit of the data gathered by earlier ones. Reducing data redundancy cuts costs, particularly if a government agency is using tax dollars to pay vendors to perform tasks already initiated. Data reporting also is provided by the model. The Volusia County Property Appraiser's Office (Florida's name for assessor is "property appraiser") has been involved in this process since 1993, responding to twenty-two disasters, plus five weeks of work in Mississippi after Hurricane Katrina in 2005. The model was developed during 2005–2006 for a geographic area that has proven quite disaster prone. It is available at no cost through e-mail to any jurisdiction that wishes a copy.

Disasters are like family emergencies: You stop what you are doing and work toward returning to normalcy as soon as possible. Often the community hit by the disaster is the least able to respond, so many companies and governmental jurisdictions around the country plan and prepare, knowing they are more likely to be helping someone other than themselves.

Federal, State and Local Roles in Disaster Response

Effective disaster response is a function of management and organization. The topic of disaster response organization may not invite intellectual excitement unless you are viewing extensive tornado damage in your own neighborhood. Then it becomes very *up front and personal* as well as an adrenaline exercise. The media was on a feeding frenzy after Hurricane Katrina because local, state, and federal officials were alleged to have not prepared properly for the storm. Volusia County conducts hurricane simulations and other disaster simulations every year, but simulations and exercises do not prepare a community for what is coming. They prepare people to be able to think and act through whatever does come their way. It's like training for any event: team members train with teammates, who are not the team they will play against. Realistic training, however, enables them to think and act appropriately on game day.

The real reason for all Damage Assessment activities is to determine the extent of damage so the disaster can be responded to by the proper state and federal agencies with an appropriate and hopefully adequate amount of disaster assistance.

A number of federal agencies are available to assist local governments when disasters occur. In disaster management, responses begin at the bottom (local government) and work up from there. However, since September 11, 2001, prediction and preparation have taken on new meaning through all levels of government. In 2004, Florida had a record number of hurricanes. Three of them passed through Volusia County in nine weeks, stretching the county's ability to respond. In 2005, Hurricane Katrina brought a new perspective to what can happen when all levels of government are faced with catastrophic circumstances. Since Katrina, all levels of government more fully understand the importance of preparation and cooperation.

The two federal agencies most involved in disaster management and response at the local level are FEMA, which has funds available for both public and private needs, and the SBA, which makes low-interest loans to both businesses and private individuals. Other individual disaster assistance programs are Disaster Unemployment Assistance and the Farm Service Agency. Other programs may be available in other states. FEMA is now organized under the Department of Homeland Security. Local government data for homeland security purposes is another untapped reservoir of information. Assessment databases are part of that reservoir. A nonfederal agency at every disaster site is the Red Cross, which has more experience in disaster assistance than any other agency and a great deal of materials available for research. All these agencies have damage assessment guidelines, each of which has a slightly different description of minor, major, and destroyed properties for damage assessment purposes.

At its headquarters in Emmitsburg, Maryland, FEMA has a curriculum of courses covering most types of disasters occurring in the United States. FEMA and Volusia County jointly presented a special introductory course on hurricane disaster management, which was attended by more than 100 city and county personnel from most of the county's sixteen cities. After that week of working and planning together, county personnel have not had any jurisdictional boundaries get in the way of disaster operations. It took a year to set up the training session, which included a simulated hurricane using local Volusia data, but it was a tremendous team-building exercise, which is still paying dividends.

Most states and counties have their own department of emergency management and emergency operations centers (EOCs), although many small counties may have designated the sheriff, the fire department, or some other department to handle this function. When local governments are large enough to have an internal organization, the federal model is for them to identify emergency support functions (ESF), each addressing different needs arising during response and recovery efforts. Each of these ESFs plays a role in every disaster response. Table 1 compares the federal, State of Florida, and Volusia County ESFs. Damage Assessment, no. 19, is the responsibility of the county property appraiser. Figure 1 shows the Volusia County Department of Emergency Management organization of its nineteen

