



**2007 Kachina Chapter Executive Board**

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**Region 1 Vice Chair:**  
Chris Banks, SR/WA  
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**WANTED**


**CANDIDATES** to run for Chapter Offices for 2008. We also need a 3 year PDC candidate. Please contact Chris Banks, SR/WA at 602.236.8175 or chris.banks@srpnet.com or for additional information.


Nominations will be taken from the floor at the August Luncheon.

**July Board Meeting & Seminar Meeting**

 Wednesday, July 11, 2007

 4:45pm

 3rd Floor Conference Room

 Az State Land

Confirm your attendance with Caroline at carolinet@acqsl.com

**AUGUST LUNCHEON**

**WHEN:** Tuesday, August 7, 2007      **TIME:** 11:30am - 1:00pm  
**WHERE:** Embassy Suites Hotel / 2577 W. Greenway Road / Phoenix, Arizona 85023 / 602.375.1777

**MENU:**

- Chef's choice of Soup
- Salad Bar to include: Mixed Greens; Sliced Mushrooms; Beets; Carrots; Cherry Tomatoes; Black Olives; Shredded Cheddar Cheese; Bacon Bits; & Croutons
- Assorted Salads to include: Tuna, Chicken & Egg
- Freshly Baked Deli Rolls, Breads & Croissants
- Fresh Seasonal Fruits and Berries
- Assorted Pies & Cakes
- Coffee, Decaffeinated Coffee, Iced Tea & Water

**COST:** \$25.00 per person, members & guests. Please have exact change or your check made out to "IRWA Kachina Chapter 28"

**RSVP DEADLINE:** 5:00pm, Thursday, August 2, 2007

**PRESIDENT'S MESSAGE**  
Caroline Tillman, R/W-RAC, Chapter President



All Chapter 28 Members would have been proud of our one and only “Doc Sterling”. Doc masterfully worked the crowd at the Annual Education Conference in Sacramento last month to raise over \$7,000.00 at the live auction for the Jim Struble bobble head. Actually I’m thinking it was over \$8,000.00...it was truly amazing!!! Not only did he manage to auction off this odd looking bobble head thing for big bucks, but he also modeled race car jackets and a leather Harley Davidson vest!

Next years Annual Education Conference annual conference in Austin, Texas looks like it is going to be a great time as well. They put on quite a show in Sacramento, so I can only imagine what the real show will be like next year.

Well our Educational Seminar on September 5, 6 & 7 is shaping up well. Everyone should have received the registration form by now. If not, it is available on the chapter website. If any of your agencies or firms have items they would like to contribute for the Goody Bags please contact Cate Chamberlain.

The newest Chapter SR/WA's with Mark Keller, SR/WA [center], PDC Chair



Pat Mertz, SR/WA   Mark Keller, SR/WA   Rob Sachs, SR/WA



## What's Happening.....in Region One

Chris Banks, SR/WA, Region 1 Vice-Chair

Well, another International Conference has been held and it was a success. Sacramento was a nice place to visit. I was surprised at how much work is involved with being Vice Chair. I had meetings every day except Tuesday morning. I took full advantage of the break and did some "sightseeing" in the Outlet Mall in Vacaville.

By the way, for those of you who don't already know this, I lived in Vacaville for a short time in 1970 when my husband was stationed at Travis AFB. Vacaville was the home of the Shilling Spices plant. Everything I hung out on the clothes line smelled like onions and garlic that year. Also, the prison where they are keeping Sirhan Sirhan, is in Vacaville (in case you are too young to remember - Sirhan is the man who shot and killed Robert Kennedy).

There were 2 issues brought up at the Board of Directors Meeting that generated strong opinions. The first was a proposal regarding "at large" membership. Voting on this issue was postponed to allow a better definition of how far away a member should be from a chapter before being considered a "member at large."

The 2<sup>nd</sup> issue concerned the performance review of the International Executive Committee and who should perform this review. Also at issue was the development of a procedure to follow when doing this review. There was a heated discussion and the decision on this issue was also postponed. This was the most spirited Board Meeting I have ever attended.

