

# ESRI's New Surveying Guru

## *A Professional Surveyor Exclusive!*

**A few minutes with Brent Jones, PE, PLS,  
Surveying Industry Manager, ESRI**



*Brent A. Jones, PE, PLS, ESRI Surveying Industry Manager*

**Neil Sandler**

**I**n November 2005, ESRI, the world's leader in GIS software, brought Brent Jones on board as its new manager of surveying industry activities. Succeeding Mike Weir, who worked to broaden ESRI's range of surveying products and services and its increasingly popular Survey and GIS Summit, Jones brings with him a wealth of experience. He describes this experience in his first interview with the surveying press.

**PSM: Brent welcome aboard. Would you kindly provide our readers with a bit of background about yourself?**

I first became interested in surveying while attending University of

Maine in the early eighties. They had a Surveying Engineering program that encompassed land surveying, land law, geodesy, photogrammetry, computer mapping, computer science, land development, and some civil engineering. The development of the program was supported by a consortium of New England surveyors that saw the need for a multidiscipline surveyor. The university imported some professors well known to the surveying community including Jim Clapp, past president of ACSM and Alfred Leick, the author and early pioneer of GPS, along with many others to start the program, some are still there.

With this background, I had the opportunity to work in land surveying, civil engineering, photogrammetry, GIS data and system development,

and application development before coming to ESRI.

**PSM: How and why did you come to ESRI?**

I think it is the uniqueness of the challenge. ESRI has excellent geospatial technology and surveyors are experts in mapping, measurement, and geospatial data acquisition. On the surface it seems like a natural match, but surveyors and GIS professionals have been on divergent paths for a number of years. The challenge is to get surveyors and GIS practitioners to understand the benefits they can bring to each other. With some of the new technology, it's achievable.

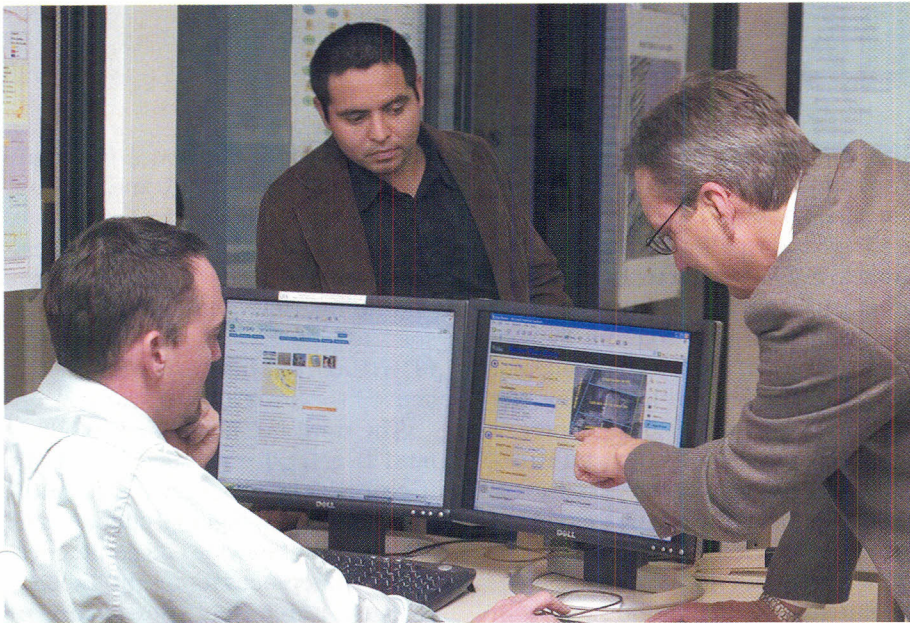
**PSM: Why did you agree to undertake this new challenge?**

I believe that surveyors can benefit greatly from the use of GIS. One area is to better manage the information they collect to improve their internal business operations. Surveyors who have implemented even the simplest GIS workflows internally have benefited greatly. Another area where surveyors can benefit is the ability to leverage their special knowledge of accurate measurement to add core services to their business and increase their revenue with existing equipment and personnel.

I've worked in both surveying and GIS and I believe that the GIS community can benefit greatly with improved relationships with surveyors, and surveyors can benefit greatly with a deeper relationship with the GIS community. We shouldn't view this as a gap, but as an area of opportunity.

**PSM: Would you give us some insight into how you think the GIS and surveying communities could best work together?**

Surveyors are the backbone of geospatial data accuracy. If you have some geospatial data that is reasonably accurate, there is no doubt that a



Analyzing parcel information overlaid on a high resolution imagery with ESRI's Ray Carnes and Donny Sosa

surveyor had a hand in it somewhere along the line. As the critical role of GIS in government and the private sector continues to expand, the demand for

more accurate data will increase as well. We've seen this happen in other areas such as imagery. The development of sub-meter imagery from satellites

increased the demand for sub-foot imagery from aerial photography.