Table 1. Comparison of Federal,State, and Local Emergency Support Functions

	Federal		State of Florida		Volusia County	
ESF	Name	Primary Agency	Name	Primary Agency	Name	Primary Agency
1	*Transportation*	Dept. of Transportation		Dept. of Transportation		School Board
2	*Communications*	National Communications System		Dept. of Management Services		Information Services Group
3	*Public Works and Engineering*	U.S. Army Corp of Engineers/Dept. of Defense		Dept. of Transportation		Road and Bridge Services Public Works
4	*Firefighting*	U.S. Forest Service/Dept. of Agriculture		Dept. of Insurance State Fire Marshal		Fire Services
5	*Emergency Management*	DHS/EPRFEMA	Information & Planning	Dept. of Community Affairs		Growth Management
6	*Mass Care*	American Red Cross		Dept. of Business and Professional Regulation		American Red Cross
7	*Resource Support*	General Services Administration		Dept. of Management Services		Purchasing & Finance
8	*Health and Medical Services*	U.S. Public Health Service/ Dept. of Health & Human Services		Dept. of Health		Dept. of Health
9	*Urban Search/ Rescue*	FEMA		Dept. of Insurance		Fire Services
10	*Hazardous Materials*	Environmental Protection Agency		Dept. of Environmental Protection		Environmental Management
11	*Food & Water*	Food & Consumer Services/Dept. of Agriculture		Dept. of Ag & Consumer Services		Division of Corrections
12	*Energy*	Dept. of Energy		Dept. of Com. Affairs Public Service Commission		Water & Utility Services Public Works
13	*Public Safety*	DHS/DOJ	*Military Support*	Dept. of Military Affairs		Emergency Management
14	*Long-Term Community Recovery & Mitigation*	TREAS/SBA/USDADOC/ HHS/DHSEPR/FEMA/ HUD	*Community Information*	Dept. of Community Affairs		Community Information
15	*External Affairs*	DHS/EPR/FEMA	*Volunteers and Donations*	Florida Commission on Community Service		Financial Services Revenue Activity
16	N/A		*Law Enforcement*	Florida Dept. of Law Enforcement		Sheriff's Office
17	N/A		*Animal Protection*	Dept. of Ag. and Consumer Services	*Animal Protection*	Animal Services
18	N/A		N/A		*Business & Industry*	Chamber of Commerce
19	N/A		N/A		*Damage Assessment*	Property Appraiser
20	N/A		N/A		*Person with Special Needs*	Dept. of Health

Figure 1. Volusia County Comprehensive Emergency Management Plan

ESFs into functional areas. Figures 2 and 3 show the reporting relationships, at the county level, for documenting and reporting damage assessment information from the local level through the state to the federal government.

Figure 2. ESF 19—Damage Assessment Reporting (Lead Agency—Volusia County Property Appraiser)

What Types of Assistance Are Available?

Two types of assistance are available to areas hit by disasters: public (governmental) and private (individual). Public assistance (PA) provides money directly to local governments for damages to infrastructure. FEMA is the prime source of funding for PA damages (debris removal, protective measures, roads, bridges, water control facilities, public buildings, utility systems, parks, and recreation facilities).

Individual assistance (IA) can be obtained from FEMA or SBA and is available for residential and commercial properties. Damage estimates are obtained through the damage assessment process. While IA Damage Assessment is the topic of most of this series, the database does include all public buildings and can separate that portion of PA for the user. A more comprehensive PA Damage Assessment facility is planned for the IDAM to include all areas of PA damages.

What Is Damage Assessment and Why Is It Needed?

The level of human damage (life and limb issues) is dealt with before, during, and after natural disasters by first responders from police, fire, Florida National Guard, utility companies, some regional retailers, other local and state emergency operations personnel, hospitals, and many others. For example, when a hurricane is forecast to make landfall in Florida, pre-disaster staging areas are identified, and large-scale responding units wait nearby to do whatever is needed immediately after the disaster passes. In the Gulf Coast in 2005, however, the disaster was beyond all expectations, and the preparations for it were perceived to be less than desired.

Concurrent with life-and-limb issues is the need to know the *what, how many,* and *how much* side of a disaster. The term *Damage Assessment* is applied to the process of determining the extent of damage after a disaster. The three distinct phases of Damage Assessment activities are Disaster Assessment, Initial Damage Assessment, and Detailed Damage Assessment. These activities are performed after each disaster, often by as many as three different sets of people—a situation that can easily create duplication of work and redundancy of data.

The real reason for all Damage Assessment activities is to determine the extent of damage so the disaster can be responded to by the proper state and federal agencies with an appropriate and hopefully adequate amount of disaster assistance.

