

## Meeting Notes

### Nevada State Mapping Advisory Committee (SMAC)

1:30 PM; Monday, May 14, 2007

at

Harveys Lake Tahoe Casino and Resort  
Conference Facility

Meeting held in conjunction with the 2007 NGIS Annual Conference

18 U.S. Highway 50

Located on Highway 50 at Stateline Avenue  
Stateline (South Lake Tahoe), Nevada

For further Information contact Ron Hess, Nevada Bureau of Mines and Geology (NBMG),  
(775)784-6692 or Email: rhess@unr.edu

**1:30 PM:**        **OPENING REMARKS** and Welcome by Jon Price (NBMG), Committee Chairman

#### **OLD AND NEW BUSINESS**

**Status of the National Agricultural Imagery Program (NAIP) Nevada Cooperative Project 2006**, by Tom Sturm (U.S. Geologic Survey) and Ron Hess (NBMG).

The Farm Service Agency (FSA) NAIP contract for Nevada is over. The attached graphic shows the areas in southern Nevada around the Nellis Air Force Range and the Nevada Test Site that were not covered. These areas were not flown due to flight restrictions imposed by the Air Force at the time. Various Nevada NAIP partners are exploring different ways to obtain coverage in the missed areas and merge the imagery with the NAIP imagery to complete coverage of the areas outside of Nellis and the Test Site.

In addition to the natural color imagery obtained through the NAIP project, several agencies, including the Southern Nevada Water Authority, Washoe County, and the Fish and Wildlife Service, purchased an add-on contract to also capture color infrared imagery (CIR) over Clark, Lincoln, White Pine, and Washoe Counties. Due to a color balance problem with some of this imagery, part or all the CIR may not be accepted for distribution.

All the natural color, one-meter NAIP digital orthophoto quarter quad (DOQQ) geotiffs are now available for download from the Keck Web site ( <http://keck.library.unr.edu/> ). The Mr. Sid-compressed county mosaics have been on the same site since January. If you have any problems downloading the images, please contact Ron Hess at 775-784-6692 or Duncan Aldrich at 775-682-5569. With funds granted from the U.S. Geological Survey, the University of Nevada, Reno, (UNR) Library system purchased the additional disk space needed to hold and distribute the NAIP imagery. Currently the new NAIP imagery (geotiffs and mosaics) take up 1.2 terabytes of space. There is currently ample space to serve the additional image products, NAIP 7.5-minute and 30-minute quad mosaics, that the Nevada Department of Transportation (NDOT) will be producing. The UNR Library system houses and supports the Keck Web site as part of its ongoing mission to serve the University's academic, research, and public users.

We have had requests from Google Earth and Microsoft for copies of the Nevada NAIP imagery. Ron Hess will make arrangements to transfer copies of the imagery on portable drives to them. They will make the imagery available free of charge to users of their mapping search engines.

There were questions about the availability of stereo pairs (or if stereo pairs could be developed) from the NAIP imagery. It was also asked if color infrared imagery could be ordered from the vendor. Those interested in this information should contact the vendor that flew the Nevada NAIP. The contractor for the Nevada NAIP project is Northwest Geomatics. Their contact information is:

212 - 5438 – 11<sup>th</sup> Street N.E.  
 Calgary , Alberta  
 T2E 7E9, Canada  
 E-mail: info@nwgeo.com  
 Phone: (403) 295-0694; Fax: (403) 295-2444  
 Toll Free Phone: (800) 661-6782; Website URL: <http://www.nwgeo.com/>

NAIP used existing USGS Digital Elevation Model (DEM) data in the processing of the orthophoto product. It was pointed out that the DEM data are 20 or more years old in many areas of Nevada. In active mining and urban areas, the DEMs no longer represent accurate elevation information, and the NAIP DOQQs could be erroneous in these areas. It was suggested that we address this problem with some type of program to develop new DEM data in the areas where it is out-of-date. These DEMs should be fixed prior to the next NAIP mission, which is currently scheduled for 2011. If the Imagery For The Nation (IFTN) initiative is funded, a new NAIP mission may be possible before 2011.

A couple of possible solutions to the DEM problem were suggested: the use of the Space Shuttle Radar Topography mission data and/or the evolving elevation or LiDAR for the nation initiative.

The chairman thanked the agencies that took part in helping to fund the 2006 Nevada NAIP mission. Without their support there would not have been a Nevada NAIP mission.

