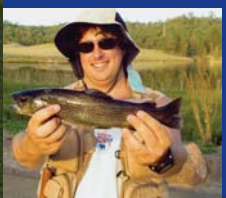


SURVEYOR

California

The Sacramento - San Joaquin Delta



Delta *LiDAR*

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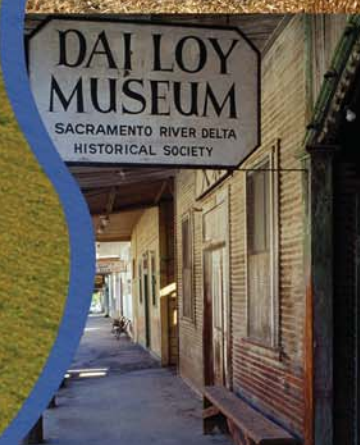
Delta Photography

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Surveying Delta Levees

Article by Nathan J. Hershey, PE, PLS, page 20



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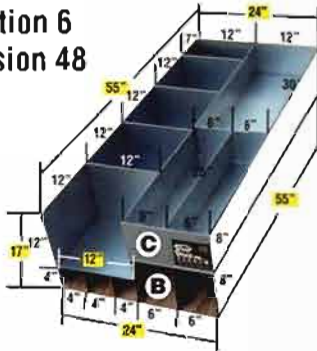
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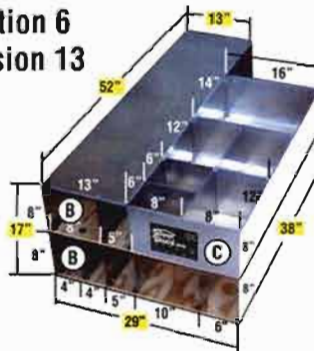
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"Recognizing that the true merit of a profession is determined by the value of its services to society, the California Land Surveyors Association does hereby dedicate itself to the promotion and protection of the profession of land surveying as a social and economic influence vital to the welfare of society, community, and state."

"The purpose of this organization is to promote the common good and welfare of its members in their activities in the profession of land surveying, to promote and maintain the highest possible standards of professional ethics and practices, to promote professional uniformity, to promote public faith and dependence in Land Surveyors and their work."

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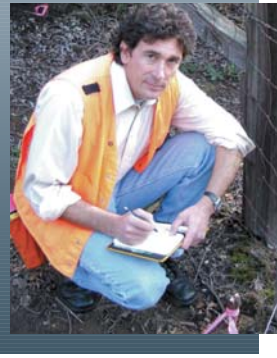
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Delta Photography by Cal. Department of Water Resources



From the Editor

We did it again! For the second year in a row the *California Surveyor* received an “Excellence in Professional Journalism” award from the National Society of Professional Surveyors (NSPS). This time CLSA also received the top prize “Best in Show” at the annual NSPS conference in Salt Lake City. This award represents recognition for our magazine at the national level. What an honor it is for me to be among the many people whose hard work made this possible. Thanks again to the award-winning administrative support provided by our Central Office (and Crissy Willson in particular). Thanks again to the award-winning graphic artistry of Tony Monaco, and the reliable eye of our assistant editor, Dave Ryan. And thanks again to our contributing writers for providing award-winning content that is useful and relevant to California’s Professional Land Surveyors.

The Sacramento – San Joaquin Delta

In this issue of the *California Surveyor* we focus on the Sacramento – San Joaquin Delta, a place worth getting to know. Roughly bounded by the triangle formed by Sacramento, Stockton, and Tracy, the Delta is a watery land of farms, dikes, sloughs and flooded islands. Unlike famous destinations like Disneyland or Yosemite, the Delta is unfamiliar ground for many Californians. Yet its importance to our state’s people and wildlife can hardly be underestimated. One way or another, if you live in California your life is being touched by it whether you realize it or not. If you are like more than half of California’s population, you rely on water that passes through the Delta on its way to your faucet. That is because the Delta is an integral component of California’s water distribution system. Massive pumps inject its water into the South Bay Aqueduct, California Aqueduct, and Delta-Mendota Canal for domestic and agricultural use in the bay area, central valley, and southern California. No matter where you live in this state, the Delta’s crops, or crops irrigated with its water, are likely to find their way to your table. This immensely fertile area produces more than 90 different crops and accounts for more than 650 million dollars of California’s economy annually.

Useful as it is to people, the Delta has another, much older role. It is the largest estuary on the west coast of the Americas. It is the interface between the salt water of the Pacific and the fresh water of rivers that drain a watershed covering 27 percent of the state. This unique environment is home to native species, both animal and plant, that are struggling to survive in the 21st century. The Delta smelt may receive little sympathy from some, but if you

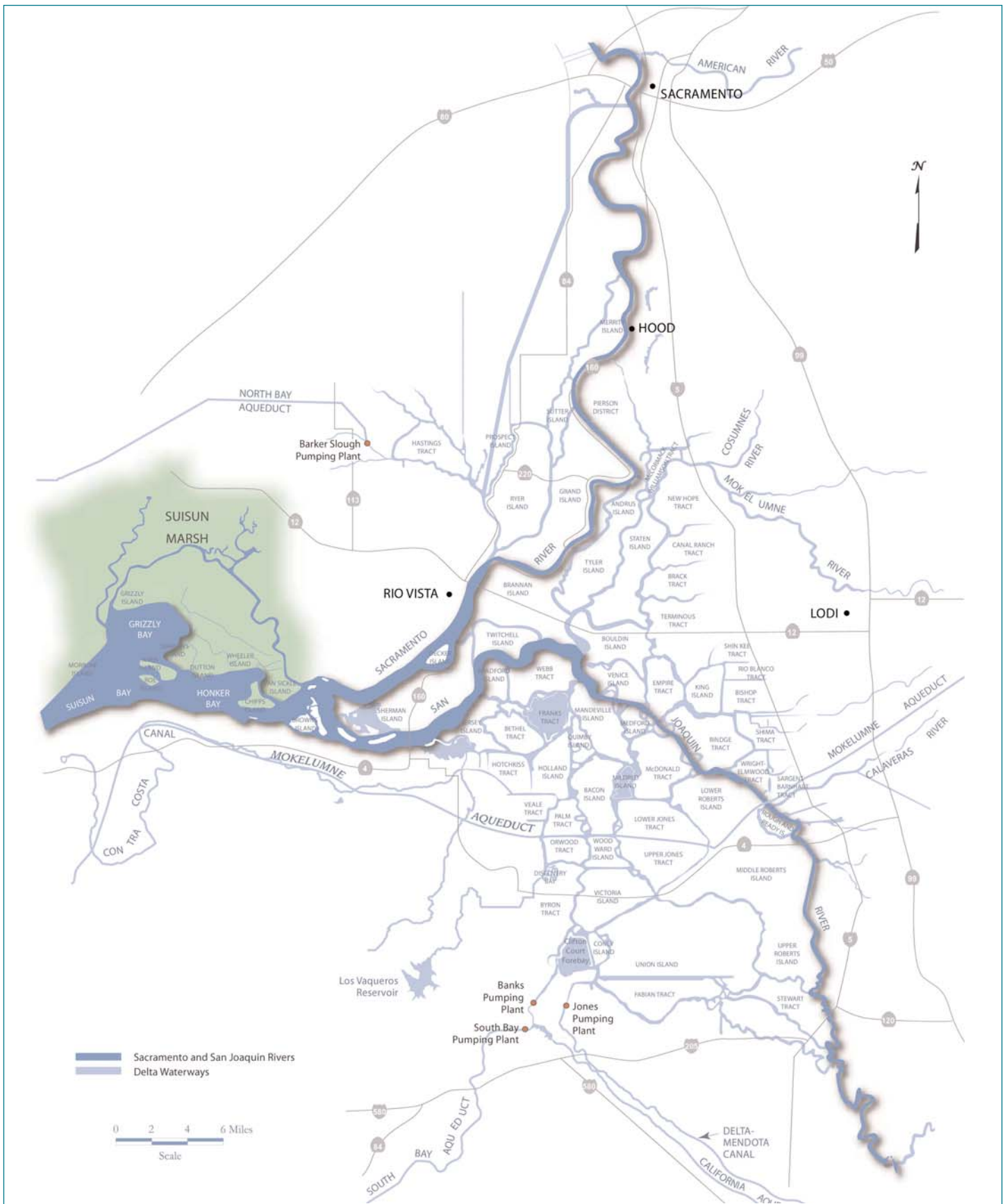
like salmon consider a world without it. Recent interruptions in water exports are a reminder that Delta water is a finite commodity that must be shared with wildlife and managed wisely.

However, it is not only fish that are in trouble. People are at risk in the Delta too, and the biggest risk of all is failure of the fragile levee system. Delta islands have subsided so deeply that their interiors are well below sea level. All that saves them from flooding are earthen levees, most of which were built many years ago upon weak peat soils. Today the levees are in perpetual need of rehabilitation. Earth fill is used to raise levee crowns above flood elevations. The added weight of the fill causes the levees to sink into the underlying peat. Eventually the crowns again need to be raised, and on it goes. Add in the potential for earthquakes and sea level rise and the threat of widespread flooding is indisputable.

You would think that would be enough to curb urbanization of the Delta but it is not. Residential and commercial development continues and much of it is on land that is below sea level. People in the levee business say there are two kinds of levees: those that have failed and those that will. Land use decisions that put profit above common sense and public safety will burden us all in the long run.

California policy makers are today making decisions to strike a balance between maintaining a reliable water supply and preserving the Delta’s ecosystem. The good news for us in the technical community, particularly for those of us who are familiar with the Delta, is that no matter what policy makers decide, our skills will be needed. The bad news is that these decisions will not be painless, nor will they be cheap to implement. Governor Schwarzenegger’s Delta Vision Blue Ribbon Task Force says this: “Over the next few decades, billions of dollars will likely be spent to improve the estuary’s ecosystem and levees, as well as California’s water systems”. No matter where you live in California, even if you do not drink Delta water or eat Delta crops, if you pay taxes in this state your dollars will be among the billions spent. One way or another your life will be touched by the Delta. It is a place worth getting to know. ❖

John Wilusz, PLS, PE is a Water Resources Engineer in the Delta-Suisun Marsh Office of the California Department of Water Resources.



Map of the Sacramento – San Joaquin Delta
 Source: California Department of Water Resources



President's Message

Land Surveyors have a deep and rich history in the development of the world, and more recently, our Country. From explorers of the new world, to Presidents of the United States, Land Surveyors contributions range from small to great, each helping to shape the fabric of the society we live in today. In the past several years, serving on the Executive Committee of the California Land Surveyors Association (CLSA), I have been amazed at the success of this organization and the contributions it makes to California and the surveying profession. As President of CLSA this year, I intend to build upon the efforts of those who have preceded me. It has been a long time since we have experienced the challenges we are currently facing, some of which we have never faced before. With the hard work of this organization and all the individuals who support us, together we will face these challenges.

California is currently experiencing one of, if not the deepest, recessions since the great depression that began in 1929. This recession follows one of the longest running periods of growth and prosperity our profession has ever experienced. We went from boom to bust in a matter of months. Likewise, we went from focusing on how to attract more people into our surveying profession, to attracting federal stimulus dollars to fund projects, finding new markets to use our services, and educating clients, the public and emerging industries on how we can assist them. Our industry has shifted from "how do we get all this work done," to "how do we keep our profession working." Many have been caught off-guard by the change in the business landscape. Businesses that have largely serviced the land development, homebuilders or pure construction sectors have been severely affected. Public agencies and firms with a broad diversity of clients and services have been affected by the downturn as well. These agencies and businesses have been further hampered by budget deficits and the difficulties enacting a responsible State budget. The large majority of our profession has never experienced this kind of economic condition or found the need to actively market their business and sell their talents. This industry has always experienced the cyclical trends of the economy, however, deep downturns can have far reaching effects on our business. Those of us who have experienced deep recession in the past may remember the one that occurred in the late 1980's and continued into the first couple of years of the 1990's. During that period

many Land Surveyors either left the State or got out of the industry all together. The exodus from the business left a huge gap in the stream of professional and sub-professional Land Surveyors that our industry has never recovered from.

CLSA is shifting our focus in-step with these changing trends. We are following up on the success of our recruitment program with a public awareness program. The vision of the public awareness program is to provide our members with the tools they need to enhance their visibility, educate the public, expand our role and strengthen the image of surveying. It is unfortunate that many people do not know what a Land Surveyor does or understand the value of the services we provide to society. We are so much more diverse and need to change the traditional image of the person in the middle of the street with the orange vest taking pictures. Beyond the general public, we are misunderstood and under-valued by industry professionals who use our services regularly, such as realtors, attorneys, developers, contractors and government agencies. Furthermore, I believe there are untapped markets and emerging industries developing that need our services. Opportunities are being created from these volatile economic conditions, advancing technologies, and changing environmental attitudes and policies. These are the targets of this campaign and these are the people that need and want to be educated. We have learned from the success of our recruitment program and witnessed the success of other industry efforts in raising public awareness. It is our responsibility to assist the profession by providing the tools to create opportunity for our industry and enhance the image of surveying. This program can build on our past experience and call on other industries to help us reach our goals.

The public awareness program is one of many programs we are pursuing or are continuing to pursue throughout the coming year. It is my sincere desire that you will make it our common goal and do your part to contribute to the success of these programs, to CLSA and our profession. ❖



Kids Korner

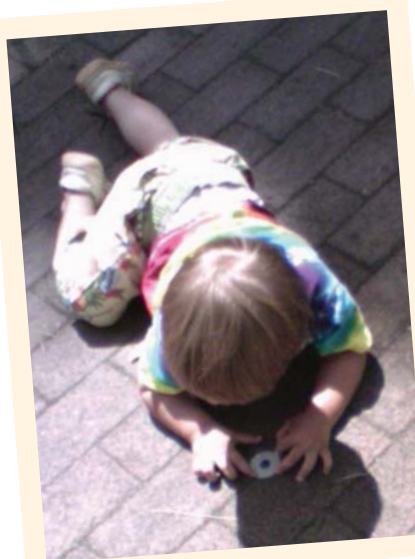
Do you have a picture of a "junior surveyor" in your family that you would like to share? Send it in and we will put it in the Kids Korner.



Julia and her father, John Jahanpour-Burke, PLS

Orange rays bounce off his vest,
 From the reflective strip that runs around his chest.
 Bright cones are by his side,
 Telling cars to slowly drive.
 He looks into his instrument while his partner's by a fence,
 And he marks down the data as the heat becomes intense.
 Three hours later he finishes and a smile spreads across his face,
 He is the BEST surveyor in the world and he works at a very perfect pace.
 I am proud to be called his daughter,
 And I'm glad that he's my father. :)

By: Julia Jahanpour-Burke (age 13)



Carlo Maguire, grandson of Mary Maguire, LSIT, just as enamored with survey markers as his grandmother is, in Santa Barbara, CA.



