Standardizing and Providing Access to Parcel GIS Data in Idaho

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In Idaho, parcels are maintained by all 44 counties and the city of Pocatello. Given that each of those jurisdictions uses its own unique combination of geographic information systems (GIS) technology and computer-assisted mass appraisal (CAMA) systems, it is not surprising that each of those parcel layers has its own unique attribution and characteristics.

This article discusses how various local, state, and federal agencies in Idaho are working together to standardize and promote the sharing of these parcel data. This article also discusses various data delivery systems already in place, Idaho statutes that affect the sharing of parcel data, as well as efforts to build a one-stop portal where consumers can select and then download parcel data in GIS format.

Note that, even though this article is written by an employee from the Idaho State Tax Commission (ISTC) and an employee from Ada County, this project would not be possible without the diligent efforts and continued assistance and support of many counties in Idaho, various state agencies (including the Idaho Department of Lands, the Idaho Geospatial Office [IGO], and the Idaho Department of Water Resources [IDWR]), as well as various private and federal agencies that have a business need for parcel GIS data.

GIS Coordination in Idaho

The IGO, in the Idaho Department of Administration, has the responsibility for providing GIS leadership and coordination among local, state, federal, and private agencies. To help focus the standardization, sharing, and problem solving in GIS, the data have been grouped in themes such as climate, hydrography, and parcels, as shown in Figure 1.

Most of the themes have coalesced into Technical Work Groups (TWGs) consisting of staff from the agencies that create, maintain, and use the specific data sets. Since 2010, a Parcel TWG has been meeting monthly to create parcel

Figure 1. GIS coordination in Idaho is organized around the themes of commonly used GIS data sets

data standards, promote the dissemination of parcel data, and resolve any other issues that may arise. Besides the chair of the parcel TWG, the membership in this group is voluntary, and participation is fluid based on the topics being discussed. For example, more state and federal agency employees participated in the TWG meetings when the group was finalizing the parcel attributes that should be included in the parcel data exchange standard to ensure that these parcel data would meet their business needs. Other agencies participated when data-sharing agreements between counties and the Idaho Department of Administration were being discussed. The Parcel TWG examined parcel sharing and standardization efforts in Utah, North Carolina, and other states to kick-start its efforts.

Any standards and resolutions created by a TWG are presented for initial approval to the Idaho Geospatial Council Executive Committee (IGC-EC). This committee, consisting of 16 members from state, federal, local agencies as well as private industry, was formed by an Executive Order of Governor Butch Otter in 2010. The standards and resolutions passed by the IGC-EC are forwarded to the Idaho Technology Resource Management Council for final approval and implementation into statewide policies, standards, and guidelines that promote uniformity and compatibility within the state.

Standardizing Parcel Attributes

Because 44 counties and one city in Idaho maintain parcel data, the need to standardize the data was obvious. The Parcel TWG spent almost a year on the development of the first draft of the *Idaho Parcel Data Exchange Standard* (http://www.gis.idaho.gov/portal/pdf/Standards/Development/Parcels%20Std_ver1%201_Nov26_2012.docx), which describes the format of the geographic and tabular aspect of a parcel data set. For example, an attribute field for a parcel identification number may be labeled *pin* in one parcel data set but *parcel_id* or *parcel_num* in others. A standardized parcel data set, with its well-defined attributes, makes it easier to merge data sets and to include parcels from various sources in geoprocessing automation. In addition, the standard specifies that all GIS data be delivered in a polygon vector format projected in the Idaho Transverse Mercator NAD 83 coordinate system.

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Early in this project it became apparent that two different standards were needed regarding the number of attributes included with the parcel data. This was because of the way counties were already delivering and charging for their parcel data. First, an exchange standard for public consumption would have to have a limited number of attributes, because in most cases it would be delivered for free. This standard is referred to as the *public standard*; the attributes contained in this standard are shown in Figure 2.

Second, a comprehensive standard with more attributes would be needed to fulfill the business needs of a number of government agencies and some private entities. This more comprehensive standard is referred to the *gov-to-gov standard* and is summarized in Figure 3. A number of counties charge a fee for this more comprehensive gov-to-gov standard parcel data set.