### **Report on Proposed Geographic Information System (GIS) Programs and Positions Within State Agencies**, by Holly Smith (Nevada Division of State Lands).

Currently, the Senate bill that would authorize a GIS coordination position, with training funds, in the Nevada Department of Conservation and Natural Resources is in the State Legislature. An additional Assembly bill that would fund a significant GIS data conversion project in the Nevada Division of State Lands is also in the State Legislature. Both bills have had positive support but are currently on hold until other statewide budget issues are resolved.

### **Update on U.S. Geological Survey's National Hydrography Dataset (NHD) in Nevada**, by Tom Sturm (USGS)

The 1:24,000-scale NHD has been a SMAC priority for several years and all but two basins are complete (see attached graphic). These two basins are expected to be finished and available by September.

The USGS will hold one or two workshops on the NHD in the Reno-Carson area sometime after the fire season this year. The data in the NHD are based on the USGS 7.5-minute topographic maps and needs revision, updating, and ongoing maintenance in some areas. These workshops will address these issues. The USGS is looking for active participants to become NHD stewards for the Nevada data.

### **Report on Ongoing Projects at the Nevada Department of Transportation (NDOT)**, by Eric Warmath (NDOT)

#### **NAIP mosaics**

- NDOT has all the tiffs available from the NAIP photography taken in 2006. Compression will be Mr. Sid and lossless.

- A plan to mosaic and compress the 7.5-minute and corresponding NDOT 30-minute atlas blocks has been established and some work has begun. These images will be made available to partners first and will be passed to UNR for inclusion on the Keck Web site upon completion.
- Priority will be given to urbanized areas due to the more rapid change associated with these areas and the timeliness of the information.
- NDOT is committed to including any NAIP gap filler data collected under separate contract to the mosaics if the information is publicly shared.
- NDOT will use the Clark County Fall 2006 Imagery to fill in part of the area missed by NAIP around the Las Vegas metro area. However, those images will not be released until USGS gives us the ok to put the data in the public domain per their agreement with Clark County.

NDOT is willing to share its portable drives with partner agencies unable to download the NAIP data themselves from the Keck FTP site as time permits. The volume of the two drives is about 1.3 terabytes of data.

#### **NDOT City and Quad mapping program**

- 16 city maps in the last 12 months, including Incline Village, Carson City, Dayton, Kingsbury/Zephyr Cove, Hawthorne, Virginia City, Austin, Indian Hills, and Genoa.
- Maps of all county seats are expected to be completed this year except Reno and Las Vegas.
- Major Lincoln County towns to be completed this year are Panaca, Pioche, Alamo, and Caliente.
- Two 30-minute quad maps were completed in the last 12 months (Ely area) and two additional ones were updated as of 5/16/07 in central Nye County.
- 3 to 5 more 30-minute quad maps are planned this year in Carson, Lincoln, and Nye Counties.

These maps are available for a small cost (size dependent) as hard copies at NDOT or are available as .PDF files on the NDOT Web site. They are available as geo-referenced files for our business partners.

**NDOT has GIS data layers available**, some to the general public and others to NDOT data sharing partners. Public datasets are considered to be those that are stable, have been updated or are unlikely to be modified in the near term, and have associated FGDC compliant metadata. Data sharing partners are federal, state, and county agencies with whom NDOT has an agreement or an understanding for the free exchange of digital data.

Updates available to the public include statewide coverages of water bodies and streams, December 2006 updates to these coverages are based on NAIP imagery. Updated highway rest areas, State park routes, and scenic routes are also available. Datasets available to data sharing partners include milepost marker, interchanges, railroads, communication towers, cultural features (public facilities), historical markers, and county line coverages. Many of these coverages can be found at the NDOT ftp site: <ftp://ftp.nevadadot.com/public/GIS-2007>.

NDOT survey monument information is on the Web at: [http://www.nevadadot.com/reports\\_pubs/LoIS](http://www.nevadadot.com/reports_pubs/LoIS).

NDOT traffic count information is available at: [http://www.nevadadot.com/reports\\_pubs/TRINA](http://www.nevadadot.com/reports_pubs/TRINA).

There was discussion about upgrading the Survey Monument Location Information System (LOIS) to include access to footprints and dates for NDOT aerial photography, photogrammetric mapping and terrestrial Light Detection and Ranging (LiDAR) data. These data are available to our partner agencies for free but there is a cost to the public and non-partner entities. Data for proposed projects that might lead to land speculation (and potential increased construction costs) are not released outside the Department.