Figure 3. Damage Assessment Declaration and Application

Disaster Assessment, Initial Damage Assessment, and Detailed Damage Assessment

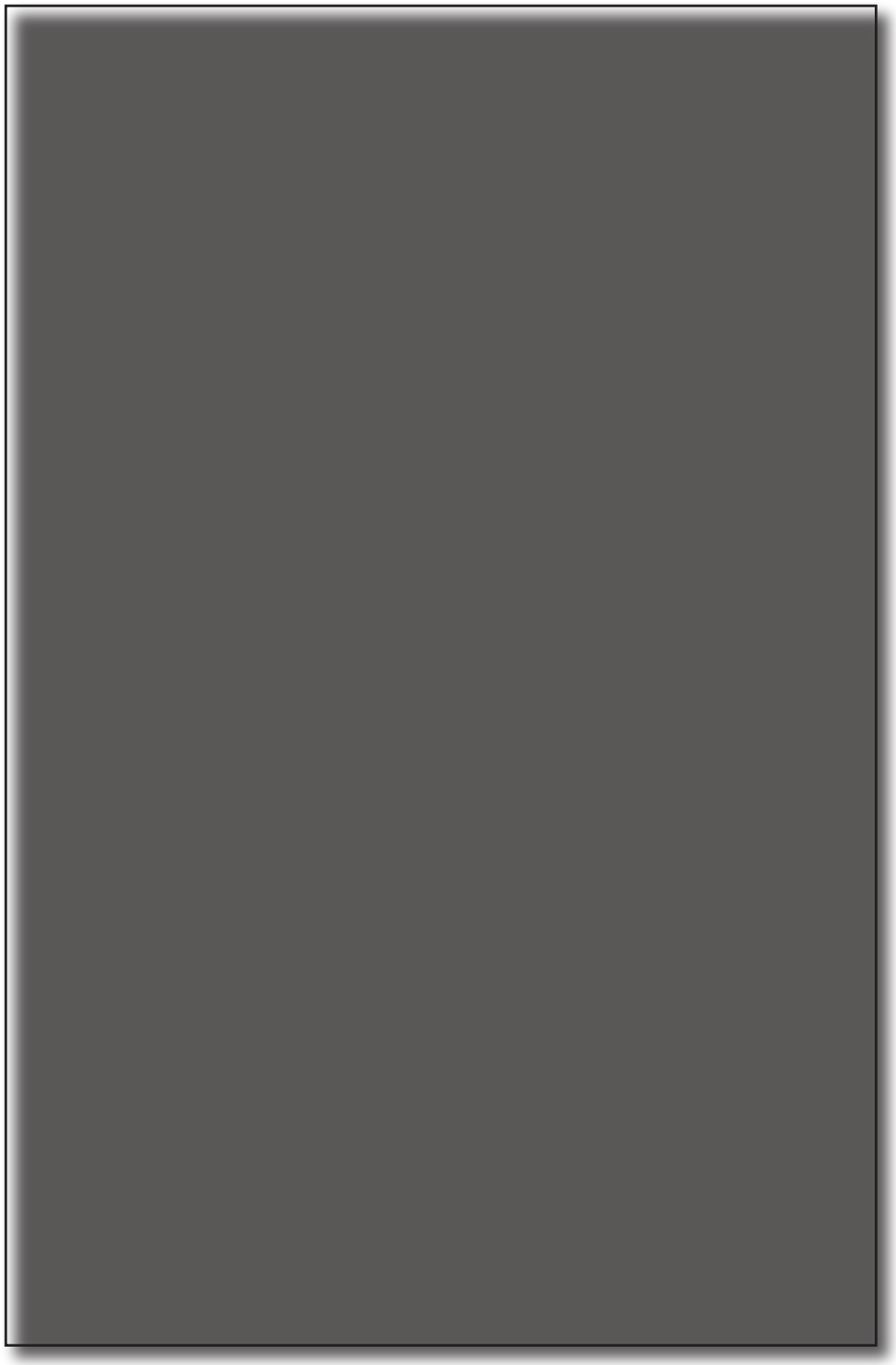
The first form of Damage Assessment is *Disaster Assessment*, which actually commences during the disaster. Disaster Assessment provides rough estimate of all facts about damage to the human condition and to property (life and limb, private property, public property, and infrastructure damage). Disaster Assessment commences upon first access to an area, often at the risk of the responders. Much of the Disaster Assessment estimate comes from first responders (police and fire) and perhaps a helicopter flyover viewing damage to infrastructure and property. Helicopter flyovers are used for more detailed inspection when the roads are not clear or safe at this time.

During Disaster Assessment, police, fire, utility, and infrastructure estimates are consolidated, so local, state and federal agencies can begin determining whether more resources need to be marshaled

into the stricken area. Even with today's technology, Mother Nature can, almost in an instant, turn a disaster of one proportion into another of entirely different and worse proportion. Some say it's an application of Murphy's Law, "If anything can go wrong, it will," which rules during every disaster. The Volusia County EOC Director, retired Marine Lt. Colonel Jim Ryan, disagrees, "You have to consider O' Shaunnesy's Corollary to Murphy's Law, he says, which states, "Murphy was an optimist."

