

MEETING NOTES

GEOLOGIC MAPPING SUBCOMMITTEE of the STATE MAPPING ADVISORY COMMITTEE

Wednesday, August 10, 2005

Nevada Bureau of Mines and Geology (NBMG) Conference Room
Scrugham Engineering Mines Building, Room 401
University of Nevada, Reno Campus

1:30 p.m. Welcome and Introductions by Jon Price, Director/State Geologist, Nevada Bureau of Mines and Geology (NBMG).

Jon Price reviewed the history of the State Mapping Advisory Committee (SMAC) and the Geologic Mapping Subcommittee.

Jon and others briefly discussed the Bureau of Land Management Clark County land-exchange program and the NBMG proposal for additional geologic mapping under this program. If approved, it will lead to five new geologic maps, publication of five legacy maps by USGS and academic geologists, and GIS conversion of five geologic maps in Clark County over the next 3 years.

The U.S. Forest Service is also looking at the possibility of developing a geologic mapping project that will have NBMG produce new 1:24,000-scale geologic maps for the Spring Mountains in Clark County.

Chris Henry passed out two lists entitled NBMG Statemap projects and NBMG-GSN Quadrangle Mapping Program projects; both lists are attached. He explained the information contained in the lists and went into detail about the NBMG-GSN Quadrangle Mapping Program.

John Bell has finalized the Wadsworth Quadrangle this year and will finalize the east half of Pah Rah Mountain Quadrangle and the west half of the Nixon Quadrangle in the upcoming year. These map areas are located in the northern part of the Walker Lane, a zone of northwest-striking faults. John proposed mapping the Lahontan Mountains Quadrangle under the upcoming Statemap proposal.

Kyle House is the principal investigator managing the Ivanpah Valley mapping project in Clark County. This is the third year of the three-year project. It is being funded by Statemap, NBMG, the Clark County Regional Flood Control District, and NASA. It covers the Quaternary parts of nine quadrangles in an area of Clark County that will soon see the construction of an airport, followed by commercial and urban development.

Jim Faulds and Chris Henry have been mapping, as part of several different projects, an area 30 miles north and northeast of Reno and west of Pyramid Lake, in the northern extension of the Walker Lane. Some of the mapping and related research in this area has

been funded by Statemap, Edmap, National Science Foundation (NSF), and NBMG. Chris is currently working on the Seven Lakes Mountain Quadrangle.

Jim Faulds is currently finishing up the north half of the Fernley West Quadrangle, which is an extension of last year's work on the Fernley East Quadrangle. Jim is also finishing up the Searchlight Quadrangle in Clark County. He has been involved with some reconnaissance geologic mapping in support of a geothermal power plant development project in the Salt Wells area, Churchill County. He has also done some reconnaissance mapping in the Granite Range area, around Gerlach in Washoe County, which should lead to the release of an open-file report later this year. He is still actively involved in a mapping project at the Northern Hot Springs Mountains around Desert Peak and the Brady Hot Springs in Churchill County. He and Larry Garside plan to propose the Desert Peak Quadrangle as a Statemap geologic mapping project.

John Muntean discussed his ongoing project in the Jerritt Canyon mining district. In collaboration with Queenstake Mining Company, John will be producing a geologic map similar in format to the Carlin Trend Bulletin. The project will take 3 years: the north half will be completed next year, the south half the following year, and the full project with cross sections will be published in the last year. Chris Henry is assisting John with mapping of Tertiary volcanic rocks in the district.

Chris Henry reviewed Steve Castor's and Larry Garside's activity on the Virginia City Quadrangle and Steve and Kyle's work on the Flowery Peak Quadrangle.

Ron Hess reviewed and discussed previously established priorities for new geologic quadrangle maps in Nevada and handed out a summary map, which is attached at the end of these notes, showing approximately 20% of Nevada currently mapped with good quality 1:24,000-scale geologic maps. Jon explained the "high, higher, and highest" priority classification system used on the priority map attached to the board at the front of the room. He also handed around several of the individual layer maps that went into the priority classification.

Areas that have been prioritized generally fall into the areas around Nevada's growing urban centers and the northern Nevada mining centers. The priorities that were developed are used as a guide to influence where new mapping takes place under the Statemap and Edmap programs.