### **Call before you dig program**

NDOT has been approached by USA North, a nonprofit organization who does “call before you dig” services. They and their contract mapping firm, Sentinel USA, want to form a partnership with the state and local entities to create a statewide dataset that can be used for the purposes of these services. This corresponds with NDOT’s needs for mapping, safety, and tax fund audit activities. The data will not include any proprietary data (TeleAtlas, etc) and would be freely shared by all participants. This has some serious logistical issues needing resolution, including common attribution and maintenance.

### **Differential Global Positioning Service (DGPS)**

This is a valuable national infrastructure program that may get cancelled at 90% complete. Nevada, Idaho, and Utah are the states most poorly supported by this system, which was originally designed for water navigation.

The FAA Wide Area Augmentation System (WAAS) was not designed for and does not have the capability of offering the level of accuracy that DGPS and HDGPS does. Its level of correction is only good to 1 meter. The system was designed to get planes to airports not to put them in the hangar.

High Accuracy DGPS (HDGPS) could potentially replace local high accuracy systems and provide 1- to 2-centimeter accuracy nationally if completed and existing stations were upgraded. Currently it is capable of decimeter precision. With atmospheric correction information, it could potentially reach survey quality. This system is valuable in automated transportation systems, precision mining, and agriculture, to name a few. It would also potentially allow local high accuracy systems to be dismantled in the future and the operating and maintenance costs to be reallocated for other local uses.

On the other hand, NDOT has been participating in local real time High Accuracy Network partnership activities in northern and southern Nevada. NDOT has worked or is working to establish sites in Fallon, Carson City, Gardnerville, and Yerington, which are tied in with Washoe County, and in Glendale and Searchlight, which are tied in with the Las Vegas Valley Water District (LVVWD).

Expansion of the network to Lovelock or Hawthorne and up U.S. 93 in Lincoln County to Ely is being considered. Dave Hamelin is handling this for NDOT and Skip Harness is handling it for LVVWD.

In regards to DGPS and HDGPS, SMAC’s support is needed in requesting that the U.S. Department of Transportation (USDOT) fund and complete the program in Nevada. It seems the top managers at the USDOT are trying to kill this program. About 3 years ago they estimated they could have the network finished for about \$20 million, and about that much again would upgrade the whole thing from 1-meter to 1-decimeter accuracy nationwide. Currently, Nevada is in the worst shape but Idaho and Utah are not doing much better.

Completion of the network will improve many activities from safer transportation to precision agriculture and even the mining industry because this level of accuracy supports precision heavy equipment operations to a much higher level of accuracy in real time. Other work in atmospheric correction would, in the not too distant future, enable the system to possibly be able to do survey grade (1-2 cm) real time correction as part of a national program instead of all the little local/state government partnerships that currently exist and that do not provide national coverage. This level of accuracy cannot be attained using the Wide Area Augmentation System (WAAS) system developed by the FAA for airline navigation.

NDOT set aside some partnership money two years ago, but the Federal Government has not been able to come up with its side due to budget cuts. NDOT also had worked with them on site selection for the proposed "Jacks Creek" site. NDOT had found a good location for them about one mile north of the NDOT Northfork Maintenance Facility and was planning to assist them in evaluating the site last fall, but due to schedule problems on their end and then Federal budget issues they did not come out. This is a national infrastructure item that needs support. Time is short to save this program before it gets cancelled. A contact in DC has indicated that the program might not be funded at all next year and that includes maintenance for the existing system that does cover parts of Nevada now.

At the end of the report Eric made the motion "**For the Nevada State Mapping Advisory Committee to actively support the DGPS real time corrections program for Nevada and the Nation.**" It was second by Roy Hellon. The motion passed unanimously.

In discussion it was decided that this resolution should be put forward to the appropriate authorities that have control over or can influence this program. The purpose would be to complete the network in Nevada. Jon Price will work with Eric to see that this resolution gets to the appropriate people and agencies.

If you have questions about these NDOT programs you can call Eric Warmath at 775-888-7265.

Tom Sturm discussed the height modernization program that may be able to put funds into Nevada for similar purposes.

### **Information Report on RAMONA, by Tom Sturm**

RAMONA is a GIS inventory system. RAMONA was developed to inventory the GIS data holdings of tribal, state, and local governments and their partners. It provides one consistent platform for the nation that is designed to work in concert with the Geospatial One Stop (GOS) Portal, but it can also be customized for use by each state.