The city chosen for the 2012 Conference was chosen by majority vote. Three cities had put in a bid to host the Conference - Los Angeles, California, Reno, Nevada, and Seattle, Washington. Seattle Washington won the bid. Our 2008 Conference will be in Austin, TX, 2009 will be in Indianapolis, IN, 2010 will be in Calgary, 2011 will be in Atlanta, GA and 2012 will be in Seattle, WA.

There were quite a few Chapter members at the Conference. I promise - we all behaved ourselves and made our Chapter proud!



From 1986.....

Recognize anyone?

## Property rights vs. public improvements

From 'The Arizona Republic' on July 5, 2007  
Byline: Jahna Berry with Katie Nelson contributing

A new state law billed as a property rights safeguard has dealt a blow to residents and city leaders who want to save old neighborhoods, create shopping districts or influence what is built in their communities.

Little in Proposition 207 dealt with eminent domain: the power cities have to force property owners to sell.

Arizonans are now finding out that the measure severely limits cities' power to change land use, a crucial tool that helped create signature Valley neighborhoods such as Mill Avenue in Tempe, the Encanto historic district in downtown Phoenix and the Esplanade at 24th Street and Camelback Road.

Similar proposed projects across Arizona face years of delay because cities must get property owners to sign legal waivers to avoid lawsuits.

Supporters say the law is doing what it was designed to do: It levels the playing field so cities can't change land use without getting the OK from individual property owners.

Critics say the law makes it extremely difficult to create historic districts and other special areas within cities because virtually every affected landowner - even if hundreds of properties are involved - must agree to the change.

Consider:

- Grand Avenue shop owners in Phoenix who want to create a special business district must persuade 1,300 landowners to sign the waiver.
- Phoenix's \$900,000 plan to bring shade and pedestrian-friendly development to downtown could be delayed two to three years or longer because it involves about 2,000 property owners, the city says.
- The law is likely to sink efforts to preserve Tempe's oldest neighborhood.
- Flagstaff is bracing for lawsuits over a historic district that could protect buildings linked to its founders.

"The original thought with [Proposition] 207 was that it was an eminent-domain bill," said Michael Kerski, Flagstaff's community investment director. "I think a lot of people were surprised it was a zoning bill."

Proposition 207 campaign ads focused on property owners who feared the government would force them to sell their land by claiming eminent domain to clear the way for new development. There was little talk about the most controversial part of the initiative, critics said: possible lawsuits and expensive payouts to landowners. In November, Proposition 207 won by a landslide. It got 65 percent of the vote.

Under the new law, owners must be compensated if a city acts without their OK and the move hurts their property values. When owners sign Proposition 207 legal waivers, it helps cities avoid lawsuits.

Phoenix narrowly avoided a Proposition 207 lawsuit earlier this year. In April, the city repealed a historic district when an apartment complex owner threatened to sue for \$40 million.

Although Proposition 207 applies only to decisions that hurt land values, gun-shy cities, including Phoenix, are asking for waivers for many zoning and other changes.

In theory, a homeowner could argue that almost any city decision, even one that he or she requested, made their land less valuable, Deputy City Manager Cynthia Seelhammer said.

If residents want to push for a historic district or if a city wants to rezone a neighborhood, they must go through a complex process. Each owner must OK the change, even if thousands of properties are involved. Otherwise, the city risks an expensive court battle.

Some cities are abusing the waivers, said Timothy Sandefur, an attorney for the Sacramento-based Pacific Legal Foundation, a group that advocates for property owners. Owners shouldn't have to sign away rights so the city will grant minor requests, he said.

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## Property rights vs. public improvements

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Byline: Jahna Berry with Katie Nelson contributing

"Government is always in a unique position to put pressure on property owners," he said.

Beatrice Moore, a downtown Phoenix landowner, wishes she had never signed a petition that helped get Proposition 207 on the ballot.

### 1,300 waivers

Buoyed by monthly First Friday artwalk crowds, Moore and other Grand Avenue owners have been working for two years to lay the groundwork for a business district.

The zoning change would encourage galleries, cafes, beauty shops and other small businesses to sprout in older buildings, supporters say.