If you look at the past from a surveyor's point of view, early GIS users relied on relatively coarse data. Now with the expanding use of GIS including infrastructure design and management, cadastral management, E911, disaster response and recovery, and a wide variety of other uses that demand more accurate data, it's a great opportunity for the surveyor and GIS practitioner to work together to improve the accuracy of critical data.

**PSM: What do you see as the most significant challenges in bringing these two communities closer together?**

The specific challenge is for surveyors to understand the benefit of GIS, how it works, and the opportunities it presents; and for GIS professionals to understand the benefit and expertise that surveyors can bring to help them improve their management and analysis, and expand the use of GIS in their organization by improving data accuracy. As we begin

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to mutually understand these benefits, we will be able to work more closely together. It's happening now in many areas and it is our job to get the word out.

Another interesting challenge is how we think about geographic data. All of us use coordinates. The GIS practitioner uses coordinates for points, lines, and polygons. The surveyor uses coordinates as the result of series of carefully observed and corrected measurements. The GIS community needs to have an appreciation of the value of these original measurements, and the surveyor needs to understand that these original measurements can be stored in a GIS database for reuse in the future. With more measurements being added to the database overtime, the accuracy of the data in the GIS can continue to improve.

dialogue working through the issues from both points of view. You present the surveyor with the GIS practitioner's view and vice versa. This will continue to help us understand how each other works and thinks.

Currently, in your column, the GIS practitioner and surveyor are different people. I look forward to the day that the surveyor is a GIS practitioner. At some point, the geospatial data workflow, from field measurement collection to GIS analysis will encompass more of the expertise offered by surveyors.

Generally, surveyors are very technical people and are quite savvy with technology, once they embrace it. If you look back to the late seventies and early eighties, outside academia surveyors were among the first to use computers and scientific calculators in their daily work. Olivetti, HP-41 and

ACSM Annual Conference in Orlando, Florida, April 21-26, and the Survey and GIS Summit in San Diego, California August 5-8. Both of these conferences have excellent programming that address today's issues for surveyors, and both offer PDH/CEU opportunities for the licensed surveyor and engineer.

The third event(s) they should attend is a local one, such as a GITA (Geospatial Information and Technology Association) regional chapter conference or a statewide GIS conference. These conferences represent the consumers, purchasers, and users of geospatial data, and present many opportunities for surveyors. The more surveyors are active in these areas, the more the GIS professional is going to think about surveyors when it comes time for data accuracy improvement, map updating, and field data collection. Surveyors I know who have done this have contributed to the growth of their businesses substantially.



Discussing online applications that integrate surveying and GIS with ESRI's Ray Carnes and Donny Sosa

**PSM: Professional Surveyor Magazine has begun a regular column, "Intersect," written jointly by a surveyor and a GIS professional employed with the same firm (see pages 38-39). Does that strike you as a positive thing? Are we on the right track?**

This is an incredibly positive thing, and you're on the right track. This firm has figured out that there is a benefit from GIS. The surveyor and GIS professional are engaged in a

PDP-11 come to mind. As this column matures and more surveyors embrace GIS technology, you will have the surveyor "under the hood" of the GIS and discussing the technical details of how the measurements and other data are handled in the database.

**PSM: What are the three most significant events for surveyors involving GIS in 2006?**

The two conferences that every surveyor should attend are the

**PSM: ESRI's Survey and GIS Summit is growing increasingly popular. Would you give our readers an idea of what to expect in 2006, and why they and their colleagues need to be there?**

This is one of the most exciting parts of my new position. The Survey and GIS Summit is an incredible opportunity to bring the surveying and GIS community together. The Summit includes two days of the ESRI International User Conference, the largest gathering of GIS professionals in the world, and Summit attendees have full access to all of the programming. This gives the attending surveyor an opportunity to explore many new areas.

Surveyors provide a substantial amount of data to civil engineers for the design of civil works, and many civil engineering firms have their own surveyors. So to be sure that this area was addressed, civil engineering programming was added to the summit last year. We will continue to expand that in 2006 with some presentations on new engineering design software from our business partners.

We are developing conference programming for the surveyor at the entry level of GIS, kind of a "GIS 101 for Surveyors and Engineers." This is a result of requests from past attendees. Many surveyors see the opportunities to expand their services, but would like an introduction to GIS customized specifically for surveyors. We are responding to those requests.

Probably the most important programming we are developing for this year's Summit is on the business side of GIS. For surveyors to get interested in GIS they need to see the effect to their bottom line. We have user presentations lined up on how surveyors' internal operations can benefit from GIS. We will have surveyors presenting to surveyors how they have benefited from internal implementations of GIS technology. Equally important, presentations will cover the new services that surveyors can offer with their existing equipment and personnel. Surveyors play a key role in data updating and the improvement of GIS data accuracy and we will help them get started.

**PSM: We understand the educational component of the Summit is evolving. Would you elaborate?**

The Summit has always focused on educating surveyors and engineers on GIS technology with the best programming available. Last year, many surveyors and engineers requested PDH/CEU credits for this conference and we were able to provide the necessary information they needed. This year we are highlighting the PDH/CEU availability ahead of time so if someone is interested, we can accommodate them. It's just one more reason to attend.