Amanda Niccum, granddaughter of Mericio C. Ortega, CLSA Associate, learning how to operate the total station at grandpa's home in Burbank, CA.


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Delta LiDAR

The levees of the Sacramento-San Joaquin Delta continuously protect farming communities and critical local/State infrastructure against ever-present flood threats. Like levees everywhere, the levees must hold back runoff floodwaters produced by large rainfall events. However, the Delta is a tidal estuary, and much of the land behind Delta levees is below sea level (in some places

“Whether individual levees fail or not is often a matter of inches”

more than thirty feet below) due to more than a century of subsidence of drained organic soils. Consequently, the Delta levees are constantly holding back water, 365 days a year, and not just during major storms. As it happens, the hydrodynamics are such that whether individual levees fail or not is often a matter of inches. Since reclamation began in the late 19th century, levee breaches have occurred more than 150 times, with ever-growing consequences as more is invested in and dependent upon the Delta.

In addition, there are numerous faults in and around the Delta and San Francisco Bay area, some of which are capable of producing major earthquakes. Although Delta levees in their current configuration have not been subject to a major seismic event, the risk to the Delta levees from seismic failure may be quite extreme. The base construction foundations of the levee system are often peat and loose sands. Also, the levees are now much taller due to all of the subsidence that has occurred since the last major earthquake in the region (the 1906 San Francisco event) that is presumed to be capable of damaging levees today. Some engineers and geologists predict that a major earthquake could result in widespread levee failures, resulting in flooding throughout most of the Delta. Such an event would be catastrophic for the locals, due to loss of critical infrastructure, to the fragile Delta ecosystems, and for the State as a whole due to the potential to shut down water supply exports for up to two years. The possibility even exists that the Delta may actually be unrecoverable subsequent to a major earthquake.

So it can safely be said that the Delta levees face a wider variety of risks than is found in most levee systems. But the Delta is a unique and interesting estuary for another critical reason. The flood control levees of the Delta double as a major water supply conveyance system. As conveyance systems go, it is a particularly important one, serving local agricultural communities, agriculture in the hugely productive lands south of the Delta such as the San Joaquin Valley, and more than 23 million people living in urban areas throughout California. The Delta levees are therefore a crucial infrastructure component of the entire State economy.

Delta Risk Assessment

After a summertime Delta levee failure in 2004, Hurricane Katrina on the Gulf Coast, and then a major storm event in California during the 2005-06 New Year's Eve weekend that seriously threatened much of the Central Valley, Governor Arnold Schwarzenegger began loudly calling for a major expansion of public investment in flood control. California voters later approved several billion dollars in bonds for that purpose. Several hundred million dollars were directed toward the Delta. However, due to the size and scope of the needed fixes, the funds are insufficient. It is not enough to fix all of the levees from typical flooding, and will do almost nothing to protect the levees from the seismic threat. Therefore, since the funds need to be used only where they will have the greatest benefit, then, the California Department of Water Resources (DWR) undertook a comprehensive risk assessment study to assess risk levels, consequences of failures, and risk mitigation. The study results are supporting comparative decision-making for how and where to fund projects. Engineers are devising new levee designs to implement construction projects efficiently. Establishment of high-accuracy baselines for the geometric assessment of the levee system and for high-resolution subsidence monitoring is now occurring. The baselines will be compared against future studies to objectively assess bond funding progress towards meeting improvement and mitigation requirements.

Continued on next page

Elevation Surveys Crucial

For all of this technical work, elevation surveys are a crucial data requirement. But in the Delta, accurate survey data is not something that can be taken for granted. With respect to elevation, the Delta is one of the more dynamic non-volcanic areas on Earth. When levee construction projects have placed a foot of fill to raise a levee, it is not at all unusual for that levee (built on peat soils) to have settled back to the original elevation within a couple of years. As mentioned previously, subsidence of up to thirty feet in the last century is an ongoing problem. Plus, in some places half of a foot is the difference between a typical mean high water stage and a 100-year flood stage, and levee free-board is frequently less than a foot above the 100-year stage. Data accuracy needs are, therefore, on the order of inches, not feet. So for objective, comparative analysis, a single snapshot of high-accuracy data that covers the entire Delta is the requirement.

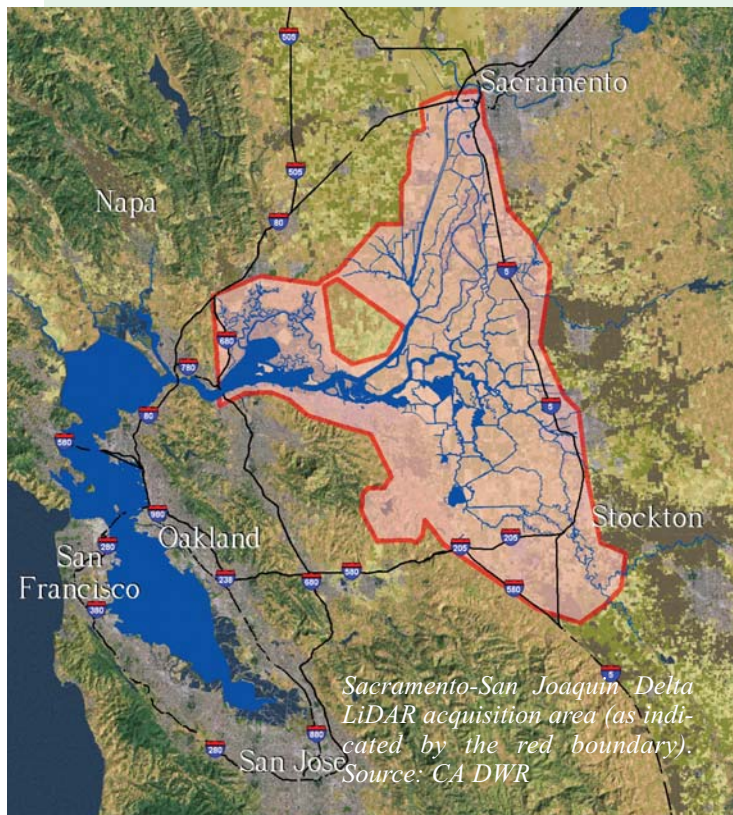
Unfortunately, in the face of that need, the Delta suffered from the lack of anything like a comprehensive, high-accuracy survey. Delta-wide Digital Elevation Model (DEM) surfaces included the USGS National Elevation Dataset and a couple of Interferometric Synthetic Aperture Radar (IFSAR) surveys, but these sources not only lacked the high-accuracy needed for hydrodynamic simulations, but in general characterized the levee system very poorly. As for field surveys, the situation was a hodgepodge. Between various public agencies and local flood districts, some areas had been surveyed very well, but many areas were not. Even the well-surveyed areas were from many vin-

tages, and were often obsolete. In some cases, levees had not been surveyed at all since the 1980s. An adjacent area of concern, the Suisun Marsh (just west of the Delta, it is the largest brackish marsh on the U.S. west coast), the data situation was even worse. There, the data that would be needed was almost completely absent.

LiDAR the Solution

After passage of the flood project bonds, it quickly became clear that a solution to the elevation data problem was needed. Since the area is several hundred thousand acres in size, the costs were potentially quite large. After reviewing the available options, DWR decided to go with a LiDAR acquisition. LiDAR was chosen because it offered the best combination of accuracy and cost-effectiveness for such a large area. Under the right circumstances, with the right equipment, and maybe some good luck thrown in, LiDAR can produce raw data that supports development of 1-foot contours. For the project, DWR utilized the risk assessment contract with URS Corporation, who awarded the production work to Fugro-EarthData, and a separate independent QA/QC aspect to Spectrum Mapping. Fugro-EarthData in turn hired Airborne 1 Corporation to conduct the aerial survey work, before handoff back to Fugro-EarthData for post-processing and delivery.

In order to achieve the contract specifications, the project plan was tailored specifically for the ground conditions of the Delta. DWR's past experience and observation of other LiDAR projects is, that it would not be feasible to expect that points could be collected of sufficient accuracy to generate 1-foot contours if any significant amount of vegetation was present during the survey flight. In the Delta, trees begin leafing out, field weeds sprout, and the widespread agriculture gets going in March, and so March 7 was the date at which the allowable flight acquisition window was closed. As we later suspected, and then re-demonstrated, this is a particularly critical part of any LiDAR project specification, indeed, probably the most important variable that a client can request to ensure the reliability of the entire survey. While LiDAR



LiDAR system installed in the belly of a Cessna.

Continued on next page

Delta LiDAR

Continued from previous page

cannot produce contours of the required accuracy in densely vegetated areas, flying during leaf-off conditions can greatly expand the amount of the project footprint that does meet specification.

Other aspects of the project specifications and work plan were utilized to improve the deliverable quality. Since the edges of scan swaths produce the greatest vertical error, the allowable maximum scan angle was halved. Using half of the normal maximum scan angle slightly compromised vegetation penetration and increased the flight costs by requiring more flight lines. But DWR felt the cost trade-off was worthwhile given the project's importance, and that by flying in winter, the benefit to vegetation penetration was outweighed. In addition, USGS came to DWR's assistance by upclocking the GPS broadcast from 1 Hz to 5 Hz at the control stations during the flights, which reduced errors induced by interpolating GPS solutions from 1 Hz data.

One option DWR did not choose to utilize was the idea to try to acquire the data only at low tide. This is a method often proposed in tidal areas in order to maximize the number of laser returns that might be obtained from the intertidal levee waterside slopes. While there is no question that it would have been ideal to have done so, the costs of the acquisition would have become prohibitively expensive.

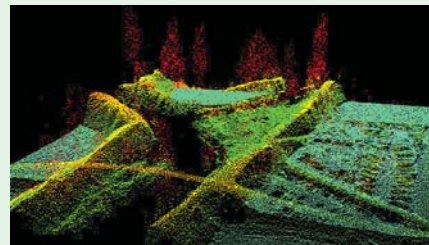
Data Collection Challenges

The first survey flights occurred in January and February of 2007. As fate would have it, this was an extremely fortuitous period in which to acquire LiDAR data. The 2006-07 winter was extremely dry to that point, unlike the very wet conditions experienced a year prior. It was also very cold. Some may remember the bad freezes that cost many Central Valley farmers their trees from that time, but as they say, one person's peril is another's promise. It also meant that the contractors acquired data during cold, stable air masses, which reduce some of the atmospheric errors. Lastly, although the Delta can be socked in with fog during much of the winter, those same cold, stable air masses kept things dry and fogless. In a little more than three weeks, acquisition of the million-acre project footprint was complete.

Unfortunately, during processing, it became evident that some areas had experienced problems. Initial fixes did not succeed, and it was decided to re-fly about 9% of the area. In order to attempt to produce the deliverables in a timely manner, initial re-flights occurred outside of the prescribed acquisition window, during June. Independent QA/QC revealed that the effect of the leaf-on conditions meant that the June data was not in compliance with the project specifications, and another flight was needed. The area was flown yet again in the very beginning of March, 2008, just before leaf-on again began to develop.

Interim Products Available

The data were re-delivered in Fall of 2008. A few minor issues remain with the overall dataset, including integration of the data from the original flight and the re-flight, but none of these should require any more re-flights. Final revision work, however, is currently suspended, pending ongoing issues with the State of California's financial situation. When work resumes, it is hoped that the final product will be ready within a few weeks.



A 3D view of raw, unprocessed LiDAR data. Levees, a bridge, and trees can be clearly seen. Source: CA DWR

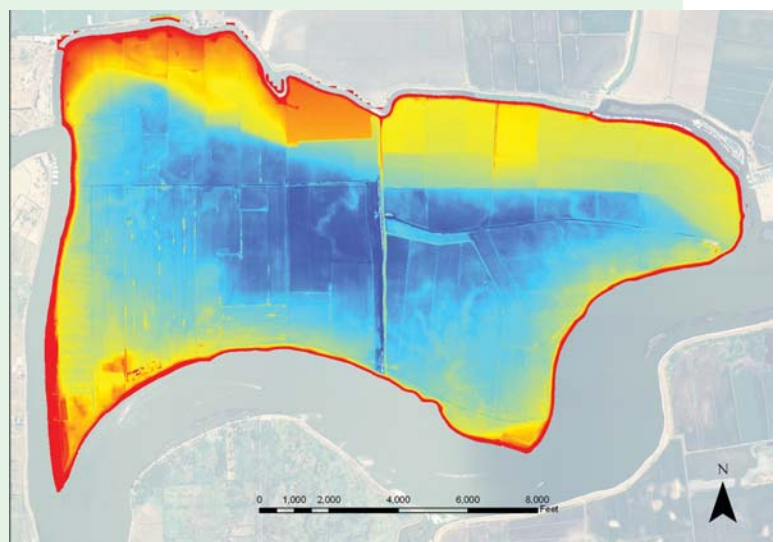
The interim products are available in the public domain currently, as will be the final product. Point data are available as raw data, bare earth products, and for first returns.

1-foot contours and processed ESRI DEM grids were also produced. Intensity imagery to assist interpretation of site ground conditions are also part of the deliverables. These data are available in a variety of digital formats to support use in various software platforms. Call DWR at 916-651-7002 for information about the data products.

Many Uses for the Data

The uses of these data are many. For DWR, our first use of the data are to support a variety of flood management data needs. Some of these were described previously, such as supporting the risk assessment project. Hydrodynamic

Example of a one-meter Digital Elevation Model (DEM) processed from raw survey data. The grid is a one-meter grid. In the figure, blues are low elevations, and browns are higher elevations. Source: CA DWR



Continued on next page

modelers are using the data to satisfy model needs for island elevations to conduct Delta island post-levee breach scenarios. The total volume of water that will fill an island in response to a flood is now more precisely known, and readily available. DWR is currently undertaking a much more technically robust assessment of the Delta levees' FEMA levee geometry standard compliance, and is also assessing costs for upgrades to certain standards for each of the Delta islands. A large, DWR-funded floodplain re-mapping effort throughout the entire Central Valley is also utilizing the Delta LiDAR data.

