

STATE OF ALASKA

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF GEOLOGICAL & GEOPHYSICAL SURVEYS

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Jonathan G. Price, Ph.D.
State Geologist and Director
Nevada Bureau of Mines and Geology
University of Nevada, Reno
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Dear Jon,

I was shocked when I heard the news about Nevada's financial woes and the potential effect on the Nevada Bureau of Mines & Geology. Clearly, these are difficult times for all governmental organizations, both State and Federal. The process of significantly reducing budgets is incredibly difficult, if not very dangerous. Weighing the benefits of diverse government programs can be nearly impossible without a comprehensive cost-benefit analysis that can be compared with the immediate requirements of society. These studies are seldom available when needed. My hope is that your management has sufficient information when making such important decisions.

With that said, I would like to offer some points on why state geological surveys that work in areas like Alaska and Nevada must be evaluated in the context of both revenue generation and potential savings afforded a local government. The information we generate and make available concerning our natural resource endowments, as well as potential geologic hazards, provides the foundation for a sustainable economic engine that, in Alaska, makes up over 85% of the state revenue stream. For example, the Minerals Section at the Alaska Geological & Geophysical Survey has provided data and interpretations that have helped attract more than \$1.2 billion in exploration expenditures by the international minerals industry over the last 5 years. I know Nevada has seen similar activity, which is a combination of many factors such as commodity price and minerals potential, yet without the appropriate data sets, much of this investment would go to other high-potential areas of the globe.

Our interpretations and archived data are currently providing fodder for a strategic minerals initiative (now including Rare Earth Elements) that will likely play a significant role in our ability to attract investment and secure these critical commodities for the nation. It is often impossible to predict what single piece of information state geological surveys and bureaus gather that will be the tipping point for investors during the next resource rush, but there are numerous examples of this phenomenon in all sectors.

Our Energy group has provided regional and local geologic data that have increased the resolution of the North Slope stratigraphic column and petroleum system, and allowed us to be scientifically poised to capitalize on the recent upsurge in 'continuous resource plays' such as shale gas and source-rock oil. Our most recent oil and gas lease sale stands as evidence of this claim, with over 600,000 acres of leases being sold for more than \$8.5 million in bonus bids. The majority of this activity was to cover the emerging source-rock oil play that was not on the industry's radar a mere 5 years ago. Nevertheless, the baseline geologic data we have generated over the last 10 years provided critical information for the high bidders to

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capitalize on this resource. The ultimate revenue-generating capacity of this effort is yet to be determined, but will clearly be orders of magnitude larger than the initial investment in our work.

One thing I believe we can say without reservation: The availability of naturally occurring resources in our western states will continue to play a pivotal role in our nation's security as global demands on these finite commodities continue to rise, in some cases exponentially. Staying technically advanced and providing comprehensive, modern, and evolving data sets on all potential resources is paramount for a government if it is to capitalize on the dynamic shifts in resource exploitation.

Providing data for the public safety sector is another responsibility we share. Although Nevada did not have any active volcanoes when I last checked, our states certainly share in having high seismic risk. Our ability to reliably determine earthquake recurrence and slip rates on active faults, and to use these data to plan and mitigate catastrophic failure of critical infrastructure, is clearly underappreciated. That is, of course, until significant disaster is averted (or not). For example, a magnitude 7.9 quake on the Denali fault of central Alaska in 2002 did not make much of a splash in the press, but I can assure you the environmental disaster averted would have made significant headlines, and cost the state hundreds of millions of dollars. Neotectonic analysis of the Denali fault system prior to building the TransAlaska Pipeline indicated that the central portion of the fault system was due significant dextral offset, potentially within the useful life of this key national infrastructure. Engineers used this comprehensive data set to design mitigation for such an event, which did ultimately occur. The design required the pipeline to safely withstand 20 feet of dextral motion under the pipeline, which crosses the fault zone orthogonally, and on November 3, 2002, the fault gave way; the pipe (carrying nearly a million barrels of oil per day) slid on the specially designed supports a full 18 feet, averting another large oil-spill disaster in Alaska's history. I know you have many similarly critical areas in need of hazards mitigation in your state.

Another important, yet underappreciated utility of state geologic surveys is the "boots on the ground" training we provide countless students. Although many of us do not undertake formal academic instruction, we do provide significant support and training for students at every level of their academic career. The internships and research assistantships we offer provide students and faculty with applied, real-world experience that plays a large role in both university and student success. For example, many of our recent hires have benefited from student programs at state geologic surveys, and as a result, come on board with a level of real-world experience that is not afforded students at universities without a collaborating survey. I know many of my colleagues in the industry also use this criteria as a significant data point when hiring masters and PhD candidates.

In closing, I am very distraught about the financial difficulties we are observing in nearly every sector of our government. Clearly, we must make difficult decisions to get us through these very tight times. However, it is my sincere hope that we incorporate the entire set of variables when making these long-lasting and potentially damaging decisions. I urge us all to keep long-term economic vitality and public safety as our focus, and not fall prey to short-term fixes that will affect us all in the long run.

Jon, please let me know if there is anything I can do to help you in this difficult time.

Best regards,



Robert F. Swenson
State Geologist & Director