In addition to our new "GIS 101 for Surveyors and Engineers" track, we will have our business partners present the new solutions that they have developed integrating their offering with our technology. This will help surveyors leverage their existing investments while expanding their capabilities. You should expect to see our business partners Trimble, Topcon, Leica, and Safe Software, among others in San Diego in August.

**PSM: The average age of the traditional surveyor in the United States is late forties to early fifties. How does this demographic affect the GIS business for surveyors in the coming decade?**

Good question. There are a couple of parallel issues here that are worth discussing. Most small and medium

sized surveying companies are owned and operated by one or more of these surveyors. I don't dare use term "aging," but at some point these surveyors will want to sell their companies and retire. At the same time, the surveying industry is not attracting as many new young professionals as some of the other related geospatial

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technology areas. Many college and university programs recognized this some years ago. Surveying Engineering at the University of Maine is now named "Spatial Information Science and Engineering," partially as a result of the difficulty of attracting high school seniors to a program that didn't sound modern.

GIS can help here in a number of ways. First, it can help a surveying business attract young employees. GIS offers some exciting technology and opportunities for the computer savvy generation. GIS services coupled with traditional services is more appealing to the younger generation than the traditional view of "peg bashers" that surveyors suffer. The U.S. Department of Labor views Geospatial Technology as one of a dozen or so job growth areas for the next decade, right beside Nanotechnology and Biotechnology. In fact, GITA recently received a substantial grant from the department and a portion of this grant is dedicated to the education of this upcoming generation about careers and opportunities in geospatial technology.

GIS can also help the principles in a surveying company organize and centralize their geospatial data that has been collected so it can be easily accessed and its value understood. It's difficult for many people to recognize the value of a bunch of old survey plans, field books and CAD files. But if the measurement data used to create these plans were stored in a central database along with other data collected to develop the plans and maps, its value is more apparent because this data can be readily reused efficiently. Much of the value in a surveying company is in the data which is best stored in GIS, not on a map, or in a CAD file, or in a cabinet.

### **PSM: Can you explain EDN (ESRI Development Network)? How can it benefit surveyors in their work?**

Another good question. EDN is a new program from ESRI which offers software developers a cost-effective opportunity to develop on core ESRI

technology. This is important to surveyors because we anticipate many more surveying and engineering software companies will develop their software on ESRI technology. This is a great opportunity for surveying software companies to increase their reach, and for surveyors to use GIS with tools that they are currently familiar with. For many years, CAD was the only option for software companies supporting the surveying industry for the development of specialty applications. With EDN, opportunities are opened up for surveying and engineering software development on GIS as well.

The first ESRI Developer Summit is March 17-18 just prior to the ESRI Business Partner Conference on March 19-21 in Palm Springs, California. We will be discussing with our partners the opportunities that the surveying industry offers. Software companies interested in the surveying market should attend the EDN.

### **PSM: What will you do differently than what's been done in the past to bridge the gap between GIS and surveyors?**

First, we are going to expand on all the good work that's been done previously. There is now a dialogue between surveyors and GIS professionals at the Survey and GIS Summit and we will continue to grow this conference to address the existing and arising challenges of bridging the gap. As previously mentioned, we are working to show surveyors the business opportunities in GIS. We believe once they see and understand the magnitude of the opportunity, the gap will naturally narrow as their participation in the GIS community expands.

We have a plan to work with ESRI's regional office network to assist surveyors and engineers with their entry into GIS, and to support them as they grow. As you know, surveyors generally work on a local level and there are local issues that are best addressed regionally. Our regional offices are equipped to help out here.

Another area where we plan to make strides is to continue to bring professional organizations together. ACSM has been a supporter of the Survey and GIS Summit from its inception. URISA has supported us as well. This year GITA will participate in the Summit. With ACSM, representing surveyors, and GITA, representing the broad geospatial community; we are forging new relationships and building new opportunities for surveyors, engineers, and the GIS community. Look for this trend to continue.

As GIS is used for more and more critical functions, the demand for more accurate geospatial data will continue to increase. We will work to educate our GIS community of the value that surveyors can bring for data accuracy improvement, updating, and other areas. Concurrently we will work with surveyors to uncover new opportunities for them. In the future, we hope the tag line for the Summit to be "Surveying and GIS, Working Together."

### **PSM: Brent, thanks so much for your time. Is there anything that you would like to add as we close this interview?**

Neil, I'd like to again thank you for the opportunity to communicate with the surveying community and I look forward to working with you in the future.

For us to close the gap between surveyors and GIS professionals, I think it is important for the practicing surveyor to be active in the broad geospatial community, not just the surveying community. There are a lot of regional user group meetings, trade associations, vendor hosted meetings, conferences, and workshops where surveyors can participate. Many of these associations are hosting conferences together. If you are a surveyor and are active in a local surveying organization, consider working together with a GIS organization to combine resources for a joint event or meeting. This will help narrow and eventually close the gap. ▽

NEIL SANDLER is publisher of the magazine.