The data are also supporting basic site-specific project needs for topo data for a variety of levee, subsidence reversal, and ecosystem restoration projects. DWR, with NASA and USGS, are proposing fusing the LiDAR with plane-based Permanent Scatterer-InSAR techniques to develop a method for short-turnaround, high-resolution, high-accuracy Delta-wide elevation products. These would be useful for studying seasonal subsidence and subsidence reversal patterns, whether the "spongy" organic soil Delta islands float up and down with the tides, and for monitoring levee deformation during prolonged high water events. Beyond DWR, the data already have been used in many different ways by a wide variety of agencies, consulting firms, universities, and non-profits. Most prominently, the data are considered as a baseline for future subsidence and subsidence reversal assessments. Reclamation district engineers have used the data for levee project planning, and are looking at re-routing drainage features on seemingly flat Delta islands. More broadly, a multi-agency group that is looking to restore tens of thousands of acres of ecosystem is using the data to satisfy the fundamental role elevation plays in habitat planning at the regional scale. UC Davis researchers have even been trying to count each individual tree in the Delta using these data, with an eye toward modeling effects of vegetation removal from levee slopes on water temperatures.

Going forward, for GIS professionals working in the Delta it can be fairly stated that if a project or study needs a DEM, it will likely be using the Delta LiDAR data. The data in all its delivered formats are readily usable in GIS, and so support the integrative nature of GIS analysis just as well as any other data types will. It can be expected that the number of Delta maps and spatial analysis products that use these data will be somewhat abundant. That being said, it is critical to understand that these data are not perfect for every application, nor in every part of the survey area. If an area was subject to seasonal flooding during the flight (such as where duck clubs exist), it will not be satisfactory. Also – as with all LiDAR data – it should be viewed with skepticism where vegetation is dense. Once the product is finalized, extensive documentation for the project will be compiled. These documents will include supplemental surveys and accuracy statistics for eighteen different land cover types that are commonly found throughout the region. The documentation is vital to understanding when and where the data should be used, and for what they should not be used.

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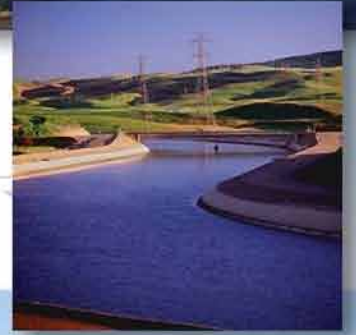
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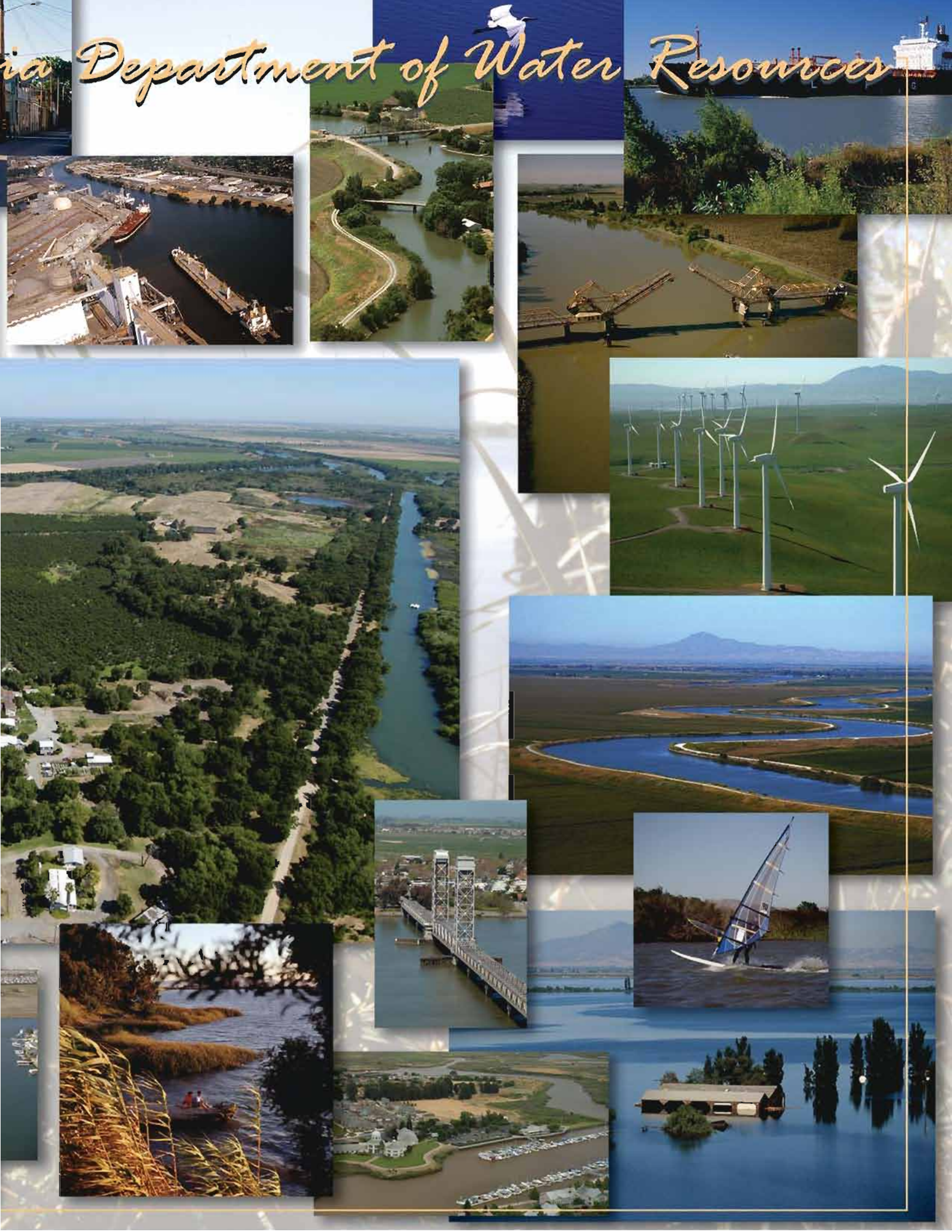
LiDAR in the Future

Looking to the future, DWR has a few ideas in mind for what and how to do more with LiDAR. In order to better standardize the products that are coming from this growing and exciting industry, DWR is currently internally researching new types of LiDAR project specifications. For cited DEM accuracy, to avoid the problems inherent in the apples-and-oranges comparisons that arise from comparing spot elevations to interpolated grid cell values, the idea is to use ground-based LiDAR to compare grids to grids. DWR is also exploring better quantitative methods of specifying bare earth artifact removal, also using ground-based LiDAR as the basis. This work is occurring in consultation with USGS and University of California experts. It is hoped that the industry and ASPRS will be receptive to some of the ideas that come from this work, and DWR intends to communicate findings to these entities. DWR also intends to resurvey the Delta on an ongoing basis. As mentioned previously, the Delta is a place of dynamic elevation. In a sense, elevation surveys in the Delta go out of date as soon as they are finished. Viewed that way, this work can be seen as either exciting or frustrating. ❖

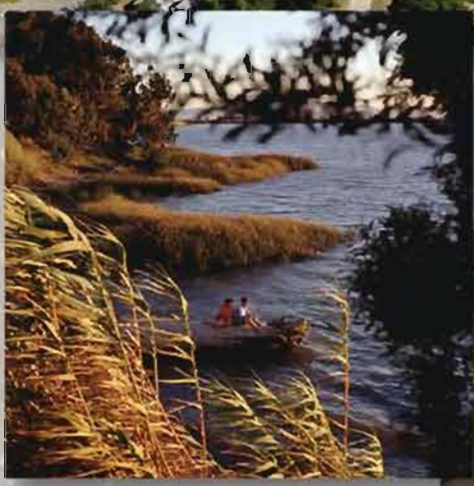
Joel Dudas is a California-licensed P.E. who works for the California Department of Water Resources. His focuses are on GIS, engineering, LiDAR, and home brewing.

Delta Photography by the Californians





ia Department of Water Resources



*Delta Photography by the
California Department
of Water Resources*





Getting Paid: Are Promissory Notes Another Empty Promise?

In these tough economic times, the construction, engineering and land surveying industries have been greatly impacted. Financing that was readily available several months ago is no longer available. Simply put, the constriction of financial lending has made it harder to get paid.

Lenders are being more scrupulous and selective in their lending, so projects are being put on hold, properties are being foreclosed, and owners and developers are going into bankruptcy. These times are particularly difficult for design professionals whose livelihoods are intertwined with this industry, the landscape of which has so drastically changed. This story may sound familiar:

You have provided professional services on a project, but the owner/developer (your client) is three months late on payment. Your client reassures you that he intends to pay you everything you are owed, but he is just waiting for some additional financing to come through. Time continues to pass without your client making any payment and your client is now six months late on payment. As your accounts receivable continue to grow from this project and other projects, you want to put additional pressure on your client to pay. You hear the same story from your client that the lending should come through any day now. However, as a showing of your client's good faith intent to pay you what is owed, your client offers to give you a promissory note for the outstanding balance owed. A promissory note sounds good to you so you cross your fingers and hope that you have just improved your position and increased your chances of getting paid, but have you?

At first glance, one would think that the promissory note has greatly increased the chance of getting paid. However, this promissory note has only forced your client to agree in writing to the outstanding amount owed under the original agreement. While this makes it more difficult for your client to later dispute the outstanding amount, the more important question in today's economy is - How has this promissory note secured payment of the outstanding debt?

In reality, it has done little to actually secure payment. In addition, this tactic may have delayed the inevitable and it may have subordinated your interests to other secured creditors of your client.

The reason that getting a promissory note from your client has done very little to secure payment is that you already have an original written agreement with your client whereby your client agreed to pay you for your services. Your client already breached this original agreement by failing to comply. At the end of the day, all you may have is another empty promise from your client to pay. You are still in a similar position with regard to securing payment as when your client breached the original agreement.

Increase Your Chances of Getting Paid

So how can you increase your chances of getting paid after your client has already breached your original agreement and is now offering to give you a promissory note? Your best option is to accept the promissory note from your client on the condition that the promissory note is secured by an asset, such as the client's real property.

While this is something that you can do after your client has already breached your agreement, there are also affirmative and preventive steps that you can take to increase your chances of getting paid even before your client has breached your agreement, especially in light of the continually changing economic climate.

You should consider these three simple tips for each new project.

- 1 Contract with the Landowner.** Design professionals often contract with an entity that does not have any ownership interest in the project land where the project is located. You will often see this in projects where you contract with one entity that is developing the project, but another entity with a similar name is the actual entity that owns the land. By contracting with the landowner, it will be easier to comply with the strict statutory lien requirements. You also increase your chances of actually being able to use the land as an asset to secure a debt.
- 2 Own your Drawings.** Design professionals often enter into contracts, sometimes unknowingly, in which they have transferred all of their rights, title, and interest, including copyrights, in their drawings to the owner. However, maintaining ownership of your drawings can be a tremendous bargaining tool when the owner wants to terminate the contract and hire another design pro-

Continued on next page

fessional to finish the work. If you maintain ownership of your drawings, then you can essentially take your drawings with you off the job. This forces the owner to either pay you what you are owed so he can continue to use your drawings or to hire and pay a new design professional to recreate all of your drawings so as not to violate your copyright in the drawings.

- 3 Negotiate and Manage your Contract.** Design professionals can better protect themselves by negotiating their contracts so that they contain more favorable provisions to increase their chances of getting paid, such as termination clauses that provide you more leeway to get out of the contract and payment clauses that do not contain any contingencies tied to payment. In addition, design professionals can better manage their contracts by tracking their accounts receivable, demanding payment from the owner, and taking more affirmative steps to collect payment, before the accounts receivable get out of control.

So in these tough economic times when you are owed money under an agreement and you are presented with a promissory note by the owner, always look to secure that

promissory note with a physical asset, such as real property. Always remember to: (1) Contract with the Landowner, (2) Own your Drawings, and (3) Negotiate and Manage your Contract. If you remember these tips, then you will not only increase your chances for getting paid, but you will also be able to identify whether that promissory note is just another empty promise or a step in the right direction.

J.V. Hogan is an attorney in the Commercial Transactions and Corporate Practice Department of Collins Collins Muir + Stewart LLP. Robert H. Stellwagen is a partner at Collins Collins Muir + Stewart LLP. If you would like more information with regard to this article, please do not hesitate to contact J.V. or Robert at (626) 243-1100. Nothing contained within this article should be considered the rendering of legal advice. Anyone that reads this article should always consult with an attorney of their choice before acting on anything contained in this or any other article on legal matters as facts and circumstances will vary from case to case.

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Surveying Delta Levees

Surveying Challenges in the Delta

The Delta began a significant transformation in 1850 when the Swamp and Overflow Land Act was passed. This legislation conveyed all swamp and overflow land from the federal government to the State of California. Subsequently, massive reclamation projects were implemented to reclaim the land. By World War I, most of the Delta's tidal marshland had been transformed into a maze of channels and islands. Perimeter levee systems protect the interior island land. The islands can be characterized as "bowl-shaped," with the interior land elevations significantly lower than the water surface in the adjacent channel. The Delta, as we know it today, is a relatively large geographic area (approximately 738,000 acres), which can be a challenge in itself. Getting from point A to point B is not always easy and can be time-consuming.



Bradford Island at the confluence of the San Joaquin River and False River. The vertical exaggeration emphasizes the bowl-shaped topography of the island. Source: CA DWR.

California's Sacramento-San Joaquin Delta is a hot topic these days. Reports of fragile levees, pelagic organism decline, and questions regarding the reliability and sustainability of the Delta as it exists dominate the headlines. The source of drinking water for 23 million Californians, the Delta is a recreational and environmental treasure. It is an important natural resource, providing habitat for a variety of plants, animals and fish. The fertile fields and optimal growing environment produce food for not only Californians, but also people nationwide.

The Delta is a place where many engineering disciplines converge, and surveying plays a crucial role every step of the way. Surveyors, civil engineers, geotechnical engineers, water resources engineers, environmental consultants and attorneys all work together in the planning, construction and rehabilitation of the levee system and various habitat projects. An understanding of the system enables the surveyor to provide reliable, accurate data that ultimately is the foundation on which policy is based.

Some Delta islands are only accessible by boat or ferry, requiring advance planning prior to performing field work (don't forget to charge the batteries!). Many roads are two lane "country" roads, not known for being smooth.