Note that the *Idaho Parcel Data Exchange Standard* is just that: a standard to help exchange parcel data. Counties are not required to maintain their own parcel data in the exchange standard format, nor is it mandatory for a county to share these data in the standard format. Forcing a county to maintain its parcel data in the standard format would be highly impractical, because its data format is in a large part determined by its needs and particular GIS and CAMA systems.

Idaho Statutes on Parcel Data Sharing

A number of Idaho statutes pertain to the sharing of parcel information. First, Idaho Statute 9-338, *Public Records—Right to Examine*, determines that parcel data, along with most of the associated CAMA information, constitute public information that cannot be withheld from the public if requested. Second, Idaho Statute 31-875, *Computerized Mapping System Fees*,

Figure 2. Attributes in the public standard

allows an agency to impose and collect fees for delivering parcel data to cover the development and maintenance of its mapping system, as well as the cost of disseminating this information. Figure 4 shows the fee structure in a sample of 14 Idaho counties that were willing to share the information. The mean fee for a data delivery was $243, while the median fee was $300.

Sharing Parcel Data: Online Maps

Various mechanisms currently exist to acquire data from the counties (and one city) in Idaho. A number of counties have developed Web services and online maps to deliver parcel data to the public. Other counties have opted to work with the ISTC to provide those online services. The Web site displayed in Figure 5 has been built by the ISTC to provide links directly to the Idaho counties whose parcel data are available online (http://apps.gis.idaho.gov/tax/map/index.html).

The parcel data provided in these Web applications can usually be viewed only online and cannot be downloaded for use in a GIS format. Furthermore, the attributes have not been standardized, and the number of attributes associated with the parcel data varies widely from county to county. Whereas some counties include many data elements from their CAMA system, other counties prefer to share only a parcel boundary with the parcel identification number. Figure 6 shows an example of the online map provided by Ada County (http://66.192.184.147/imf/imf.jsp?site=adapar). Figure 7 shows an example of a Web application that the ISTC has built, free of charge, for Clark County. Note that all the Web applications developed by the ISTC also work on mobile devices.

There are various reasons why counties like to provide their data through a Web service. For example, some counties report that hunters like to use the information to determine whether land is public or privately owned. Real estate agencies report liking it because they can look up much of the information online instead of calling a county. Not surprisingly, many counties like it because it simply reduces the volume of phone calls requesting parcel information. In addition, some counties with fewer resources use the Web services as additional map viewers for their own personnel.

Sharing Parcel Data: Downloadable GIS Data Sets

While the parcel-viewing applications serve a purpose, many agencies and private entities need to download the

Figure 3. Attributes in the gov-to-gov standard

Figure 4. Histogram showing the fee for parcel data in 14 different counties

Figure 5. Idaho State Tax Commission Web site with links for Web applications to most counties in Idaho

Figure 6. Online mapping application shows parcel boundaries and the associated CAMA data in Ada County and provides search and mapping tools for users

parcel GIS data into their own mapping systems to satisfy their business requirements. For example, various state and federal agencies urgently required parcel GIS data last summer in response to one of the worst fire seasons on record. In addition, a number of state, federal, and private agencies require continuously updated parcel data for their business processes.

The Idaho Department of Lands uses county parcel data in nearly every one of its business and service functions. From managing forests and assessing forest landowners for fire pro-

tection on millions of acres of state, federal, and private lands to accessing specific information about adjacent landowners for easements and planning purposes, better county parcel data will bolster the department's ability to determine the best uses of state endowment trust lands and deliver services to the public. Access to more detailed county data also will aid the department in its many other diverse functions, such as

- Directing the variety of leasing activities used to make money for public schools and other institutions

- Carrying out due diligence for transactions such as land exchanges, acquisitions, and dispositions

- Assisting forest landowners and overseeing regulation of Idaho's forest protection laws

- Regulating oil and gas development

- Managing the state's navigable waterways.