Tom would like to get more Nevada data into RAMONA. He is offering to work with individuals or agencies to help them input their data and in some cases he would be willing to input the information himself. RAMONA only functions as an inventory/indexing type system. The information it contains is only descriptive about the various coverages. The participating agencies still maintain full ownership of their data.

### **Open Discussion and Comments**

Jon Price announced that the Geologic Mapping Subcommittee of the SMAC will hold a meeting on Wednesday, August 15, 2007 at the Nevada Bureau of Mines and Geology conference room.

NBMG is using InSAR data to study and monitor the effects of groundwater pumping, mine dewatering, geothermal power production, and ongoing tectonic deformation.

The Imagery For The Nation (IFTN) initiative is still moving forward. The original initiative requested complete Federal funding for NAIP to be flown annually over the lower 48 states and would pay for 1-foot imagery every 3 years for areas that have a population density of more than 25 people per square mile. They are also looking into modifying the 1-foot imagery formula by changing it to some form of cost-share program. It still has not been funded. If it is funded, the earliest that we would see funded imagery will probably be 2009. All imagery captured under this program would be public.

### **3:00 PM: MEETING ADJOURNED**

State Mapping Advisory Committee Web Page  
<http://www.nbmq.unr.edu/smac/smac.htm>

Virtual Clearinghouse of Nevada Geographic Information Web Page  
<http://www.nbmq.unr.edu/geoinfo/geoinfo.htm>

If you have questions please contact Ron Hess, Executive Secretary, Nevada State Mapping Advisory Committee at (775) 784-6692 or Email: rhess@unr.edu.

**MEETING ATTENDEES**

Jon Price	NV Bureau of Mines and Geology	775-784-6691/Email: <a href="mailto:jprice@unr.edu">jprice@unr.edu</a>
Ron Hess	NV Bureau of Mines and Geology	775-784-6691/Email: <a href="mailto:rhess@unr.edu">rhess@unr.edu</a>
Eric Warmath	NV Department of Transportation	775-888-7265/Email: <a href="mailto:ewarmath@dot.state.nv.us">ewarmath@dot.state.nv.us</a>
Mark O'Brien	US Bureau of Land Management	775-861-6440/Email: <a href="mailto:mobrien@blm.gov">mobrien@blm.gov</a>
Tom Sturm	US Geologic Survey Mapping Liaison	650-329-4326/Email: <a href="mailto:tsturm@usgs.gov">tsturm@usgs.gov</a>
Holly Smith	NV Division of State Lands	775-684-2727/Email: <a href="mailto:hsmith@lands.nv.gov">hsmith@lands.nv.gov</a>
Matt Dillon	NV Division of Water Resources	775-684-2856/Email: <a href="mailto:mdillon@water.nv.gov">mdillon@water.nv.gov</a>
Mike Visher	NV Division of Minerals	775-684-7044/Email: <a href="mailto:mvisher@govmail.state.nv.us">mvisher@govmail.state.nv.us</a>
Malcolm Adkins	Baker	510-701-7331/Email: <a href="mailto:madkins@mbakercorp.com">madkins@mbakercorp.com</a>
Ryan Cooper	USDA NRCS	775-857-8500/Email: <a href="mailto:ryan.cooper@nv.usda.gov">ryan.cooper@nv.usda.gov</a>
Joe Laravie	Consultant	775-777-8223/Email: <a href="mailto:jaravie@frontiernet.net">jaravie@frontiernet.net</a>
Preston Denney	Churchill County	775-423-7627/Email: <a href="mailto:planning-gis@churchillcounty.org">planning-gis@churchillcounty.org</a>
Thomas Lo	Washoe County	Email: <a href="mailto:tlo@washoecounty.us">tlo@washoecounty.us</a>
Elizabeth Ashby	NV Div. of Emergency Management	775-687-0314/Email: <a href="mailto:eashby@dps.state.nv.us">eashby@dps.state.nv.us</a>
James Branch	UNR student	775-324-2505
Karl Yonkers	NV Department of Transportation	775-888-7249/Email: <a href="mailto:kyonkers@dot.state.nv.us">kyonkers@dot.state.nv.us</a>
Jeffrey Schmitz	NV Department of Transportation	775-888-7166/Email: <a href="mailto:jschmitz@dot.state.nv.us">jschmitz@dot.state.nv.us</a>
Roy Hellon	NVARNG	775-887-7284/Email: <a href="mailto:roy.hellon@us.army.mil">roy.hellon@us.army.mil</a>
Mari Mosales	NVARNG	775-887-7287/Email: <a href="mailto:mari.morales@us.army.mil">mari.morales@us.army.mil</a>
Sam Limerick	Z. Inc. (EIA)	775-825-0640/Email: <a href="mailto:samuel.limerick@eia.doe.gov">samuel.limerick@eia.doe.gov</a>
Don Harper	US Fish & Wildlife Service	702-515-5254/Email: <a href="mailto:don_harper@fws.gov">don_harper@fws.gov</a>
Amy Mathie	US Geologic Survey	775-887-7670
Toby Welborn	US Geologic Survey	775-887-7671
Rose Medina	US Geologic Survey	775-887-7620/Email: <a href="mailto:rlmedina@usgs.gov">rlmedina@usgs.gov</a>
Rick Free	NV Department of Transportation	775-888-7245/Email: <a href="mailto:rfree@dot.state.nv.us">rfree@dot.state.nv.us</a>
John Watermolen	NDEP	775-687-9328/Email: <a href="mailto:jwatermo@ndep.nv.gov">jwatermo@ndep.nv.gov</a>
Anna Gilmore	Newmont Mining Corp.	775-635-6658/Email: <a href="mailto:anna.gilmore@newmont.com">anna.gilmore@newmont.com</a>
Art Ehrenberg	Southern Nevada Water Authority	702-862-3783/Email: <a href="mailto:art.ehrenberg@snwa.com">art.ehrenberg@snwa.com</a>
Richard Wells	City of Las Vegas	702-229-6794
Sandra Majewski	Las Vegas Metro Police Department	702-828-5994
Jo Moore	TRC/City of Fernley	775-784-9825/Email: <a href="mailto:gis@cityoffernley.org">gis@cityoffernley.org</a>
Sally Kleiner	Queenstake Resources USA, Inc.	775-722-5294/Email: <a href="mailto:skleiner@jerritt.com">skleiner@jerritt.com</a>
Elizabeth Crouse	NV Bureau of Mines and Geology	775-784-6629/Email: <a href="mailto:crouse@unr.edu">crouse@unr.edu</a>
Jennifer Mauldin	NV Bureau of Mines and Geology	775-682-8759/Email: <a href="mailto:mauldin@unr.edu">mauldin@unr.edu</a>
Paul Hartley	Terrasource	775-856-2913/Email: <a href="mailto:paul@mda.com">paul@mda.com</a>
Phoebe Bender	NV Division of State Lands	Email: <a href="mailto:pbender@lands.nv.gov">pbender@lands.nv.gov</a>