It was suggested that new interest in oil and gas development and in water resources should give more weight in the priorities for eastern Nevada than is currently given. More stratigraphic data for Nevada would be beneficial, particularly in eastern Nevada.

Some concern was voiced about the age of some geologic mapping and particularly about the time and responsibility of mapping updates in regard to fault location information in the Las Vegas Valley area. There was also the possibility of some faults not showing up on the Clark County GIS data that had been previously mapped. John Bell is going to look into this matter further.

Remapping of Reno area faults has not yet been funded. Craig dePolo has tried to secure funds from FEMA for this purpose.

Ron Hess raised the issue of prioritizing or targeting existing, but inferior, geologic maps for replacement in critical areas, such as urban areas. Maps mentioned for possible replacement included the Carson City, Washoe City, and Mount Rose NE Quadrangles.

Jon explained that in the past NBMG has focused on creating new mapping in areas that did not have existing geologic maps instead of producing updated geologic maps in areas that were already mapped.

The ability to tailor geologic mapping products to an end user's defined need, such as landslide or flood hazard maps, was discussed as being a beneficial digital type of product.

New geologic mapping to be proposed for Statemap grants in federal fiscal year 2006 include:

Continuation of the Jerritt Canyon mining district project, John Muntean in collaboration with Queenstake Mining Company.

Stockton Flat Well Quadrangle, Chris Henry and Alan Ramelli. This quadrangle includes part of the Carson River Valley and what is sometimes referred to as the Carson lineament, and is in the Walker Lane.

Fernley West Quadrangle - south half, Jim Faulds. (This was initially proposed at the meeting as the Desert Peak Quadrangle but was changed after the meeting to the south half of Fernley West Quadrangle, due to proximity to Stockton Flat Well Quadrangle.)

Lahontan Mountains Quadrangle, John Bell, John Caskey, and Kyle House.

Spirit Mountain NW Quadrangle, Kyle House.

Liz Crouse handed out a list of 30 existing 1:24,000-scale geologic quadrangle maps that NBMG will propose to convert to a fully digital GIS format. Some of these maps are in Adobe Illustrator file format, and some of the older maps will have to be converted from hard copy plates.

Scan and digitize plates into GIS format:

M101	1994	Crater Flat - check with USGS
M88	1985	Buckskin Mountain
M82	1984	State Line Peak
M76	1983	Rye Patch Reservoir South
M74	1982	Moho Mountain
M63	1980	Camp Douglas
M59	1977	New Empire

Convert Adobe Illustrator files to GIS format:

FS21 1999 Old Man Canyon
FS22 1999 The Cove
FS15 1999 Frazier Creek
FS16 1999 Third Butte East
FS20 1999 Little Horse Canyon
FS19 1999 Mount Moriah
FS17 1999 Mormon Jack Pass
M104 1995 Reveille
M106 1996 Fire Mountain
M108 1997 Castle Mountain
M109 1997 Wonder Mountain
M132 2002 Nelson SW
M135 2003 Willow Creek Reservoir
M136 2003 Willow Creek Reservoir SE
M137 2003 Hiller Mountain
M138 2003 Bobs Flat
M139 2003 Callville Bay
M140 2003 Government Wash
M143 2003 Beaver Peak
M144 2003 Mule Canyon
M145 2004 Big Bald Mountain
M146 2003 Fraser Flat
M147 2004 Verdi Peak

There was consensus among committee members that the above identified mapping projects would be appropriate and beneficial for Nevada's 2005–2006 submission to the Statemap program.

There was some discussion of these projects, some ongoing projects, and of future priorities for geologic mapping to be taken into account in the proposal process for future years.

The need for additional mapping in support of energy and water resources in eastern Nevada was reiterated.

Some new geophysical studies are being run in White River, Delamar, Spring, Snake, Dry Lake, and Cave Valleys in eastern Nevada. It would be useful to make these data available and integrate them into new mapping.

Ric Page, with the USGS, is working on 1:250,000-scale geology of the White River area.

Liz Crafford Jones and Alan Wallace are working on a seamless digital 1:250,000-scale geologic map of Nevada that is based on the NBMG 1:250,000-scale county bedrock geologic maps with some more recent larger-scale geologic information incorporated in some areas. It will also include some new correlation data. This product will be released as a USGS open-file report in 2006.