The IDWR checks the owner information in parcel data against information in its water rights database. The department also uses parcel data in its accounting of and billing for water rights as well as researching of possible water rights violations. In addition, IDWR uses parcel data to contact landowners prior to visiting well sites or water recharge areas. Parcel data play an important role in HAZUS, the FEMA methodology for estimating potential losses from disasters, which, in Idaho, include floods and earthquakes. Knowing the number and type of improvements assists in disaster planning as well as in estimating losses after a catastrophic event.

The Idaho Department of Transportation uses parcel data, including the assessed value of a parcel, to plan land purchases for new road construction.
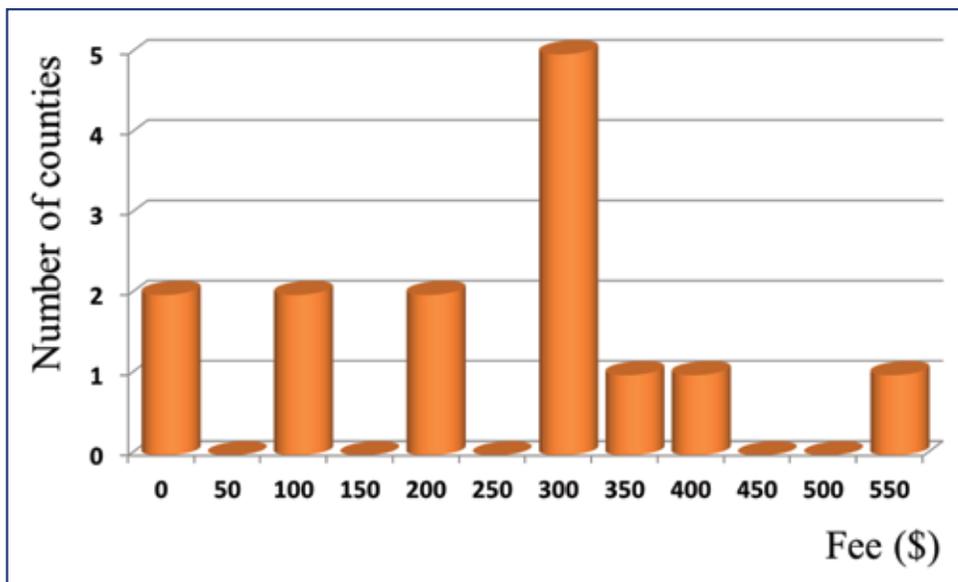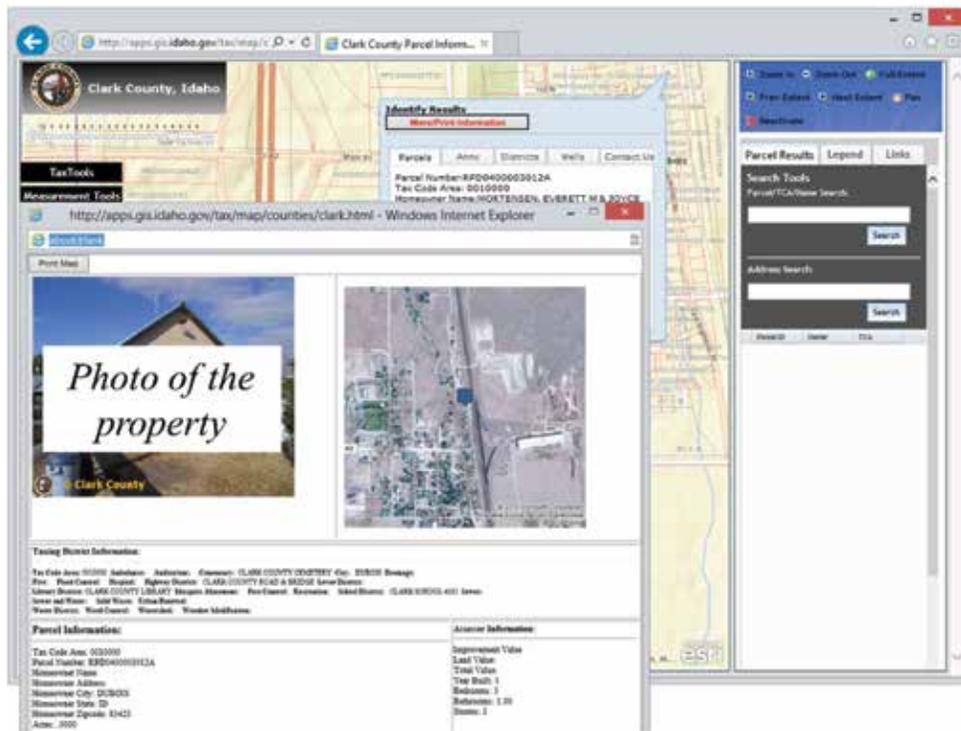
Figure 7. Online mapping application built by the Idaho State Tax Commission includes search tools by parcel number and owner. A *More/Print Information* button consolidates the information in a summary sheet that includes a photo of the property along with CAMA data and taxing district information.