Initial Damage Assessment follows as soon as the area is safely accessible by inspection personnel. Initial Damage Assessment is critical because this estimate, in a marginal disaster, determines which jurisdictions are "declared" disaster areas and become eligible for various levels of state and federal relief aid. In a couple of instances, state personnel have told Volusia County that the quality of its data got the county "declared" when other counties did not. The IDAM allows this function to be performed uniformly, but rapidly, with sufficient documentation, to sustain a challenge to a decision not to declare. Another important consideration at this level of damage assessment is that, when a declaration qualifying an area for FEMA aid has been received, a more detailed visitation to each property is required. At this stage, tremendous costs can be incurred by FEMA or a local jurisdiction and data redundancy or multiple visits to properties can become a costly problem. The IDAM allows for each returning damage assessment team (even if different people) to use the data of preceding personnel.

Figure 4. Harrison County, Mississippi, "Damage Assessment Form" Used after Hurricane Katrina



Detailed Damage Assessment occurs in the weeks after a disaster when FEMA and SBA establish local offices to review individual applications. These agencies need detailed documentation on each damaged property for which funding is being requested. The re-visit to these properties requires a detailed review inside the property, with estimates of the percentage of damage to interior walls, floors, electrical, plumbing, and so on. The IDAM allows for the detail already provided from a previous visit to flow immediately into view for the individual performing the detailed damage assessment work. Figure 4 shows the damage assessment form used in Harrison County, Mississippi after Hurricane Katrina struck.

Much of this work can be done by local and/or volunteer personnel. Its cost certainly justifies a review of existing procedures, because disaster relief is a very expensive operation. It is similar to the concept of a taxing jurisdiction hiring an outside firm to perform data collection for a periodic revaluation. The outside firm comes in, hires local people, completes the job, and leaves town. Alternatively, local governments could contract for the management of such an effort, still hiring the same local people who would have been hired anyway, and then learning the management skills along the way.

After Katrina, FEMA hired vendors to perform the Detailed Damage Assessment, while the Disaster Assessment and Initial Damage Assessment activities were done by different agencies. The vendors, in turn, hired individuals who visited all the properties along the Gulf Coast.

For example, a realtor was hired by a vendor and spent a number of weeks using the tablet PC program given to him, walking into and around damaged properties, and recording damage with a handheld device. Using the vendor's methodology, he was able to inspect fifteen to twenty-five houses a day. The vendor paid $50 per home inspected, so the realtor's income averaged about $1,000 per day for this work. A handheld computer with the software was supplied to input and report the damage assessment data. In Harrison County, Mississippi alone, the cost of detailed damage assessment to FEMA, including time, travel expenses, and equipment, was probably more than $3.5 million. It seems to make sense for local government volunteers to supplement private vendors, thus allowing redirection of funds to rebuilding an area.

In every major disaster, police and fire units move from state to state to assist those overwhelmed by the disaster. Assessment personnel also should organize themselves and respond, for damage assessment purposes, in the same way. Personnel from the Volusia County Property Appraiser's office spent two weeks in September 2005 in Harrison County, Mississippi, as a result of a request for assistance from the City of Long Beach to help with damage assessment. After reviewing both infrastructure and real estate damage in the city, the following January we organized three additional weeks of assistance. The Harrison County Assessor's office provided beds, and we paid our own personnel, transportation, and travel costs. From a budgeting viewpoint, we viewed it like sending staff members to IAAO school. It certainly was a tremendous learning opportunity for all of us.

There is a need for assessors' talents after disasters strike, and assessors can perform this needed and costly public service for their peers. In doing so, they can help both state and federal governments free up funds for restoring services to damaged and destroyed areas.

A Perfect Fit for Damage Assessment Activities

One must understand that, in the eye of the beholder, perception is almost always reality. This is also true of self perceptions, individual or corporate. We are, or tend to be, what we think we are. The most limiting factor in one reaching their own personal potential is a perception that they cannot perform a particular task or at a certain level. The most significant key to performance is the belief, the perception, that one's goals are attainable and that one has the skills to attain them.

To take our proper place in the forefront in the Information Revolution, to answer the call, requires that we, the Assessing Profession (corporately), have the proper perception of our role as purveyors of information. The assessing professional, individually, is a real estate appraiser, a manager, a mapper, an abstractor, computer technician, etc. Corporately, however, the assessment profession is in the information business. The assessment administrator manages a database of information critical to all areas of federal, state, and local government. This information relates directly to realtors, appraisers, state, local, and regional land planners, developers, economists, desirous home sellers or purchasers, and many others viewing any type of econometric data. Computerized maps (Geographic Information Systems [GIS]) containing parcel layers with associated land and building data (and associated other governmental data) will, one day, be part of a nationally linked system of maps and related information. The managers and maintainers of the core of this tremendous information base are our local assessing professionals.