The three-year-old Tilt Gallery is successful but can stay open only a few days a month, co-owner Michelle Craven said.

"It would be open seven days a week if Grand [Avenue] developed different kind of businesses," Craven said. "You need regular foot traffic."

But because Phoenix is worried about potential Proposition 207 lawsuits, the city asked Moore and other owners to help get notarized legal waivers from each of the 1,300 owners in the area.

Plus, each owner has to file paperwork with the county and pay a \$9 fee.

The added bureaucracy is a huge hurdle to create the Arts, Culture and Small Business Overlay.

Those bureaucratic hoops also may hurt the Phoenix effort to bring shade, sidewalk cafes and miniparks downtown. The Urban Form project, which has cost \$900,000 so far, would affect 2,000 properties.

That could mean getting 2,000 waivers, said Dean Brennan, Phoenix principal planner.

The waivers could delay the effort for years or force the city to adopt the plan in small patches. If the city doesn't have to get waivers, the Urban Form changes could be put into place as early as the end of the year, Brennan said.

Big planning projects work best if all the owners have to play by the same rules, Brennan said.

Under Proposition 207, owners can refuse to rezone, creating "holes" that undermine the effort to keep or create a cohesive look for a special neighborhood, Brennan said.

### Tempe plan rejected

Citing Proposition 207, a Tempe panel earlier this month shot down a historic district in the Maple-Ash neighborhood. A city panel advised the City Council to deny the designation, and a final vote is expected later in the month.

One Tempe property owner predicted historic designation will devalue his property by 30 to 50 percent.

"It would make an intolerable situation where I would be forced to sue the city through Proposition 207," said John Dickson, who owns land in the area.

Other owners near Grand Avenue, who are confused about the waiver's legal language, fear the waivers may give the city the right to take their property, said Moore, a Phoenix business district booster who has tried to sway her neighbors to sign the waivers.

Last year's Proposition 207 campaign struck a sensitive chord in the Valley, which has seen bitter legal battles between private-property owners and cities, which wanted to use eminent domain.

Mick Darcey, who owns the Tilt Gallery's property, supports the Phoenix business district but says he is a strong supporter of Proposition 207.

"The government has a big incentive to use the land to maximize tax benefits," said Darcey, who lives in Tempe.

Continued on next page....

## Property rights vs. public improvements

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He said there have been several eminent-domain clashes in Tempe, including a 2005 legal battle between the city and merchants in the path of the Tempe Marketplace development.

The developer eventually reached out-of-court deals with the owners.

One of the groups that supported Proposition 207 downplayed the waiver issue. Property owners should have the right to veto land-use changes that affect their property, said Steve Voeller of the Arizona Free Enterprise Club, one of the organizations that supported the initiative.

"That shows that Proposition 207 is working," Voeller said. "You have some owners, who, because of the way that it would affect their property's values, don't want the historic tag."

Until a test case hits the courts, cities will continue to be exceedingly cautious, Proposition 207 supporters and critics agree.

### Flagstaff is being tested

Flagstaff residents started a grass-roots effort to protect one of the oldest areas in the city.

The oldest homes date to the 1800s and others were built with ammunition boxes, said Michael Kerski, Flagstaff's community investment director. Others are from the 1920s or are more recent.

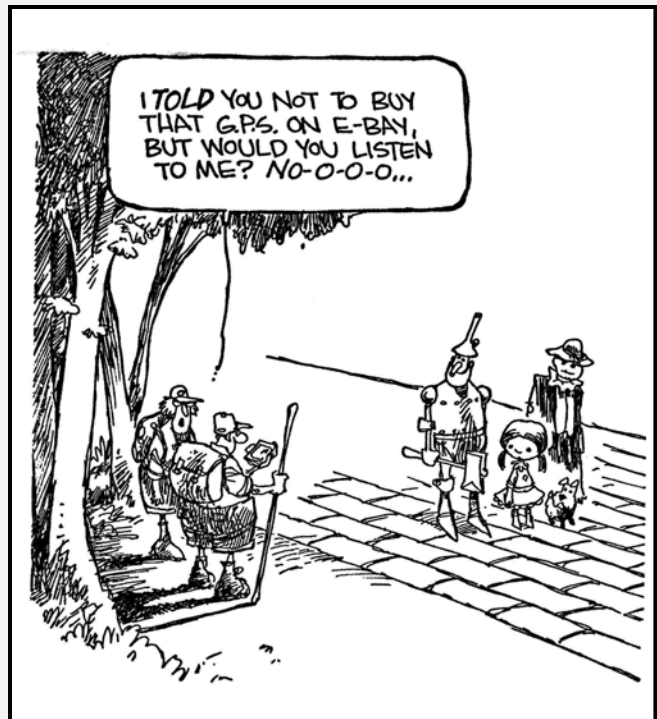
Residents lobbied the city to protect the area because homeowners had replaced vintage buildings with two-story guesthouses that loomed over neighbors. The historic district will affect more than 200 properties.