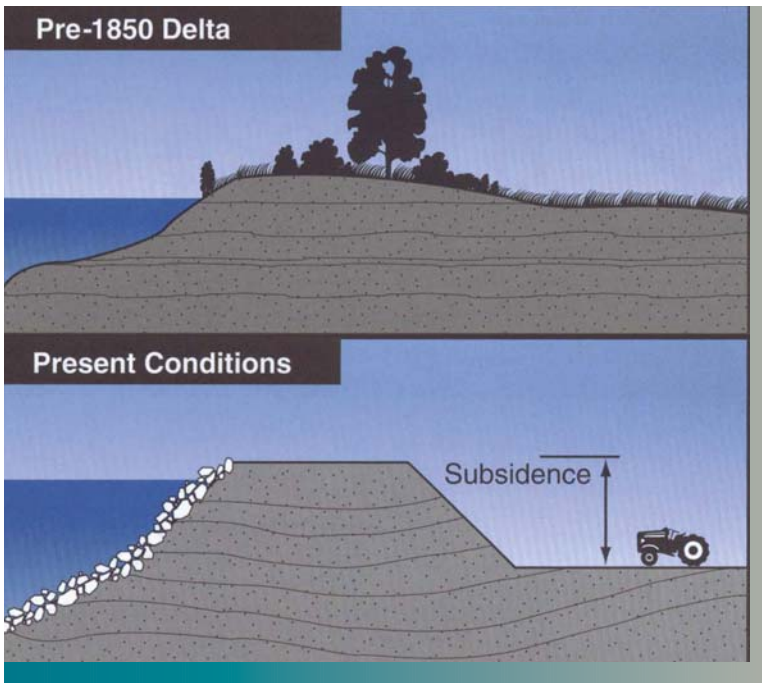
Depending on the site location, multiple drawbridges may be crossed while traveling. Field conditions can also be a factor, as 30 mph winds are consistently present.

"The Delta is a place where many engineering disciplines converge".

Subsidence

Subsidence is an issue the surveyor must be acutely aware of when surveying in the Delta. A large portion of the underlying materials in the Delta are marsh deposits, or peat. As the Delta is farmed, the farming activities cause the peat to oxidize, and the result is subsidence. Depending on the location, subsidence can decrease the stability and reliability of benchmarks. Subsidence has occurred throughout the Delta over the last century, at rates

Continued on next page



of up to one inch per year. Most of the interior elevations of Delta islands are below sea level, with elevations as low as -30 feet.

Multiple Vertical Datums

Complicating matters, multiple vertical datums have been historically used throughout the region. Although the industry is migrating toward using the North American Vertical Datum of 1988 (NAVD 88), the hydraulic models in use in the Delta were originally created using the National Geodetic Vertical Datum of 1929 (NGVD 29). NGVD 29 elevations are essential when comparing topographic and bathymetric data to the modeled water surface elevations. A conversion from one datum to the other is required to ensure that apples are being compared to apples. A collection of historic benchmark data can be a key resource when a conversion from one datum to the other is required.

Converting between NGVD 29 and NAVD 88 can be a real challenge for surveyors in the Delta. The most accurate method of converting between the two datums is to perform field measurements on historic benchmarks that have known NGVD 29 elevations. Conversion models such as VERTCON should be used with care, as they do not account for subsidence. Each conversion should be performed on a case by case basis, evaluating historical and current data to compute the appropriate conversion factor. Sources of data include the National Geodetic Survey (NGS), the California Department of Water Resources, the local county surveyor, and other agencies that may have

infrastructure in the project's vicinity. The surveyor must perform due diligence in benchmark research. Because of subsidence, benchmarks that have not been recently observed have a higher probability of having an inaccurate published elevation. Many agencies recommend re-observing the benchmarks being used and not taking the published elevation as gospel.

Levee Mapping and Maintenance

Most Delta levees are under the jurisdiction of a reclamation district, which is the local agency responsible for maintenance and rehabilitation projects. Most districts have produced a district map and have assigned stationing to the levee's horizontal alignment. These maps are essential for communication between district personnel and provide a framework for planning projects and responding to emergencies. Stationing typically begins at a unique feature, such as a bridge, an access road or a gate. Stationing can proceed either clockwise or counter-clockwise around the district.

Maintenance is the core of a successful levee program. Maintenance can include mowing and other measures of vegetation control, as well as keeping an all weather surface on the crown of the levee and suitable armor on the waterside slope. A well-maintained levee enables access, which is crucial to emergency response. Maintenance also enables inspection and potential problems to be spotted, such as beaver dens or boils (places where water bubbles up on the landside).



Webb Tract. Courtesy of MBK Engineers

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Surveying Delta Levees

Levee Design Standards

As mentioned above, the surveyor must collaborate with many other disciplines as projects progress. A working knowledge of the design standards in use is essential. A variety of design standards are in use throughout the Delta, depending on whether the levee is in an urban environment or if it is classified as an agricultural levee. Most of the standards in use were developed by either the United States Army Corps of Engineers or the Federal Emergency Management Agency (FEMA), and have been implemented or adopted by state and local agencies. The majority of the Delta's levees are agricultural levees. Most minimum standards incorporate a 16 feet wide minimum crown width and a 3:1 (horizontal:vertical) landside slope. The minimum slope on the waterside is typically 2:1. Most designs are based upon the 100 year flood elevation, and provide between one and three feet of freeboard depending upon the application. Typically, site specific conditions are evaluated by a geotechnical engineer, including the soils that comprise the levee and underlying material, the existing geometry of the embankment, wind and wave run-up, and other conditions that influence a levee's performance. Once the necessary analysis has been performed, a design is prepared by a geotechnical engineer. The recommended design may modify the geometry of the section based on the existing soil conditions and to increase stability.

Levee Construction

In addition to the traditional surveying issues involved in a construction project, sometimes issues arise that are unique to Delta projects that may involve the surveyor. The Delta's levees were originally constructed by farmers that used whatever material was available at the time. In many cases, organic material, debris, and even trash were placed in the levee and buried. In some cases, structures used for farming purposes were abandoned and subsequently fill was placed over the structure. Many times the fill placed was not adequately compacted. These factors can result in voids that can lead to seepage and possibly a breach. In the past century, over 160 breaches have occurred in the Delta.



Abandoned fuel tank found and removed during levee rehabilitation.

Engineers are continually trying to locate and remove anomalies in an effort to avoid a potential catastrophe. Excavating trenches in the levee crown, known as exploratory trenching, can expose buried

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encroachments so they can be removed. Exploratory trenching also can expose unsuitable material. The material can be removed, and the trench can be backfilled and compacted with new fill material, disrupting potential seepage paths.

Placing too much fill while constructing the levee embankment can fail the underlying foundation material. Limiting the depth of fill can be achieved through the use of fill markers. It is critical for the surveyor to be involved throughout construction to monitor the stability of the levee, especially when fill is placed over virgin peat. Settlement is common during levee rehabilitation, in some cases exceeding one foot. However, the settlement must be closely monitored. Rapid consolidation leading to failure can occur, in some cases causing adjacent ground to move laterally or actually rise. When this situation occurs, fill placement is typically halted. The area in question is monitored for a period of time as the material stabilizes, usually at a minimum six months. Monitoring elevations in the



Fill markers are used to control thickness of lifts during construction.

immediate vicinity during construction can assist in preventing failures before they occur. The surveyor plays an important role throughout this process.

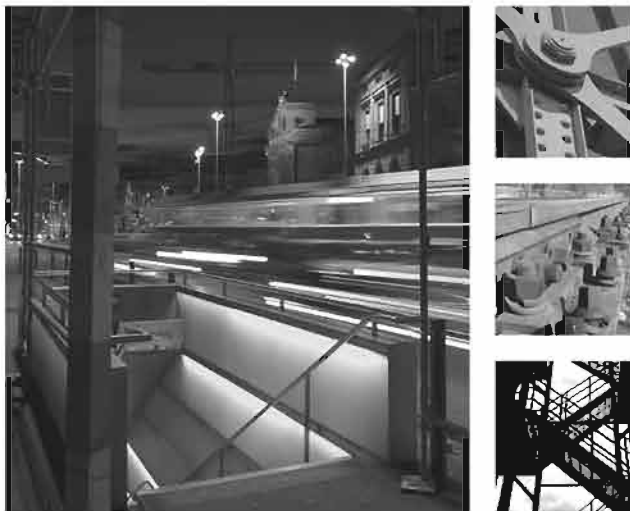
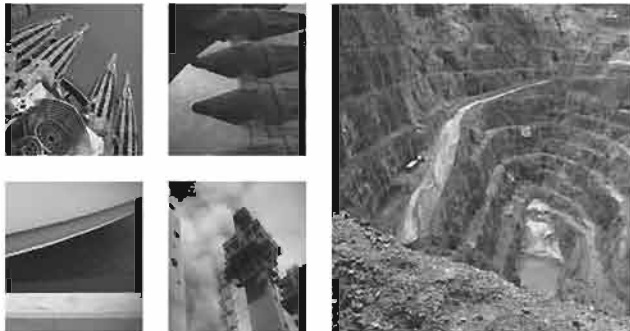
Technological Advances

The use of GPS and LiDAR has revolutionized data acquisition. These technologies have enabled a mind-boggling amount of highly accurate data to be collected throughout the region. Real time kinematic (RTK) reference networks have made the surveyor's job easier than ever. However, the total station and level still have their place in the surveyor's arsenal. Even with all the new technology available, the basic principles and practices of surveying are still essential and must never be forgotten. That being said, with all the activity occurring throughout the Delta, it is an exciting time to be a surveyor. ❖

Nathan Hershey, PE, PLS is a Supervising Engineer with MBK Engineers, a water resources consulting firm based in Sacramento, CA.



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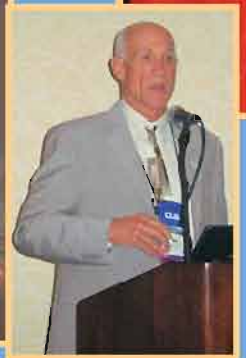
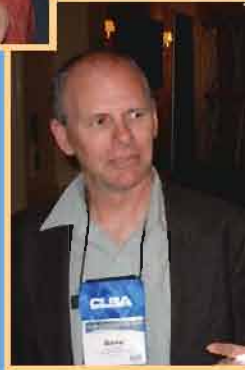
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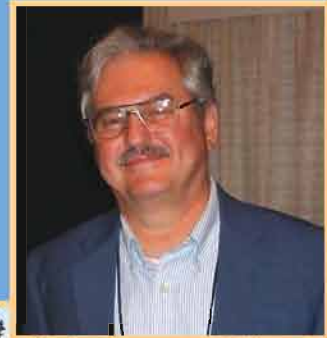
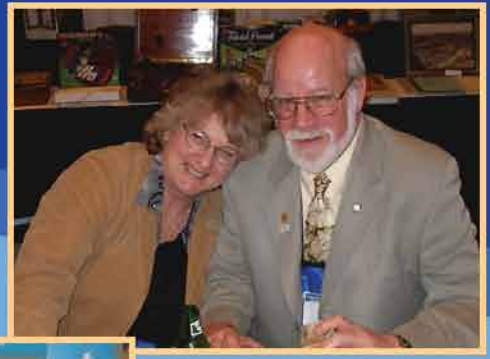
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CLSA CONFERENCE 2009

March 28 - April 1

Highlights





CLSA Conference Wrap-Up

The 2009 CLSA Conference at the Hilton San Diego Resort (Mission Bay) was held March 28 thru April 1 and as usual was an affair not to miss! The hotel and conference center, situated on the back side of Mission Bay, provided a beautiful and comfortable backdrop for what has become an annual success story. This year attendees could follow several different tracks including: technical courses, business courses, LS exam review and LSIT exam review, all presented by able and committed instructors. A quick look at the numbers: the attendance at the four-day event was over 300, there were twenty-five vendors in the exhibitor's hall and over \$12,000 was raised at the scholarship auctions, (both live and silent). There were over 24 workshops, classes and panel discussions presented during the 4 days. Conference committee chairs Dorothy Calegari and Tom Taylor are to be commended for an outstanding job, (as we lucky California Surveyors have come to expect).

The conference was preceded by a separate full day Subdivision Map Act review workshop hosted by Mike Durkee, Esq. on Saturday. This class is the most comprehensive review of the subject material available and dovetails well with the conference. Frankly, if working with the SMA is your bag, this workshop should have been reason enough to consider coming to San Diego.

The opening ceremonies kicked off with CLSA President Matthew Vernon leading the group in the pledge of allegiance and introducing the officers for 2009. The keynote addresses were delivered by John Matonich, the 2009-2010 President of the National Society of Professional Surveyors and Jack Dangermond, the founder of ESRI. Both had many salient points regarding the future of our profession and the challenges and opportunities that we face. Matonich recognized Matt Vernon in his capacity as NSPS governor from California, for bringing California ideas and issues to the NSPS. He thanked the NSPS members in attendance and encouraged those who were not members to consider joining and then discussed a few of the important national issues that NSPS deals with on behalf of all surveyors. Dangermond, as could be expected, opined on how he sees the surveyor's role in the GIS world and noted that our work is the foundation on which all other geospatial data rests. He discussed the different directions that GIS is taking as the technology advances to previously unimagined levels, and outlined many opportunities for us in this brave new world.

During the four day conference, Larry Phipps, President of Land Surveyors Workshops, presented workshops on the Seven Deadly Sins of Surveying, Anatomy of a Claim, Marketing for the Small Professional Office, and Pricing Professional Services. David Paul Johnson discussed Long-Distance RTK for the Non-Believer. Steve Parrish spoke on the topic of Double Monumentation and Pat Tami and Ric Moore hosted a lively panel discussion on issues regarding the Board for Professional Engineers and Land surveyors. Gary Kent,

nationally known Surveyor and ACSM/ALTA Committee Chair presided over a mock trial to close out the conference.

A large group of CLSA stalwarts, including Steve Martin, Don Woolley, Jerry Miller, Kelly Olin, Vern Klassen, Jas Arnold, Lee Hennes, James McCavitt, Bill Ming and Michael and Justin Pallamary directed portions of the LS and LSIT review programs. This undoubtedly took each of them much preparation time over the preceding months and each should be thanked heartily for their efforts! It warms my heart to see CLSA's strong dedication to helping the next generation of California's Surveyors by offering these impressive LS and LSI exam review programs.

On Monday, the Awards luncheon was held in a large semi-permanent tent on the hotel property. CLSA scholarships were handed out to several students and each should be congratulated for his or her hard work earning them. A notable non-CLSA scholarship was awarded to senior, Travis Bohan, who received a special Fresno State scholarship collected and contributed by the students themselves, in recognition of his work with and on behalf of his fellow students. (Travis was the student coordinator for this conference.) Way to go, Travis!

The Sacramento Chapter received the award for Chapter of the Year, and in an impressive coup, the Sacramento Chapter newsletter, the *Focal Point* received the award for Outstanding Newsletter of the Year. John Wilusz, our own beloved editor of the *California Surveyor* magazine, whose work has already netted him the 2008 NSPS award for Excellence in Professional Journalism, received the Member of the Year award, richly deserved. For his many years of tireless contribution to the California and national surveying community, Howard Brunner was awarded the Distinguished Service Award. You might consider taking the time to call or email these folks and offer congratulations for their dedication and hard work.