Ron Hess announced that the latest release of the 1:500,000-scale Digital Geologic Map of Nevada, USGS Open-File Report 03-66, released last year, includes some new lookup tables that make it much more useful than earlier releases. It can be downloaded from <http://pubs.usgs.gov/of/2003/of03-66/>.

Another area of increasing urban development that can use new or updated geologic mapping is the area between Canoe Hill and the Vista Interchange on the east side of Sparks. The Patrick Quadrangle was also mentioned because of increasing issues over flood control and preserving the riparian environment in that area.

Steve Fechner identified some U.S. Forest Service areas of interest. They would like to see a Sierra Front Hazards map developed and more paleo resource mapping completed in forest areas. They will also be doing a new land/resource plan around the Berlin Ichthyosaur State Park and would like to have new geologic, mineral, and paleo resource data in that area.

Joe Laravie identified the area between Cortez and Eureka, part of the Battle Mountain - Eureka or Cortez trend, as needing detailed geologic mapping.

Alan Wallace will be submitting the Huntsman Ranch Quadrangle to be published by NBMG sometime this winter.

Chris Henry announced that there will be a field trip, tentatively scheduled for Monday, November 7, to do a public review of the Dogskin Mountain Quadrangle. All who are interested in attending are welcome.

4:00 p.m. Adjourn

For more information please contact Jon Price (jprice@unr.edu) or Chris Henry (chenry@unr.edu) or Ron Hess (rhess@unr.edu) at the Nevada Bureau of Mines and Geology, (775) 784-6691.

LIST OF ATTENDEES

Jon Price	Nevada Bureau of Mines and Geology
Ron Hess	Nevada Bureau of Mines and Geology
Del Fortner	Bureau of Land Management
Joseph Laravie	Consulting Geologist
Jim Faulds	Nevada Bureau of Mines and Geology
Shawn Gooch	City of Sparks
Chris Henry	Nevada Bureau of Mines and Geology
Lew Gustafson	Consulting Geologist
Jim Werle	Converse
David Donovan	Southern Nevada Water Authority
John Muntean	Nevada Bureau of Mines and Geology
John Bell	Nevada Bureau of Mines and Geology

NBMG GEOLOGIC MAP BIBLIOGRAPHY SINCE 1992 AND CURRENT PROJECTS

Active Mapping

Statemap 05: To be delivered in 2006
Fernley West, north half: Faulds
Seven Lakes Mt, north half: Henry, Ramelli
Flowery Peak, east half: Castor, House
Searchlight*: Faulds
Jerritt Canyon district: Muntean, Henry

Statemap 04: To be delivered by October 31, 2005

Hidden Valley, Quaternary, east half: Ramelli, House, Park (UNLV)
Bird Spring, Quaternary: House, Ramelli, Park
Spirit Mt SE, Quaternary, west half: House, Howard (USGS), Brock (UNLV)
Goodsprings, Quaternary, northwest quarter: House
Flowery Peak, west half: Castor, House, Hudson (consultant)
Seven Lakes Mt, south half: Henry, Ramelli, Faulds
Fernley East: Faulds
Desert Peak area*: Faulds, Garside

*not Statemap

2005

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NBMG-GSN Quadrangle Mapping Program