The Flagstaff City Council is expected to give final approval to the historic area this month, over the opposition of some residents who don't want restrictions.

Last week, the conservative Pacific Legal Foundation sent a claim, the initial step toward a lawsuit, to Flagstaff officials on behalf of four property owners who oppose the district.

They have asked Flagstaff to compensate them for nearly \$400,000 in lost property value.

"They are not allowed to do what they would otherwise be allowed to do," said Timothy Sandefur, a foundation attorney who also represents the Flagstaff residents.

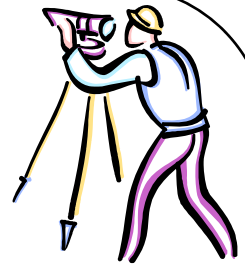


A little GPS humor provided by Gregg Tuttle.

Please turn the page and read his Surveyor's Corner—always a source of information.



Gregg Tuttle, Manager  
SRP Land Department  
Surveys Division



## Surveyor's Corner

**“Gregg – In last month’s article (“Geocaching”) you briefly discussed people using handheld GPS units. What is the accuracy of the “typical” GPS unit?”**

There are so many different hand-held GPS units on the market, I do not know if there really is any such thing as THE “typical” unit any more.

One way to tell is to read the instruction manual (HA! J - just kidding, who has time for that!!)

Another way is to just look at the readout display for the latitude & longitude. In many of the “low-cost” instruments, it will display it something like:

**33° 26.667' N      111° 57.022' W      1157'**

That is 33-Degrees, 26.677-Minutes, NORTH; 111-Degrees, 57.022-Minutes, WEST; and 1157-feet (“above mean-sea-level”); -- latitude, longitude, and, “height”.

Therefore, the horizontal coordinate readout displays is in degrees, minutes, and, decimals of minutes, to three digits right of the decimal-point. “Heights” are shown to the near whole foot unit.

NOTE: A “ballpark” estimate of conversion from seconds of latitude and/or seconds of longitude, here, in central Arizona, (Maricopa County), is APPROXIMATELY 101-ft per second of arc (+/-).

So, a tenth of a second is APPROXIMATELY 10.1-FT (+/-);

a hundredth of a second is APPROXIMATELY 1-ft (+/-);

a thousandth of a second is APPROXIMATELY 0.1-ft (+/-);

one-ten-thousandth of a second is APPROXIMATELY 0.01-ft (+/-); and,

one-hundred-thousandths of a second is APPROXIMATELY 0.001-ft (+/-).

The GPS unit used in this discussion was actually used to obtain the latitude and longitude (geospatial horizontal position) coordinates on a point here at SRP that has a position known to an accuracy of just a few thousands of a foot (!), or, to about one-hundred-thousandths of a second (!!).

Remember that this GPS unit shows a display in Degrees, Minutes, & Decimal-Minutes, (to three digits right of the decimal of a minute.)

One second is equal to 0.0167 of a Minute.

One-thousandth, (0.001), of a Minute is equal to 0.06-seconds; or, about 6-ft (+/-), *here in Maricopa County*.

So the precision of this particular handheld could never be more than: +/- 6-ft, (\*\*IF\*\*) all other factors were “perfect”.)

N 33 Degrees 26.667 Minutes = 33° 26' 40.02" N;  
(which was about 14.6-ft +/- different from the official published results).