Monday night was the live auction, also held in the jumbo tent. Great food and libations were served and as he has done for us in the past, Lightning Williams delivered fast-paced fun as auctioneer. Many items, old and new were donated, the proceeds of which go to the CLSA foundation to fund student scholarships. Of special note this year, Matt Vernon donated a beautiful hand-crafted surfboard that he

Continued on next page

spent some 40 spare hours making. It brought in a tidy sum from someone who will probably hang it as art work rather than try to 'shoot the curl' on it. (*Hope I got that surfer lingo right, I'm a desert rat who lives a long way from the ocean.*) All together, with the silent auction, over \$12,000 was raised this year.

Another extracurricular activity this year was a bus trip to the Gas Lamp district of San Diego, where we were turned loose to find our own food and entertainment. What a very enjoyable way to spend a balmy Tuesday evening. Sadly, the "Casino Night", a fixture at recent CLSA get-togethers, was cancelled this year due to low interest in the final weeks before the conference started. I suppose it's no wonder given the uncertain economic climate at the present time. If the economy doesn't start improving by next year, perhaps we could host 'government cheese' night in lieu of Casino night. (*Hey, we are supposedly a 'graying' profession and I know way too many of you recognize that reference. I suppose we could try 'Dancing with the Surveyors' instead...*)

Along with the official activities of the conference, many extremely important round table discussions took place in the wee hours at the hotel lounge, especially outside by the eternal flame of the fire pit. These vigorous debates involved vendors, instructors, attendees, spouses, at least one auctioneer and probably unfortunately, some complete strangers, all swathed in wicker chairs and happy to be there, (*except perhaps the aforementioned strangers*). If

I could remember the specifics of any of these marvelously florid debates, I would elaborate...sorry.

But seriously, the annual conference offers many opportunities to expand and sharpen professional skills and to gain exposure to new ideas and issues. It also presents a chance to see exciting new technologies and talk to not only those who sell and support such techno-goodies but also those who are already using them in their day to day operations. However, just as important, the CLSA conference provides a chance to reconnect with old friends and colleagues and serves to remind us in these tough times of just how unique and important our profession truly is. I want to give a warm thanks to the hard work of those who organized this conference, those who gave their valuable time to put on workshops, those surveyors who came and participated and especially those vendors who came to support us.

Next year the conference will be at the Silver Legacy Hotel and Casino in Reno. There are many reasons to come to these affairs, some of which I have touched upon. Come for the professional development; come to get training for your junior staff; come to see new equipment; come to hear what issues we surveyors face in today's world, come for the fellowship, but just come. There, now I can step off my soapbox. The 2009 CLSA conference was great and the 2010 event will be even better. I hope to see you there! ❖

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By: Timothy Redd, PLS

To Scan or Not To Scan: A Primer on the Deployment of 3D Laser Scanning

Deployment of 3D laser scanners as a tool for use in surveying is currently one of the most talked about changes to the surveyor's workflow. Many survey and engineering firms are considering the possible use of scanning in their traditional projects, while others are exploring the newly opened markets available to scanning service providers. This technology is being rapidly adopted by engineers and surveyors everywhere. More and more articles are appearing in the various industry publications, and you now see many scanners on the exhibit floor at conferences. Is it all hype? Is scanning really as hot as the industry publications might lead you to believe? You might be surprised. The hype may not be that far from reality. Let's take a look for ourselves.

Cyra Corporation is largely credited with bringing 3D laser scanning to the attention of the surveying community in the mid 1990's with the Cyrax 2400 and 2500 model scanners. It got the attention of some surveyors immediately. Quickly the Cyrax scanner evolved and spawned a fast growing industry where scanners of many types are available from a wide variety of manufacturers.

To begin building an understanding of scanning technology, think of the laser scanners as a super total station. Although this is not an entirely fair comparison, it does illustrate many of the similarities to traditional total station surveying techniques and is key to understanding the potential uses for scanning. Most laser scanners can be setup over a point and make angle and distance measurements. The distances are derived from laser technology similar to the reflectorless laser distance meters found on many of today's total stations. The laser reflects off of the surface of objects in the field of view and is returned to the sensor for data logging, analysis and ultimately mapping. To collect topographic data with a total station, specific points are surveyed to document the line and grade of improvements in order to depict surfaces and contours. When using the scanner all points in the full field of view can be recorded at nearly any useful grid interval desired. The density of the scanning grid is usually set by the operator such that the necessary level of detail is recorded about the subject of the survey. More detail equals more density. Many of today's scanners are so fast that there is no practical reason not to scan the whole scene at the highest density possible.

One type of laser scanner known as phased-based, or phase-shift, always scans the full field of view. These phase-type laser scanners employ a different sensor technology than the pulse lasers. Suffice it to say that the sensor spins at a very high rate of speed and the measurements are returned to the sensor and recorded much faster than the pulse-type systems. The result is a survey with only millimeter spacing between points at surfaces 50 feet away, and the full field of view is surveyed in only 5 to 10 minutes.

Network control for the total station surveying is typically derived by traverse using a backsight and foresight target system and then ultimately the traverse and radial survey data are tied to some control network and coordinate system. Many scanners can actually traverse this way. Also, the use of robust resection or free station techniques to build control networks are very common. This concept of setting up on control points and radial surveying the terrain in your field of view is essentially the same for both total station and laser scanner. Therefore, the types of survey applications where you choose laser scanning are not any different than most of your everyday surveying projects.

One question which inevitably comes up in any discussion of laser scanning is: What do you do with all of the points? It is true that scanners can collect several tens of thousands of points per second and hundreds of thousands of points per second for phase-type laser scanners. Is it too much data? In a simplistic response, it is true that it is too much but only because not every point is used in most cases. However, to see the thousands of points plotted on a computer screen, to see the very form of the objects you have surveyed, to see thousands of points blanketing your terrain is revealing and inspiring. The richness and thoroughness of detail that can be captured in a scan will leave nothing to the imagination. This image of the site surveyed is called the point cloud. These points appear as a dense web of discreet survey points, which if connected into a TIN, will create a surface and contours lines easily exported to cad software packages.

Much like the traditional data collector, the scanner streams the data to a hard disk or other memory device

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such as a laptop computer or in some cases an onboard device. The points can be viewed and oriented to the control network by using software usually provided with the scanner. Most manufacturers have a software suite available which serve to collect and record data from the scanner, process the data to control requirements, visualize the point cloud and most importantly create line work, contours, survey analysis and other output based on the points in the point cloud.


Unlike a total station, where the instrument is set at a comfortable height for the operator, the laser scanner can be set at any height. The operator is then free to set the scanner at a height that is optimal to the circumstances. Many situations are suited for tall tripods. When scanning paved areas the angle of incidence will affect the range and accuracy. The taller the scanning setup, the farther the range of coverage before the laser beam skips or returns unreliable pulse signals.

There are several sectors in our industry that benefited immediately from this technology and continue to do so. But many of these applications are on the periphery of the traditional land surveying and civil engineering services. The oil and gas production industry has adopted the use of scanning at a blistering rate. The advantages of rapid, voluminous, and detailed measurements minimize the down time of facilities that produce millions of dollars a day in oil revenue.

Use of time saving technologies in this setting is an easy business decision. The petro-chemical companies are not the only early adopters of scanning technology, but their accelerated use is really driving the development of improved scanners and software.

Scanners are becoming the tool of choice for some surveyors. If you or your firm are considering acquiring this technology, consider the type of surveying work that you most often perform for your clients. Is your work conducive to the scanning methods described here? Some surveyors will find that they will not benefit from scanners. Scanners are not so useful in boundary retracement. They are not time or cost effective for many applications where you would employ aerial photogrammetry. All the same, they are amazingly effective for many monitoring surveys. They can be used to map road surfaces without closing traffic lanes or putting personnel near to traffic. These are only a few of the considerations to ponder when evaluating your potential use of laser scanning.

Hopefully now you have a better feel for the use of laser scanners. As with any major capital investment, do your homework before making a purchase. Consider the types of surveys you perform the most, or would like to perform more often, and decide if your shop could benefit from this amazing, emerging technology. ❖




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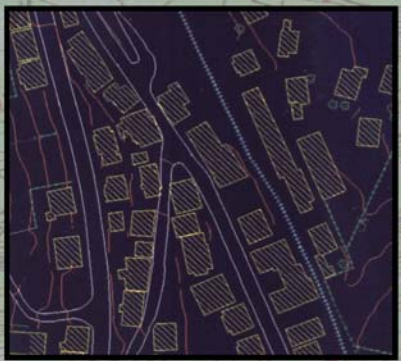
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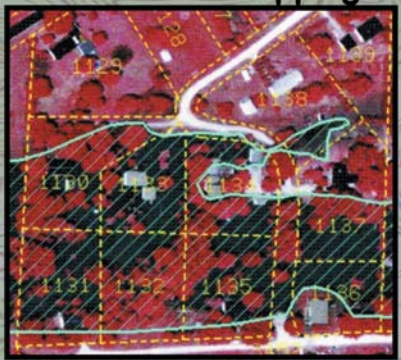
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The Cumulative Effect of Inefficiency

It was a single piece of straw that catastrophically broke the camel's back. A camel is considered a beast of burden, meaning that it is ideal for heavy work. A quick internet search will tell you that a camel can carry a comfortable weight of 330 pounds with a maximum weight of 990 pounds. Don't ask me to verify this, I don't own a camel. The illustrative point of this idiom comes into perspective when you analyze the weight of a single piece of straw in relation to the entire maximum weight the camel can carry. Assuming that a single piece of straw weighs half of an ounce, it was 990.03 pounds that broke the camel's back. What killed that poor beast was not a single piece of straw, but 31,680 + 1 pieces of straw.

Apply this idiom to the workflows that we utilize in our business and that single piece of straw becomes a singular unit of inefficiency. Inefficiency in any process is unavoidable. A singular unit of inefficiency rarely is detrimental to a process. However, a cumulative effect of inefficiencies on a process can be catastrophic. This logical deduction tells us that any function of sustainable business must incorporate some method to mitigate inefficiencies, in all of their shapes, sizes and forms. In the last one hundred years, companies and individuals alike have equated the implementation of technology to increases in

A singular unit of inefficiency rarely is detrimental to a process. However, a cumulative effect of inefficiencies on a process can be catastrophic.

efficiency. Undeniably, the growth of technology has played a large role in the increase of workflow efficiencies. Inversely, the growth of technology has created new complex inefficiencies that camouflage themselves in layers of everyday activities and workflows. These inefficiencies are sometimes subtle and hard to identify, but nonetheless can have a cumulative effect on the ability of a business to compete.

There are many areas throughout a business where small inefficiencies relating to technology can be found. For the sake of brevity, this article is going to explore specifically the subject of data bandwidth. Is it possible that the speed of your data connection may be costing you in the form of inefficiency? There are a few things to make note of before we explore this question. First, if you are continually perturbed because you are waiting for data from your online connection, you are most likely being frustrated at a noticeable inefficiency. Second, if you have spent money to have the fastest connection available, but fail to utilize that bandwidth at capacity, this can be an inefficient use of your finances.

Data obtained from Nielsen Online for the month of January 2009 highlights that the average internet user in the United States spent 74 hours and 45 minutes on the Internet, approximately 2 -1/2 hours per day. In that time the average user viewed 2,580 web pages, approximately 86 web pages a day. How much of those statistics pertain to business related usage? A white paper written by Cisco Systems Inc., in June of 2008 estimated that business IP traffic for 2009 in North America would reach 1,492 petabytes per month and rise at a rate of 32% a year through 2012. It stated that the average business user generates four gigabytes per month of Internet and WAN traffic. The average business user downloads approximately 130 megabytes a day through web pages, email, file transfers and online communication. The white paper suggested that a large enterprise user could generate double that traffic in a month. Are you thinking that a poor economy will bring these statistics down? Statistics are actually showing that the poor economy is driving internet usage up, for both businesses and consumers, in double digit percentages.

Why does the average business user spend so much time online? Looking specifically into the surveying and engineering professions, most of what we use to perform our everyday tasks is in the form of electronic data or electronic communication. The fax is used less and being replaced daily by scanners, PDF and email. All of the research that used to be done by driving to the public agency is being delivered in electronic format via online GIS systems or document research centers. For business development, most of the news, requests for proposals and specific data reports are delivered online. Transmit some digital photos, watch a streaming video training course, download a RINEX file and then host a video conference, all common business activities that exceed the bandwidth of the average Internet user.

Many surveyors and engineers fit into the category of a small business. The 'one-man' small business is responsible for everything from advertising and business development to sending invoices and collecting payment. In general, a small business of only a few people has a high internet usage. If you fit into this scenario and are feeling pretty thrifty by spending only \$5.99 per month on a dial-up connection, you may want to consider upgrading. A small business on a dial-up connection is an extreme case, but if it is the case, using the average user statistic, you are spending over four hours a day waiting on your data, verses 24 minutes a day if you were using a

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basic high speed data connection at about \$20 a month. That sum over a one year time is about 910 hours or 38 days. I hope if any of the readers here have a dial-up connection for their small business, you are not really spending those four hours a day waiting in front of your computer.

Most small businesses today, even in many rural areas, can access a high speed data connection, but depending on the level of usage, there may still be some time inefficiencies. High speed data connections come in a variety of speeds depending on your geographical area. The faster a service provides upload and download speeds, the more expensive the connection is. In a comparison, a basic high speed data connection that allows 768 kilobit downstream verses a faster high speed data connection that allows two megabit downstream, can equate to a time difference of 65 hours a year. Usually the cost difference between these two tiers of data speeds is relatively inexpensive. The 65 hours a year of time savings is only accurate if you have one user per connection. If a connection feeds an office of multiple users then that connection is divided when it is simultaneously being used. Assuming there is only one user per connection, there is a 15

minute per day accumulated difference between the two tiers of data speeds.

Is that 15 minutes per day worth an additional \$10 to \$20 per month to an ISP? It may have a significant value, if you consider the 15 minutes per day difference, being the minimum accumulated inefficiency of your time. In the television advertisement industry, in a one hour program there are 42 minutes of actual programming and 18 minutes of commercial time. Most commercials are no longer than 20 to 30 seconds in length. When commercial time exceeds 18 minutes in one hour, statistics show that the viewer is most likely to become frustrated, possibly to the point of changing the channel. If a commercial is more than 30 seconds in length, the viewers mind begins to be distracted, to the point that the message of the commercial is lost. What does that have to do with a high speed data connection? That same 30 second rule applies when a person is working on a specific task. If there is a pause of 20 to 30 seconds, when waiting for a web page, a data file or an important download, the mind is likely to wander off of the current task. On a good day, a person will try to multi-task to make their time efficient. On an average day, an employee will make a trip to the coffee room, the bathroom, stop into a co-workers office to chat and then after glancing through the newspaper, return to their desk. The point is that the 15 minutes per day of minimum accumulated inefficiency can quickly become one hour per day due to distraction. Being able to download that 10 megabyte file in eight seconds verses three minutes could have the effect of increasing productivity significantly during that same working day.