Quadrangle/Area	Geologist	Year	Fund Contributor	Status
Hoover Dam	J.Mills	1991	MCF	Map 102, 1995
Bettles Well	Oldow, Meinwald	1991	GSN	FS-1, 1992
Robinson Summit	T Feeley	1991	GSN	FS-2, 1993
Windermere Hills	K Mueller	1991	GSN	FS-4, 1993
Mina	Oldow, Dockery	1991	Phelps Dodge	FS-6, 1993
Rice Mountain	Keith and others	1991	Homestake	FS-7, 1994
Pintail Bay	S Oleson-Elliot	1991	MCF	FS-8, 1994
Austin	D Smith	1991	Homestake	Offered Open File
7 quads, N Snake	Miller et al.	1991	Magma, Echo Bay,	FS-16 through 22, 1999
Hot Springs Peak	E Jones	1991	GSN	FS-14, 1997
Delvada Spring	E Jones	1991	Santa Fe	FS-13, 1997
Mt. Rose NW	W Gates	1991	MCF	Rejected - review Oct, 95
Winnemucca East	S Stahl	1991	Santa Fe	Rejected, inadequate map
McCoy District	Emmons, Eng	1992	Volunteered-Echo	Map 103, 1995
Antler Peak	J Doebrich	1992	Battle Mtn.Gold	Bulletin 109, March 1995
Crater Flat	Faulds et al.	1992	NWPO	Map 101, 1994
Job Peak	D John	1992	GSN	FS-5, 1993
Reveille	M Martin	1992	NWPO	Map 104, 1995
Welcome	A Snock	1992	Kennecott	Prelim field review 8/97
Tenabo	C Wrucke	1992	Echo Bay,Rio AI	Promised by 1998, waiting
Dicalite Summit	J Oldow	1992	GSN	expired 2/28/94
Government Wash	Duebendorfer	1992	GSN	Map 140, 2003
Pirouette Mtn	D John	1993	GSN	FS-9,1995
Timber Mtn. Pass	D Wood	1993	GSN	Promised Feb 96
Castle Mtns area	Capps, Moore	1993	Volunteered-Vice	Map 108, 1997
Blue Diamond SE	Carr et al		Volunteered	Map 123, 2000
Blue Diamond NE	McDonnell-Canan		Volunteered	Map 124, 2000
Mount Davis	Faulds	1994	GSN	Map 105, 1996
Fire Mtn.	Faulds	1994	freebie	Map 106, 1996
Sand Springs Range	Satterfield	1994	GSN	Map 133, 2002
Fairview Peak	Best, Hintze	1994	GSN	Map 114, 1998
Eugene Mtns area	Thole, Prihar		Volunteered	Map 115, 1998
Hussman Spring	Dilles	1995	Kennecott	Author digitizing
Frazier Creek	McKee	1995	GSN	FS-15, 1998
Bailey Pass	Conrad	1995	GSN	Rec prelim map; need final
Stump Spring,	GrMcMackin	1995	GSN	In progress
Monster Mine, West of	Shenandoah Peak			
Carson City 1:100,000	J Stewart		Volunteered USGS	Map 118, 1999
Wonder Mtn	John	1996	GSN	Map 109, 1997
Harrison Pass	Burton	1996	GSN	Author digitizing
Lamoille	Howard	1996	O Christensen, N	Map 125, 2000
Bullfrog Hills	Weiss, Connors	1996	DOE	Map 112,1998
White Horse Pass	Silberling,	1997	GSN	Map 132, 2002
Sacramento Pass	Miller	1997	GSN	In progress
Wood Hills	Camilleri	1998	GSN	Started cartography
Pequop Mts	Camilleri	1999	GSN	Started cartography
East Humboldt	PeMcGrew	1998	GSN	In progress
Lime Mountain	Hintze, Axen		Volunteered	Map 129, 2001
Hiller Mts	Howard et al.		Volunteered	Map 137, 2003
Verdi Peak	Howard, MacCready	1999	NBMG	Map 147, 2004
Callville Bay	Anderson	1999	NBMG	Map 139, 2003
Willow Creek Res	Wallace		USGS	Map 135, 2003

Willow Creek Res SW	Wallace	USGS	Map 136, 2003
Bobs Flat	Peters	Volunteered USGS	Map 138, 2003
Mesquite	Williams	Volunteered USGS	Office rev done;wait on author
Cooper Peak	Murphy, McKee etc	Volunteered	Author revision - cartography
Butte Range	B Otto	Volunteered	Field review Aug 16, 17, 2005
Beaver Peak	T Theodore et al.	USGS	Map 143, 2003
Mule Canyon	D John, C Wrucke	USGS	Map 144, 2003
Big Bald Mt	C Nutt, Hart	USGS	Map 145, 2003
Santa Renia Fields	Theodore et al.	USGS	Office review done
Oxley Peak	Thorman et al.	USGS	Open-File Report 03-4, 2003
Northern Carlin	S. Moore	Newmont	NBMG Bulletin 111, 2002
Maggie Creek	J. Norby	Newmont	NBMG Bulletin 111, 2002
Northern Carlin	S. Keith	NBMG	Open-File Report 03-1, 2003
Chalk Hills	Schwartz, Faulds	Volunteered	Open-File Report 04-11
Bullwhacker Spring	Fryxell	NBMG	In the field as we speak
Callaway Well, Troy Canyon			
Singletree Creek	Steve Moore	Volunteered	In progress

R. Hess - 10/5/05

Nevada 1:24,000 Scale Geologic Mapping