The dissemination of this information to the public has, traditionally, been an over-the-counter operation. With the tools of today, the modern assessor has an opportunity to move to the front of this parade of information. To accomplish this, we must recognize our unique role as information brokers and capitalize on the opportunity through transforming our perception into reality! (Gilreath 1998)

In all states Damage Assessment activities are performed by a myriad of agencies—from assessors to building inspectors to police, fire, utilities, and the Red Cross. Of all the Damage Assessment responders, only the local assessor (city, county, district, province) is trained in all aspects of the job. Not only do assessors have the richest database in local or state government, but also their professional lives are literally wrapped around mass data gathering, mass valuation, and mass analysis of properties. Performing essentially the same functions after a disaster is a natural fit for the assessor. My office has responded to twenty-two disasters in Volusia County and one in Mississippi over the past thirteen years as if each were a personal disaster: "Stop what you're doing, take care of the disaster, go back to work and make up for lost time." The office has never budgeted a dollar toward Damage Assessment because it is not a predictable occurrence (other than it does seem to continue to happen). All of our emergency response activities are in addition to our assessing responsibilities. We are uniquely situated to perform this very critical function; no one else can respond at our level of proficiency at this time.

> *Ride around, record property descriptive information (what is damaged), make estimates regarding value (percentage of damage), perform this function in a mass environment and report consolidated results of our efforts.* (Gilreath 1998)

Assessors are already trained, equipped, and prepared for damage assessment work—a perfect match of critical need, talent, and available resources.

The assessment industry could easily endorse the concept of utilizing its talents in disaster work; assessors are already trained and equipped for this work. This could be accomplished (a) individually (by jurisdiction), (b) corporately (by professional association), or (c) legally (through state departments of revenue). Assessors could become, as they have in Volusia County, part of emergency preparedness operations in a way that would be meaningful and cost effective at the local, state, and federal levels. If the assessment industry became the damage assessment arm of disaster recovery, millions of FEMA dollars could be either saved or diverted. After a disaster, a volunteer core of Damage Assessment experts could be relied upon

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to perform this necessary and critical function.

In addition, involvement at this level presents the assessment industry in a very visible and positive manner. Our office has received tremendous public relations exposure just by being, in some instances, the first *responder* to arrive on site who has time to tell people, "I'm so sorry this has happened to you." First responders (police and fire) are on specific missions, and then they move on. When assessors arrive, they're on the ground in the neighborhood. They've also shared water with those who had none and made phone or radio calls for those whose utilities were out.

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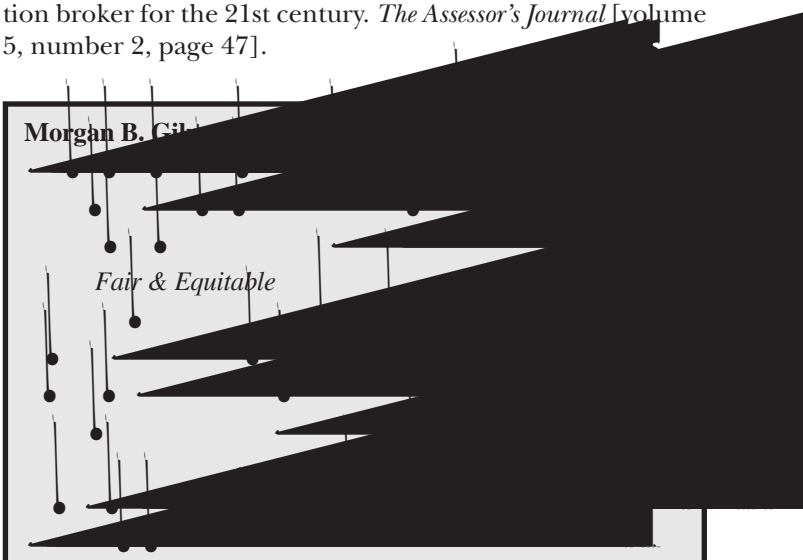

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Authors Postscript: Following the presentation of this information at the IAAO 72nd Annual International Conference on Assessment Administration, the Volusia County Appraiser's Office has received requests for copies of the IDAM system from 32 jurisdictions in 17 states and from one province. One request was from Maui, in the Hawaiian Islands, for use in assessing damage caused by earthquake activity.