Scale this up to an office with 10 to 40 employees, the speed of the data connection can become a large source of inefficiency. If more than a few employees decide to FedEx a CD, drive to an agency to retrieve data or even possibly go home to download a large file on a faster residential data connection, the accumulated inefficiencies over one year's time, if calculated, could be impressive. On the scale of a large firm, having several hundred employees, the inefficiencies caused by inadequate bandwidth could be a tremendous burden.

Creating efficiencies by providing faster data content to your business may seem trivial as compared to the challenges of the current economy. This economy presents larger issues than what a high speed data connection can resolve. In hard economic times, production must be efficient to compete and produce profit. Many businesses across the profession are carrying that maximum load of 990 pounds. Finding ways to reduce inefficiencies, in any aspect, is a sure way to keep the camel's back healthy. ♦

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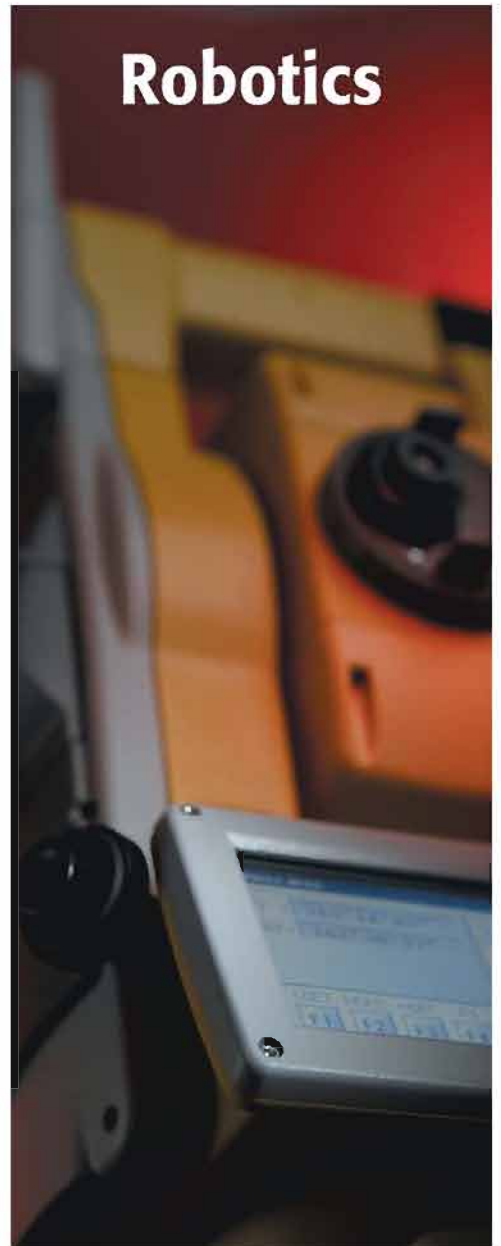
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By: Carl C. de Baca, PLS

AREA 9 Director's Report

Hello to everyone in Area 9. I just returned from the spring, 2009 National ACSM Conference in Salt Lake City, Utah and I am writing this while the events of the conference are still clear in my mind. This was a joint conference with the Utah Council of Land Surveyors, the Montana Association of Registered Land Surveyors, and the Western Federation of Professional Surveyors, and was, I thought, very well run and very well attended.

The spring meetings of the NSPS typically start off with numerous committees getting together as well as less formal groups such as the Western States Governors Council (WSGC), which is chaired by a governor from Area 9, California's Matthew Vernon. For the first couple of days, it is not unusual to see people popping in and out of one meeting after another in an effort to keep abreast of as much as possible. These committee and council meetings are where old business is hashed out, new concerns brought forward by the governors are addressed and motions for consideration by the Board of Governors (BOG) are drafted. Your governor's report is probably the more appropriate place to discuss these wide-ranging meetings and so with one or two exceptions, I will leave such details to them.

Committee Meetings – Thursday and Friday, February 19-20

Membership Development, Membership Benefits, Public Relations Joint Committee Meeting

The chair of the Public Relations Committee, John Fremeyer, governor from Minnesota, suggested a concept regarding a possible way to bring the membership of the various state societies into the NSPS thereby increasing the membership of NSPS many-fold. This idea was based on the uncomfortable fact that when meeting congressmen and congressional staff during lobby day, the two-part question is often asked, "How many licensed surveyors are there in the US and how many are members of your organization?" Well the answer is a) upwards of 50,000 and b) about 5,000. It's not a good situation to lobby congress for legislative assistance for our profession when our group represents only 10% of the total. We all recognize that this must change if we are to exert any influence with our senators and representatives. Many efforts have been tried in the past to expand membership with limited success. And frankly, with the current economic climate, it will be a battle just to retain members we already have for the next couple of years. But we have to take a longer view and find a way to increase our membership if we are to survive. Fremeyer came at the problem from the perspective of taking a look at our current budget, divided by the total number of potential state society members and asked, "what would the cost per member be?" to make them all members. The answer is not much, really. But this is much more than a simple economic problem. In consideration of Fremeyer's concept, the committee decided that all of the state societies must be approached and asked a simple question, "What can the NSPS do for you to provide sufficient value that would cause you to embrace some sort of joint membership arrangement?" Ideas were discussed including somehow granting all state members a 'basic'

membership in NSPS which would satisfy our need to declare much greater representation than we currently have. Along with basic membership could be a 'full' membership, carrying a higher fee but granting such things as voting rights and access to other data, privileges and benefits. The concepts discussed at this meeting were taken to the WSGC and the Great Lakes Council and were eventually crafted into a motion to be brought to the BOG.

Private Practice Committee

Chaired by Robert Dahn, Area 1 director from Connecticut, this is a busy committee with a lot on its plate. In a joint effort with the education committee the private practice committee has been charged with coming up with some model curriculum standards for 2 and 4 year surveying degrees. What better group to make such a list than the people who will be recruiting the graduates from these colleges? The committee will be assembling a list of the topics that are seen as most important in the well-rounded development of a student surveyor and that list will be forwarded to the education committee at the fall 2009 meeting. The private practice committee has also been tasked with taking the very old ACSM draft contracts manual and updating it.

Board of Governors Meeting – Saturday, February 21

As usual with the BOG meeting, there was a long list of reports given, most covering committee activities and some dealing with old business. I will list the highlights of these reports and describe the new business that was brought before the board for consideration. These are neither listed in chronological nor priority order, but more how I recollect them just now.

Canadian Council of Land Surveying (CCLS) Liaison

Murray LeGris of Ontario reported that the CCLS has begun a re-organization into a member-based organization and that the first order of business is development of a national surveying license, which would simplify reciprocity amongst provinces, by reducing the qualifications to an exam. How US surveyors might fit into that was not touched and whether such an effort will reignite calls for a NAFTA-style mutual recognition agreement between them and us was not discussed. But I suggest we keep a close eye on this.

ACSM Executive Director

Curt Sumner delivered an impassioned speech whereby he started out by asking how come no one ever remembers who surveyed some great building or bridge or other edifice? Architects are remembered, engineers are remembered, contractors are remembered, even though most of the time it is the surveyor who takes the unbuildable design or the plans with the dimensions that don't add up and renders them buildable. Curt emphasized that the states need to put aside their differences and seek greater cooperation amongst themselves and between the states and the national society if we ever want to be taken seriously as a profession. I saw this as a theme for this conference, one that dovetails well with Fremeyer's membership proposal.

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National Geodetic Survey – Dave Doyle

Dave Doyle had several items of interest to report including that a new geoid model, Geoid09 is available in beta form and OPUS is now offering OPUS-DB a database into which your points can be placed as long as they have a minimum of 4 hours of data and you submit a couple digital images of the point along with a description. A new tool called LOCUS which is similar to OPUS but for digital leveling will soon be offered.

Bureau of Land Management – Don Buhler

Don Buhler reported that the new BLM manual is in the ‘last stages’ and would be rolled out in time for our fall meeting. They had hoped to make it by May which is the anniversary of the Land Act of 1805. They are planning to put together a celebration perhaps the day before our Lobby Day and have in attendance representatives from Ohio and Alaska, the first and last PLSS states, as well as the head of the Department of Interior, Ken Salazar, and us of course.

TrigStar Program

Bob Miller reported that this year’s national winner is Jonathan Wilson from Jefferson, Ohio. He was his high school’s valedictorian and is now enrolled in the Geomatics Engineering program at Ohio State University. A great victory for TrigStar!

Also TrigStar-related was recognition by the Chairman of the BOG, Patrick Smith, Kevin Kea, Hawaii governor, who was instrumental in getting 12 schools and sponsors signed up in their first year of participation and another six in this, their second year. Congratulations to Kevin are in order!

Joint Government Affairs Committee (JGAC)

The JGAC report was given by newly installed president John Matonich. He notes that there is a new government contracting policy due to take effect in 2011 that will require that certain agencies with large budgets hold back 3% of fees from a consultant until the end of the year in which the consultants project is completed, at which time they will decide whether even to release the retained fee at all. (I’d like to know what moron thought that up.) As you might imagine, the JGAC, along with partners from other professions, is vigorously combating the implementation of this absurd policy.

JGAC is working with Maryland representative Christopher Van Hollen, Jr. to introduce into some legislation an earmark for \$250,000 for TrigStar funding. Also, last fall, JGAC was able to get legislation, known as ‘STEM,’ which provides for forgiving college loans for math, science and engineering students, changed to include surveying students as well. This was a great victory. And as you know, JGAC was able to get legislation passed declaring the third week in March as National Surveyors Week.

New Business

From the various committee meetings of the past two days, four motions were brought to the BOG, all of which passed and were carried to the Board of Directors (BOD) meeting as follows:

To have the BOD establish a committee to develop and publish a Crises Management Manual.

To have the BOD support the study of electronic voting methods for officer and director elections.



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To have the BOD support the membership proposal and give direction for further study.

To have the BOD direct the conference committee to negotiate for free exhibit hall passes to be provided to directors, governors, committee chairs and state executives.

Board of Directors Meeting – Sunday, February 22

This was the first meeting run by President John Matonich, a fine public speaker who unfailingly gives his reports on the JGAC in a well organized, fast paced and lively presentation, and who runs his board meetings the same way. On every topic, input and commentary from the board members and audience was solicited and encouraged, but in a very efficient, compose-your-thoughts-before-you-speak manner.

After approving the minutes and the consent agenda and adopting the order of business, reports were given by John Hohol and Curt Sumner. Hohol covered the conference committee, of which he is the chair, and the FIG delegation, a group that he oversees. He reported that attendance at the Salt Lake City conference was around 1,150, up slightly from last year in Spokane, (although exhibitor attendance was clearly down, as one could witness with a stroll through the exhibitor’s hall.) The FIG working week will be in Israel this year in May. And in 2010, the next FIG congress meeting will be in Sydney, Australia in late April. Hohol would like to gauge interest for sending a large party of NSPS surveyors to Sydney and has done some preliminary

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AREA 9 Director's Report

Continued from previous page

research on a package deal for travel and accommodations. It looks like \$1600 will get you round-trip airfare plus one domestic flight in Australia (for personal recreational purposes). Accommodations are still being researched. This trip sounds like a great deal and I, for one, am interested.

Curt Sumner, the executive director of ACSM, had several items of interest to offer to the board. He reiterated briefly the advice he offered at the Board of Governors meeting that we surveyors need to find ways to cooperate more closely, from state-to-state and between states and the national organization. Closer ties and more cooperation are the only way we are going to raise our esteem in the eyes of the public. Sumner noted that Phase One of the ACSM outreach program, which is a study to determine how well the ACSM and its member organizations are recognized within the geospatial community, is moving forward, and as it does, Curt will be gathering data in anticipation of later moving ahead with Phase Two, which would be implementation of any ideas developed in Phase One.

While the 2010 spring conference site and date have been selected, (Phoenix, Arizona, April 25-29), the 2011 site has not yet been selected. Sumner asked rhetorically if we might want to change the way we do things a bit and try to focus on making a more memorable conference and perhaps focusing a little less on an endless stream of workshops.

NSPS is working with NCEES to see if we can get a line item inserted into their annual budget for assistance to us for things such as the speaker's kit, which they have funded in the past, (but only upon direct request). Sumner is working with Pat Tami, the NCEES west region vice president to make this happen. We are also exploring getting assistance from NCEES to develop a video segment of the "Spotlight On..." series through PBS. This would be an approximately 10 minute video on the profession that would come with a guarantee to run some 500-600 times on PBS stations. After production the video would be ours to do whatever we want with. Estimated cost is around \$30,000.

Sumner says the ACSM's new-look website should be rolled out later this month. More links, sites, and features will soon be coming our way.

Finally, the fall NSPS meeting will be held in late September at the Holiday Inn in Gaithersburg, Maryland, instead of the Arlington Hilton where it has been held the last few years. The Hilton has recently raised its rates and essentially priced us out. The Gaithersburg Holiday Inn is across the street from the ACSM central office and this location, plus less expensive rates could save the organization in the neighborhood of \$30,000, a move toward greater austerity that I fully support.

The items of new business, coming from the Board of Governors meeting, were generally not of a controversial nature and with President Matonich's deft steering, the board moved rapidly through them. The board voted unanimously to fund up to \$1000 to print 50 copies of a history of the first 25 years of the NSPS, prepared by Harold Charlier. More copies will be printed later, depending on interest. This is seen as sort of a 'coffee table' book.

The board, voted unanimously to support studying the development of a Crisis Management Manual, which would be of great ben-

efit to the members who come from smaller firms that may not have developed their own such manual. This study was directed to the Private Practice Committee.

The board voted unanimously to direct the conference committee to annually negotiate with our conference partners, so that directors, governors, committee chairs and state executives, who come to the spring conference but due to meeting schedule do not typically register for the conference, would be granted passes to the exhibitor's hall, free of charge. (*Can I get an "Amen, brother..."*)

The board voted unanimously to set up an ad-hoc committee to study the possibility of adopting electronic voting methods for our officer and director elections.

The board voted unanimously to explore the membership proposal put forth at the Board of Governors meeting. This came with the caveat that the committee must embrace the state executives group as a full partner in exploring any possible routes to fostering a closer relationship between the state societies and the NSPS whereby we could include all state society members as NSPS members of some sort. This will be a long process but if successful will be a great step forward for the NSPS.