Until recently the only way for agencies and private entities to obtain parcel GIS data was to contact each county assessor's office individually and request the data set. And each county delivered the data in its own unique format.

To improve the parcel data delivery system and to reduce the number of requests to a county for the data, the parcel TWG has been working with Bill Farnsworth, Idaho State Geographic Information Officer, to develop data-sharing agreements along with a data-sharing mechanism. Although the original intent was one generic Memorandum of Agreement (MOA) that the counties would sign, each county has its own idea about how, when, and what it is willing to share. As the counties have received a copy of the MOA, each has made revisions to define its specific requirements for sharing the data. In general, most revisions involve the attributes the county is willing to share and the agencies that can receive the data for free. The MOA does not cover the fee counties charge for certain data deliveries because those fees are outlined in a separate agreement between a county and Access Idaho, a private company, for fee collection and distribution.

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In addition, the MOA addresses the specifics of county updates to the Idaho Department of Administration, such as the method and the frequency of the update, as well as an agreed-upon disclaimer that states how the data must be used. For example, Idaho Code states that it is illegal for private entities in Idaho to use the addresses in the parcel data to create a mailing list. At this time, 9 of the 44 Idaho counties have signed a MOA with the Idaho Department of Administration, and examples of these agreements can be found on the IGO Web site (http://www.gis.idaho.gov/portal/TIM/parcels.html).

Once the MOA has been signed by the proper county or city officials and the State of Idaho Chief Information Officer Greg Zickau, ISTC staff contact the GIS manager in the county and obtain the parcel data and tables needed to format and compile the data in the *Parcel Data Exchange Standards* as specified in the MOA. Currently, of the nine counties that participate, three are delivering the data in the standardized format. For the remaining six counties, ISTC staff has automated data standardization using ESRI Model Builder tools to script the county data into the *Parcel Data Exchange Standards.* In the future, as more counties participate in the parcel project and the volume of GIS work increases to standardize data, this work will be spread among various state agencies. Once the parcel data have been standardized, the data are loaded onto servers housed at the Idaho Department of Administration.

Bill Farnsworth has been working with Access Idaho, a private company that can process credit card payments, to create a one-stop portal to make the parcel data, in both the public and gov-to-gov standards, readily available to the public. Depending on the parameters set by each county in the MOA, the data will be available for viewing or for downloading in either standard. If the county charges a fee

for the data, the customer can pay by credit card, and Access Idaho distributes the funds to the appropriate line item in that county's system. At the time of writing, this Web site is still under development. Bill Farnsworth is also working on a mechanism to distribute parcel data in the gov-to-gov standard from servers at the Idaho Department of Administration to other local, state, and federal government agencies that, according to the MOAs between a county and the state, can receive these data free of charge.

Over the past few years, just like every other state, Idaho has recognized that GIS applications along with parcel data sets have become an integral part of business operations, decision making, and communication. The goal of the parcel-sharing project described in this article is to support those business needs by providing easy access to frequently updated and downloadable GIS parcel data.

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