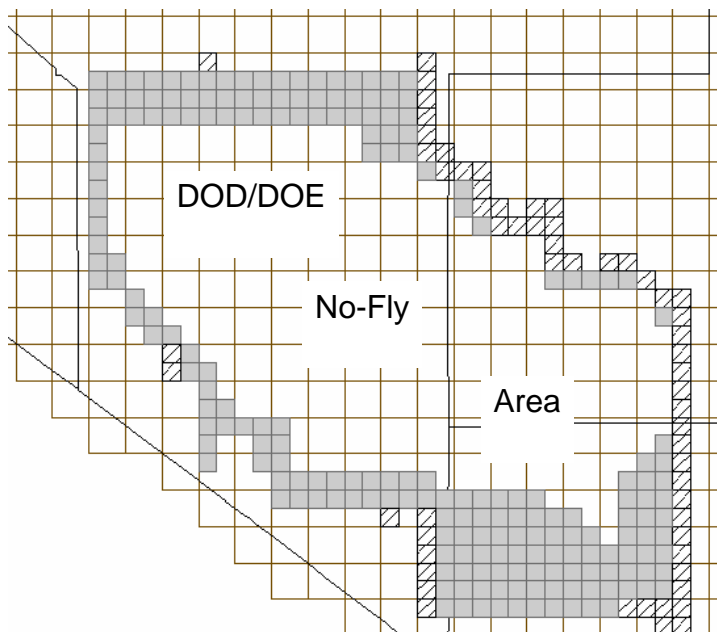


## NV National Hydrography Dataset

### 24K Program Status

- Available
- In Work

## National Agricultural Imagery Program 2006 NV Project



- Not Flown
- Partial Image
- 7.5-minute quadrangles

Prepared by:  
USGS Western Region  
For further information contact:  
Tom Sturm  
tsturm@usgs.gov  
650-329-4326  
Data current as of 5-10-2007