The board voted to form an ad-hoc committee of Jon Warren, the membership committee chair, and Treasurer John Fenn and directed them to work with staff to explore how state societies can develop their on-line membership registration to include a way to sign up for both the state and the NSPS with a single credit card charge. The meeting, which started promptly at 9 am, was adjourned at 11:45.

Conclusion

As Area 9 director, I see my primary job as being a two-way channel for communication between the NSPS and the state societies in my area. So don't be afraid to contact me with questions or suggestions. And, while I understand well the drive to retain autonomy and the pride that comes with belonging to a successful and active state society like all of those within Area 9, I also support anything that would foster a closer relationship between the states and the NSPS because I see that relationship as complementary rather than redundant or overlapping. With all the various threats to our profession, from the unlicensed doing tasks with machine guidance that ought to be done by the licensed, to state boards loosening rather than tightening their definitions of land surveying, we need to band together ever tighter and fight for our survival as a distinct and important profession. Steps were taken at this conference that may ultimately lead all state members to membership in the national society. From that moment on, when we speak to congress, we can rightfully say we represent the majority of licensed land surveyors in the nation, and believe me, that will be critical if we are to achieve our legislative goals consistently. If for no other reason than that, I see this conference as a resounding success. In the meantime, if you are reading this but are not yet a member of NSPS I hope you will consider making the choice to belong and help make our voice heard.

I hope I see you at Lobby day this fall, or failing that, at the spring 2010 Conference in Phoenix. ♦

Respectfully submitted,
Carl C.de Baca Area 9 Director
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A boundary monument between Nicaragua and Costa Rica, photographed by Thomas Taylor, PLS, while boating through the jungles of Central America.

Postcards



Paul Cook, PLS, of Santa Barbara demonstrates his instrument work and shows off his transit tattoo at the 2009 ACSM/NSPS Conference in Salt Lake City, Utah.



Q&A SMA Expert

Question

I recently performed a title search on property I own. The search turned up a 1915 grant deed between a previous seller and buyer, which deed references several parcels shown on a subdivision map, properly recorded in 1911. The map is still on record and the surrounding properties (and homes) reflect the parcels shown on that 1911 recorded map. Were those deed-referenced parcels created by that 1915 deed conveyance?

Answer

Good question! And the expert answer is – it depends!

Most land use practitioners agree that the conveyance of a parcel by a deed that identifies the parcel by reference to an older subdivision map, such as a map recorded in 1911, establishes that parcel as a legal parcel under the Subdivision Map Act today. (See, e.g., *Gardner v. County of Sonoma*, 29 Cal. 4th 990 (2003); *Gomes v. County of Mendocino*, 37 Cal.App.4th 977 (1995).

Moreover, most practitioners also agree that if the conveyance deed refers to multiple parcels, and those parcels are not contiguous, then those parcels also are legal under the Subdivision Map Act today. (See, e.g., *Lakeview Meadows Ranch v. County of Santa Clara*, 27 Cal.App.4th 593 (1994); *John Taft Corporation v. County of Ventura*, 161 Cal.App.3d 749 (1985). Therefore, if the parcels described in your 1915 deed are not contiguous, then those parcels were each created by the 1915 deed conveyance.

However, practitioners disagree on whether those parcels are legal if the parcels are contiguous on the subdivision map. Some would argue that contiguous parcels cannot be individually created unless they are separately conveyed (apart from each other). They argue that recent judicial decisions have, in dicta, spoken to the issue. However, each such case did not

have a deed conveying parcels from a post-1893, Subdivision Map Act-compliant, properly recorded map!

I submit that as long as the parcels are shown on a post-1893 map (properly recorded), and the parcels are separately identified in the deed (with their map/lot reference), they need not be separately conveyed (through separate deeds). Although this is a very complicated issue and could be the subject of a much longer writing, the following is a brief description of my reasoning.

The Supreme Court has concluded that the modern Subdivision Map Act originated in 1893. (*Gardner v. County of Sonoma*, 29 Cal. 4th 990 (2003). If one accepts that beginning in 1893 the Subdivision Map Act had "some purpose" (other than creating parcels through recordation), then that purpose was to ensure a proper and legal "coordination" between the conveyance document (the deed between landowner seller and buyer) and the official "data" that was placed into the hands of the neutral recorder's office - which data was the map recorded pursuant to the Map Act. This allowed the buyer to avoid being defrauded: he could go to the recorder's office (a neutral), affirm that the seller was in fact the owner of the mapped land, affirm that the map was properly recorded, affirm that the parcel was in fact shown on the face of that properly recorded map and that it was the same parcel referenced in the deed, and affirm that the parcel had not yet been sold to someone else. The deed conveyance upon being perfected (recorded) created the parcels shown on the recorded map and referenced in the perfected deed.

In other words, when a seller referenced parcels in a deed beginning in 1893, the Map Act required that the parcels be shown on a properly recorded subdivision map (see 1893 Map Act § 4). The recorded conveyance then created those map-described parcels. If the deed expressly conveys more than one parcel, then by the express terms of the deed we must conclude that the grantor intended to convey more than

Continued on next page

one parcel. If the seller intended to convey only one parcel, then he would have either had to use a "metes and bounds" description describing the exterior boundary of the one large parcel, or he/she would have used the recorded map as a reference but would have expressly shown his/her intent to convey them as one parcel, not more than one, on the face of the deed (see, e.g., Cal. Civ. Code § 1093).

Any other interpretation would ignore the purpose of the Map Act and the plain language of the deed. Clearly, one of the primary purposes of the 1893 Map Act was to make property conveyances more reliable, accurate, and efficient, which would allow a grantor to efficiently and accurately grant more than one parcel in one deed. In fact, any claim at that time that only one parcel was conveyed when more than one is referenced (from a map properly recorded under the Map Act) would have been a violation of the 1893 Map Act.

For the foregoing reasons, I would argue that, assuming your 1911 map was properly recorded and your 1915 deed

expressly references the map and expressly identifies more than one parcel on that map, the conveyance of those parcels in the 1915 deed "created" them as legal parcels. ❖

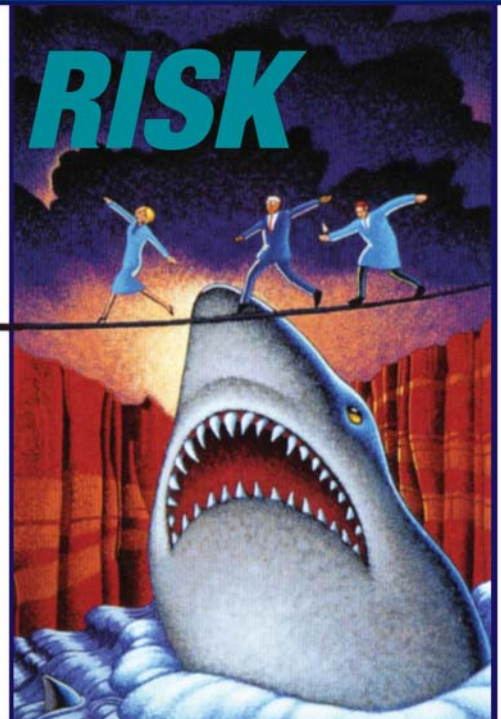
Michael P. Durkee, a partner in the Walnut Creek office of Allen Matkins, represents developers, public agencies and interest groups in all aspects of land use law. Mike is the principal author of Map Act Navigator (1997-2008), and co-author of Ballot Box Navigator (Solano Press 2003), and Land-Use Initiatives and Referenda in California (Solano Press 1990, 1991). 415.273.7455 mdurkee@allenmatkins.com

"Mike wishes to thank Tom Tunny, Senior Counsel at Allen Matkins, for his assistance in writing this article."

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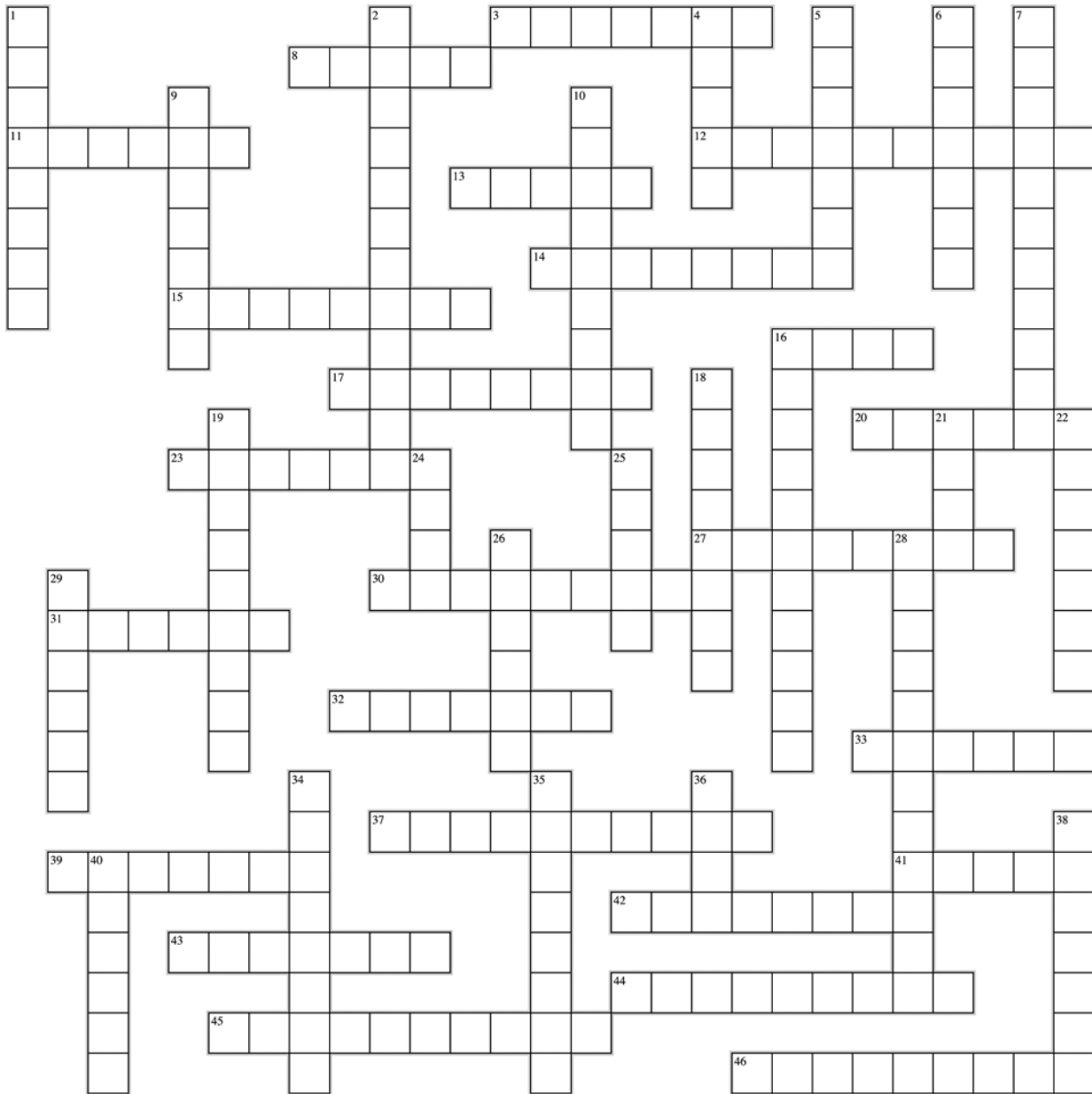




Crossword Puzzle

By: Ian Wilson, PLS

CLSA Crossword Puzzle #11

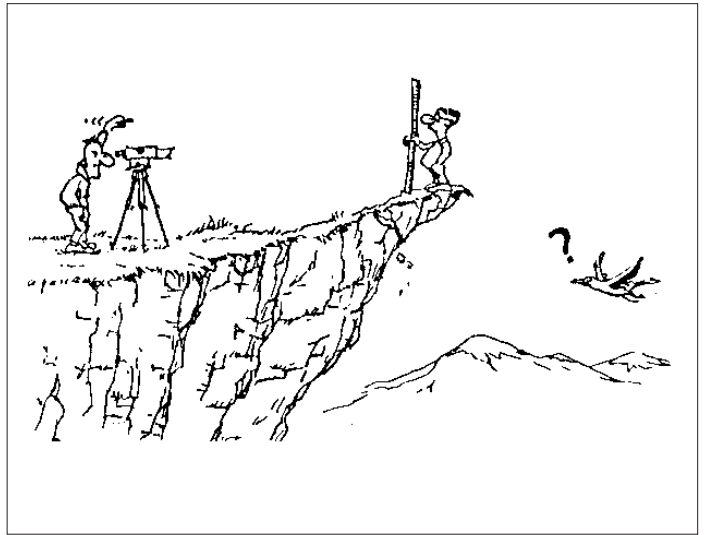


EclipseCrossword.com

Ian Wilson, PLS is the Director of Survey for WRG Design, Inc. in Roseville, CA. As well as being a licensed land surveyor, he and his wife, Laura, are avid SCUBA divers. They are looking forward to "getting wet" on future trips along coastal California and around the world.

