

From: Deal, Edmond [mailto:EDeal@mtech.edu]
Sent: Monday, March 21, 2011 6:28 PM
To: Jonathan G Price
Cc: Deal, Edmond
Subject: supporting the Nevada Bureau of Mines and Geology

Jon,

I'm very sorry to hear of potential budget woes at the Nevada Bureau of Mines and Geology. We have all shared budget worries at various times in the past, but the magnitude of the cuts proposed for your organization will be crippling. Not knowing particulars of your budget structure, I can offer the following observations of impacts if a reduction of this size were to hit us:

The only unrestricted funds received by the Montana Bureau of Mines and Geology (MBMG) are those allocated by the State Legislature from the general fund. With those I maintain staffing for what I refer to as the "core" programs. These core programs include those that are central to fulfilling the intent of the legislature in our enabling act; mostly, they are also difficult to fund with contracts and grants or require significant matching dollars where grants are available. Included are:

- **geologic mapping:** geologic maps are the basic starting point for any geologic investigation. Once completed, the basic geologic maps may give rise to derivative maps that depict things such as geologic hazards, shrinking—swelling soils, effects of bedrock on forest ecology, and many other uses. Systematic geologic mapping has defaulted to the state surveys; large areas, particularly of western states, remain unmapped at needed scales and many older maps need revision as understanding of geologic concepts and events have changed. Except for a few maps produced by university students, even fewer produced by the USGS, and very detailed maps produced by minerals exploration companies, the US depends on the state surveys for its geologic maps.
- **minerals and energy research:** for new companies coming into Montana to explore or develop geologic resources, the MBMG is an early stop, if not the first stop, for information. Companies purchase our publications and maps that are directly related to geologic resources, as well as the more general geologic maps. They commonly may spend several hours to several days talking to staff geologists that have particular knowledge of an area of specific interest. This obviously can take considerable staff time, but the potential payback for the state if it leads to development of a mineral or energy resource is enormous in comparison.
- **earthquake studies office:** Montana is a seismically active state, but few earthquakes occur on the identified geologically young faults. The state depends on the data generated from the MBMG's monitoring network (we maintain a network of 38 seismic stations and collect data from an additional 4 stations within the state) to identify fault locations, types of fault movement, and interpretation of the stress fields that control these faults. This leads
- **outreach:** outreach takes many forms. The MBMG's publications staff prepares various documents such as reports and maps for release to the public. These may be either hard-copy or digital, although digital downloads are overwhelmingly popular. The last three years our digital publications have been downloaded about 200,000 times each year (mostly geologic

maps). Funds are provided for partial support of staff to attend meetings and conferences at many levels where they present results of MBMG's work. Outreach also includes staffing Montana Tech's Mineral Museum and conducting special tours and workshops.

Budget-wise, Montana is currently in relatively good shape compared to most other states. In early sessions of this year's legislature, it was acknowledged that natural resources production is the basis of this financial stability. This would seem to be even more the case in Nevada with its huge gold-mining industry. To severely reduce the funds of the single state agency that is devoted to gathering data on geologic resources, whether mining, the geothermal industry, or mapping seems very short-sighted. The Nevada Bureau of Mines and Geology has long been one of the leading state geologic surveys. Over 20 years ago I worked in the exploration industry and remember stopping by the NBMG office and purchasing literally a large box full of publications and maps. They were the basis for understanding what places I needed to go to see previously discovered or produced mineral deposits, and developing ideas for new places to investigate. The NBMG still serves that function well, just as the MBMG does in Montana.

Additionally, the state geological surveys collaborate in many ways. The National Geologic Mapping Program is one of those collaborations that has been highly successful. This program was implemented and funded at the federal level because all the state surveys got together, prodded, and pushed until it was accepted. No state individually could have made it happen. The same applies to other federally funded programs such as earthquake monitoring, data preservation, studies on carbon sequestration, and geothermal energy. In most of these efforts, we compete with each other for funding, but the fact that the program is even there is the result of collaboration of strong state surveys.

Lastly, the MBMG leverages its unrestricted state funds roughly on a 1:1 basis through contracts and grants. I don't know the numbers, but the Nevada Bureau of Mines and Geology does the same thing. The loss of state funds will greatly restrict that ability and will inevitably result in a loss of outside funding that requires matching dollars, and will also result in a loss of jobs that are supported by those funds. The state geological surveys create growth, taxes, and jobs through our efforts. No one is in position to replace the services that the state surveys, including your own, provide. Please consider carefully the impacts of the proposed cuts to the Nevada Bureau of Mines and Geology.

Ed

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