W 111 Degrees 57.022 Minutes = 111° 57' 01.32" W;  
(which was about 4.7-ft +/- different from the official published results).

The overall difference is approximately 15-ft (+/-) from the published HORIZONTAL coordinates. (That is very probably well within the manufacturer’s caveats for horizontal determinations.)

NOW, As to the VERTICAL information, this “typical GPS unit displayed 1157 (ft) “above sea level”.

One has to make a presumption, as to whenever the phrase “above sea level” is used, in that it is (*probably*) referencing the National Geodetic Vertical Datum (NGVD) of 1929 (NGVD-29); (which up until 1979 was referred to as the “Mean Sea Level Datum” of 1929).

Continued on next page....

## Surveyor's Corner continued

Also, (without additional documentation from this GPS handheld unit's manufacturer, to the contrary), one might presume that the numbers referenced were for an "ORTHOMETRIC" Height (commonly called: an "elevation").

**HOWEVER, (CAVEAT) – Warning/Warning** = "low-cost" GPS units, per se, do **NOT** measure "elevations", --- they display ELLIPSOIDAL HEIGHTS.

NOTE: ELLIPSOIDAL HEIGHTS are **NOT** ELEVATIONS !!!

Ellipsoidal Heights referenced the mathematical ellipsoidal datum models of the earth's surface, (as created for GPS-like horizontal positional calculations.)

Orthometric Heights, ("Elevations") take into account the GEOID surface, (the gravity field), of the earth, (at its surface); -  
NOTE: you would **NOT** want to design any gravity fed water delivery facilities, (such as SRP's canals & lateral water transmission systems), with Ellipsoid Heights; you would need Orthometric Heights, ("Elevations"), and those would need to be within an accuracy of +/- 0.1-ft, vertically, per-mile, (minimum), for reliable engineering design work, and to within +/- 0.35-ft per mile for construction scenarios.

The conventional-wisdom "ballpark" estimate, as to GPS derived vertical "heights", is that they are, (at a minimum), 3X, (three-times), more imprecise than the horizontal coordinates;  
in that **\*\*\*IF\*\*\*** your GPS handheld could (in fact) consistently derive your location to +/- 6-ft; then, the vertical information may be as good as +/- 18-ft in the vertical;  
(and, that does NOT factor in the differences between NGVD-29 and NAVD-88; and the Ellipsoidal versus Orthometric "Heights").

An ellipsoidal height determined by GPS observation is referenced to NAD-83, (North American Datum 1983), a horizontal (ellipsoidal) reference frame, so to get to a Vertical reference datum, it is necessary to make additional computational adjustments so as to end up on the North American Vertical Datum of 1988, (NAVD-88), which is, (in the Phoenix metro area), about (+/- 1.5 to 2+ Feet) "higher" than similar values expressed referencing the NGVD-29.

Our "Low-cost" GPS handheld unit, displayed 1157-ft versus a precisely known and published elevation of 1094-ft – is a +63-ft vertical difference.

So, as you can see, a good "rule of thumb" is that you should also allow about +/- 100-ft for the vertical when "GPS-ing" with any unit that is not of "surveying-grade" quality. This is important if you need to determine your elevation relative to, a USGS "quad-map".

**Please allow +/- 30-ft horizontally and +/- 100-ft vertically when using a "low-cost" GPS unit.**

*And now, some of you may understand why those "professional surveying grade" units are still in the \$50K range, as they can determine horizontal coordinates in the centimeter to sub-centimeter range, and vertical "elevations" in the +/- 0.1-ft range of ACCURACY (versus precision).*

I hope this "brief" summary about GPS capabilities has proven enlightening.

**Well, that's it for this issue from the "Surveyor's Corner."**

If anyone has feedback or comments, please feel free to share them.

As always, I am interested in the opinions from, the readers of the Kachina Chapter 28 Newsletter.

Please keep sending in those questions.

**Until next time, Thanks for reading about land surveying & land surveyors. –**

**Gregg Tuttle, AZ/RLS # 11121; Manager, SRP LAND-Surveys Division**