Across

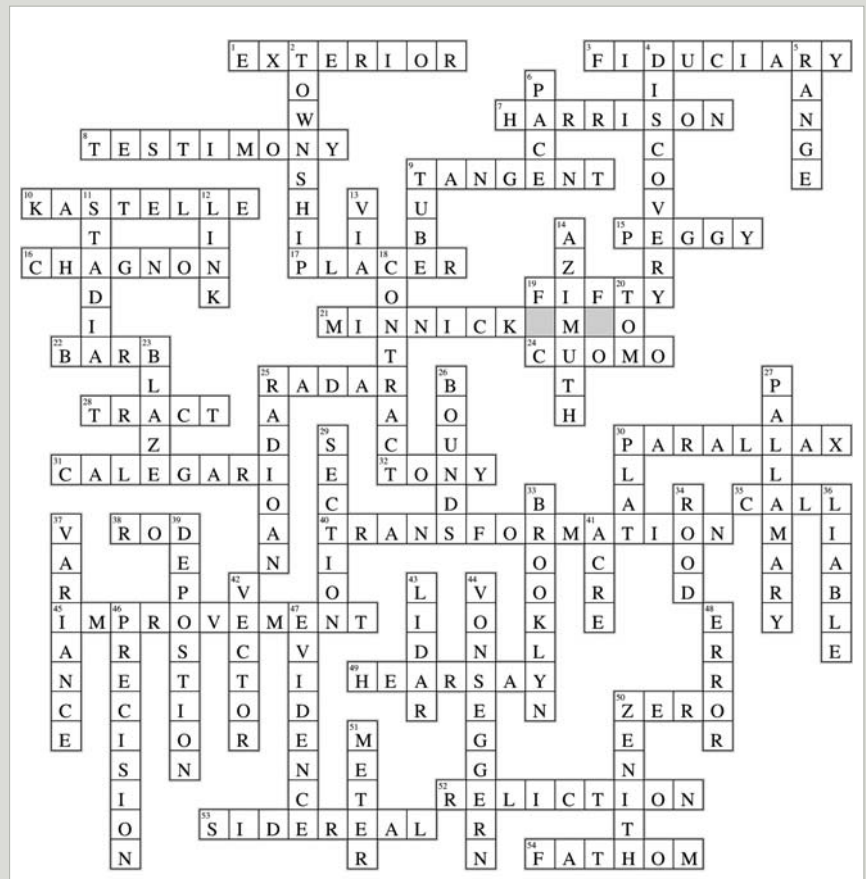
3. SOAKS UP INK
8. SMALL ISLAND IN A RIVER
11. DESIRED MEANING
12. TYPE OF EXPERT WHOSE WORK IS NOT USUALLY DISCOVERABLE
13. BLOW INK ON A MAP BUT DON'T ENLIST
14. ESTATE OF "CLASSY HEIRS"
15. NEARNESS TO TRUTH
16. WRITTEN CONVEYANCE DOCUMENT
17. TALENTLESS STAR MEASURE
20. VARIATION IN SURFACE
23. DISTANCE TO THE RIGHT OR LEFT BUT NOT POLITICAL
27. MARKS A CORNER
30. OUT-OF-COURT TESTIMONY MADE UNDER OATH
31. SHORT PERPENDICULAR
32. MISTAKE OR BUST
33. SIX FEET
37. INSURANCE POLICY TERM
39. AUXILLIARY SCALE USED TO AMPLIFY ACCURACY
41. THIRTY NINE POINT THREE SEVEN INCHES
42. CARTOGRAPHIC REPRESENTATION
43. CORRECT MARQUIS
44. RENDER PARALLEL
45. UNLAWFUL SUBDIVISION PRACTICE
46. DIFFERENCE IN LONGITUDES



Down

1. NORTH - SOUTH LINE
2. TAKING PRIVATE PROPERTY FOR PUBLIC USE
4. GPS DATE
5. HTDP MOTION MODEL
6. 2.47105 ACRES
7. AGREEMENT
9. TYPE OF POINT
10. WATER BARRIER
16. DIFFERENCE IN NORTH OR A POLITE TURNDOWN
18. SECOND EQUINOX OF THE CALENDAR YEAR
19. MEASURER UNDER PRESSURE
21. CLAIM AGAINST LAND
22. 660 FEET
24. TRIANGULAR OVERLAP THAT CREATED THE INTERNET
25. FOUR POLES
26. DEFINITE BOUNDARY MARKERS
28. UNLAWFUL INTRUSION
29. MATHEMATICAL INTERSECTION
34. DISPLACEMENT
35. SANTA CLARA COUNTY ENG. TECH. III
36. PLACE DATA ON A MAP
38. BUYER
40. RIGHT TO LEAVE

Key to CLSA puzzle #10 (Surveyor Issue # 157)



If you have an idea for a puzzle theme or a clue you would like to include in an upcoming puzzle, email to clsa@californiasurveyors.org

Photo of the Year

Congratulations to Bob Fredricks, PLS for submitting the winning photo. "My Cubical" CalTrans Survey



To submit a photo for consideration of photo of the year, please email a high resolution photo along with caption to clsa@californiasurveyors.org



CONGRATULATIONS CLSA AWARD WINNERS!



The Chapter of the Year Award is presented to the CLSA chapter that best demonstrates overall excellence and has best supported and promoted the mission and objectives of CLSA. This year's Chapter of the Year award was presented to the Sacramento Chapter. The Sacramento Chapter made great strides in 2008. They have increased the educational opportunities available to members including hosting both an LS and LSIT workshop. The Sacramento Chapter remains active in their local community by participating in Habitat for Humanity and they continued to support the CLSA Outreach program by attending and manning a CLSA booth at the GeoWoodstock GeoCaching event. Congratulations to the Sacramento Chapter for their accomplishments.

Chapter Newsletter of the Year was presented to Sacramento Chapter. Criteria for newsletter of the year is based on consistency and timeliness of the newsletter, pertinent content, effective writing as well as layout and overall appearance. Congratulations Annette Lockhart, Editor of the Sacramento Chapter Focal Point.

The CLSA Member of the Year Award is given to someone who is considered to be the person that has best supported and promoted the objectives of CLSA and who has contributed the most to CLSA activities. This year's recipient, John Wilusz, PLS, has gone above and beyond the call of duty. He has dedicated his time, energy and talents to CLSA for many years. As editor of the California Surveyor magazine, his hard work has helped to give national recognition to CLSA in the form of two consecutive National Journalism awards from NSPS. Thank you John for all your hard work!

The CLSA Distinguished Service Award is CLSA's highest service recognition. As such, the recipient must demonstrate exemplary service to the profession extending beyond the chapter/local level for an extended period of time. This year's recipient, Howard Brunner, PLS, has a long-term record of leadership and commitment to both CLSA and the profession. He is a past president of CLSA. In addition he has protected the rights of California Land Surveyors by serving for many years as a liaison to the National Council of Examiners for Engineers and Surveyors (NCEES). ❖



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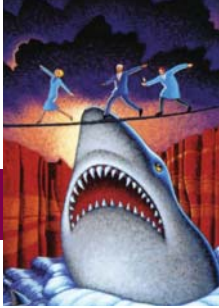
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What, Me Worry About Insurance?

What, me worry about insurance? Well, maybe a little. With all the current financial problems, insurance company downgrades, bank failures, collateralized debt obligation losses, credit default swap failures, mark to market necessities, it's time for an informal review of the state of the insurance markets for CLSA members.

What should you expect your insurance to do? A lot. It should always be there when you need it to pay your losses. There are no guarantees about whether your insurance policy prices will go up or down, but I have some predictions. Like the stock market, insurance pricing is hard to predict, but in general as stock prices go up insurance prices go down. That is because there is more capital available for insurance investment and insurance companies can make money in the financial markets. When this happens it is called a soft market.

Conversely, as stock prices go down insurance prices will go up because insurance underwriters need to make money from the product they sell. This is called a hard market. Right now we are, in general, probably going up in price and are at the beginning of a hard market increase. Over the last five years we have been enjoying a soft market. Insurance companies had plenty of capital, losses were reasonable, re-insurance (which is insurance for insurance) was cheap and competition among insurance companies was fierce. Now, insurance company investments are shrinking while their losses increase so they are starting to increase their prices.

Uncertain Economy, Uncertain Future

On March 27, 2009, the California Workers Compensation Insurance Rating Bureau recommended a 24.4 % pure premium rate increase to be effective July 1, 2009. Property and liability underwriters are tightening underwriting requirements for construction, safety, security, allowable losses and minimum premiums. They haven't, however, asked for big rate increases yet.

What Should You Do?

You can pay attention to what's going on in the insurance world around you. Talk to your peers. Talk to your bro-

kers. Ask them how their insurance renewals are going. Attend to your own risk management chores. Keep your losses low with good safety practices. Be sure to accurately report your renewal revenues and values. Consider using higher deductibles. Review lower limits where feasible. But be prudent- don't over or under-insure.

What Do We Do?

As a broker we watch for market changes that affect our clients. We review market trends and always use A-rated companies. We prefer using admitted companies as much as possible because if an admitted company becomes insolvent, the California Insurance Guarantee Association will pay losses with funds collected from these licensed and admitted companies. As necessary, we market our client's accounts.

We negotiate with underwriters to get the best terms and prices for our clients. Finally, we make sure that we comply with and are aware of state and federal regulation requirements.

Insurance is a pooling of your resources with other insureds and a promise to pay you if you have a loss. Its guiding principle is utmost good faith. Insurance is a strong financial agreement between you the surveyor, us the broker and the insurance company, all working together to keep you sound, safe, and solvent.

What to Expect

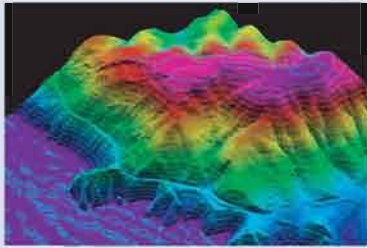
Over the next year or two, as the economy readjusts itself, expect some insurance premium increases. But as the economy picks up and your business improves and insurance companies have more capital to invest again, insurance prices will go down.

Like the stock market, insurance prices go up and down. It's often difficult to predict when and how much. ❖

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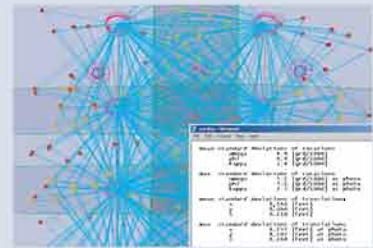
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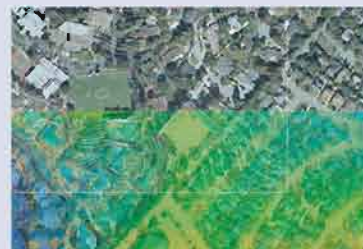
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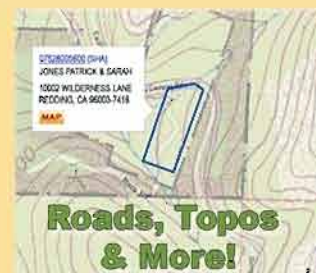
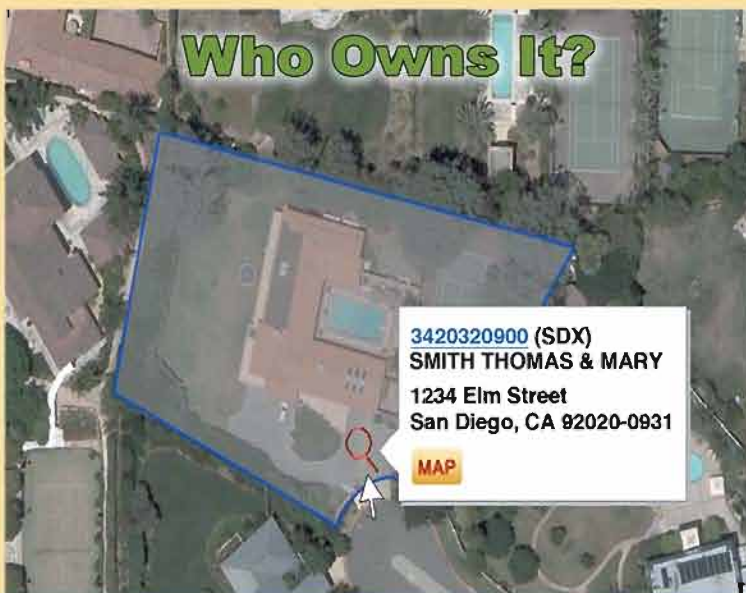
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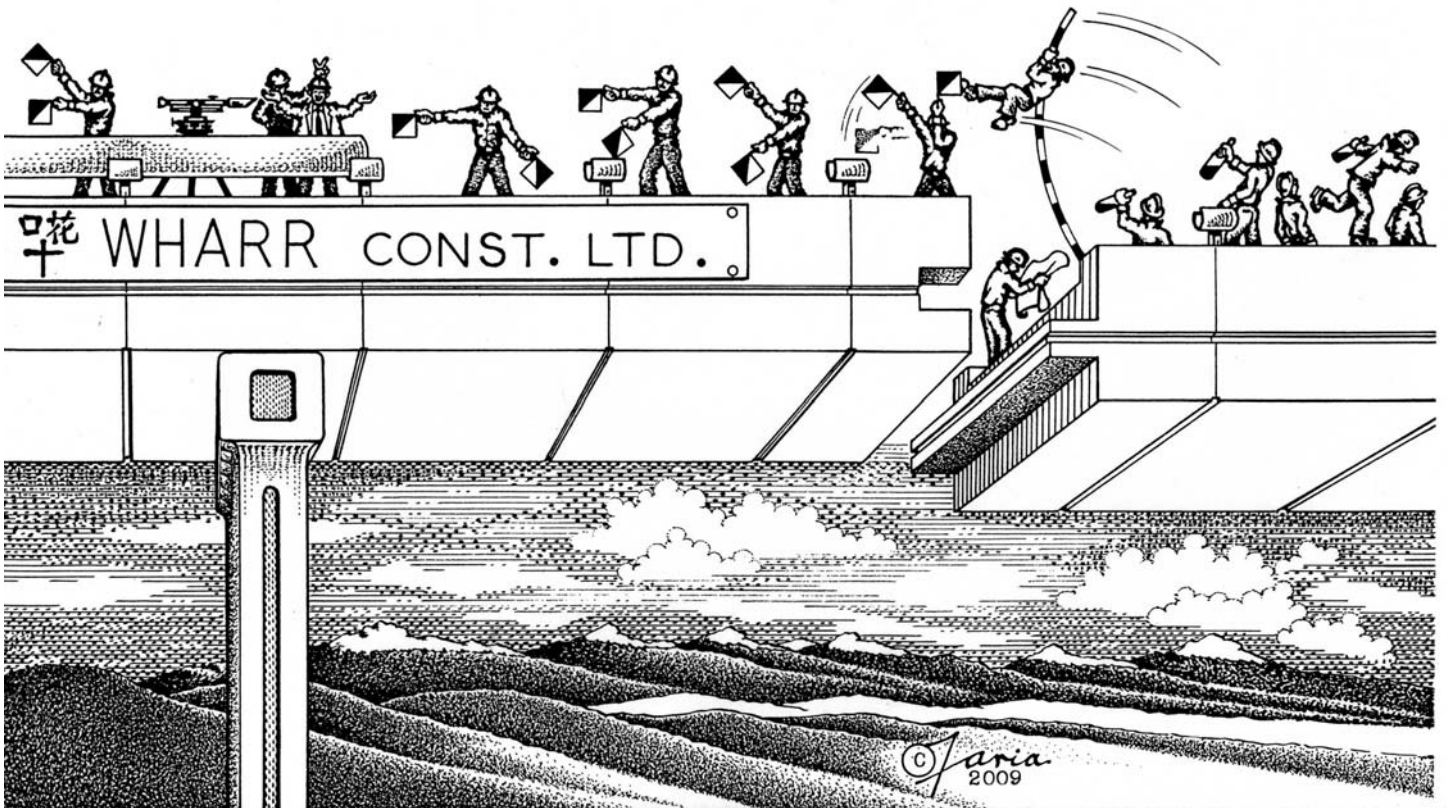
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