

UGS BOARD MEETING
Department of Natural Resources
Utah Geological Survey, Utah Core Research Center
240 N. Redwood Road, Salt Lake City
Wednesday, January 18, 2023

The meeting of the UGS Board was called to order at 8:33 a.m.

ATTENDANCE

Board members: Elissa Richards – Chair, Ken Fleck – Vice-Chair, Becky Hammond, Sam Quigley, David Garbrecht, and Riley Brinkerhoff. Rick Chesnut attended remotely.

UGS Staff: Bill Keach, Mike Hylland, Cheryl Wing, Hollie Brown, Mark Milligan, and Michael Vanden Berg. Don Clark, Claire Decker, Winnie Pan, Lauren Reeher, and Matthew Morriss joined for new staff introductions. Jackson Smith for his presentation.

ACTION ITEMS

Approval of Minutes from Previous Meeting

Elissa Richards motioned to approve the minutes of the August 10, 2022, UGS Board meeting. Riley Brinkerhoff seconded the motion. The Board voted unanimous, and the motion carried.

Formal Approval of Project Proposals

Although contract proposals for external funding are provisionally approved by the Board by email, they require formal approval at the next Board meeting. The proposals are:

Uinta Basin CarbonSAFE Phase II: Storage Complex Feasibility; funding from the Energy & Geoscience Institute; new funding to the UGS \$450,000; total project \$562,500; estimated start date 3/1/2023; estimated end date 2/28/2025.

Castle Valley Water Quality Monitoring; funding from the Town of Castle Valley; new funding to the UGS \$5,278; total project \$10,556; estimated start date 9/28/2022; estimated end date 6/30/2023.

Enhanced Helium Recovery (HER) and CO2 Sequestration in the Four Corners Region; funding from the Energy & Geoscience Institute (EGI); new funding to the UGS \$75,000; total project ~ \$1,000,000; estimated start date 3/01/2023; estimated end date 02/28/2025.

Suitability of Hydrogen Storage in Diverse Geologic Formations; funding from the Energy & Geoscience Institute (EGI); new funding to the UGS \$240,000; total project \$300,000; estimated start date 3/1/2023; estimated end date 2/28/2025.

Matheson Wetland Preserve Water Budget, Brine Layer & Vegetation Analysis; funding from Grand County; new funding to the UGS \$34,111; total project \$68,222; estimated start date 11/1/2022; estimated end date 12/31/2023.

FFY23 Geologic Data Preservation; funding from the USGS; new funding to the UGS \$367,468; total project \$734,936; estimated start date 7/1/2023; estimated end date 6/30/2024.

2022 BRIC Utah Geological Survey Hazards Mapping for Salt Lake County; funding from FEMA; new funding to the UGS \$340,000; total project \$453,334; estimated start date 7/1/2023; estimated end date 6/30/2026.

Utah STATEMAP FFY23; funding from USGS; new funding to the UGS \$799,898; total project \$1,599,796; estimated start date 7/1/2023; estimate end date 6/30/2025.

Elissa Richards motioned to formally approve the project proposals. David Garbrecht the motion. The Board voted, and the motion carried.

Proposed Dates for UGS Board meetings

Meeting, Wednesday, April 12

Meeting, Wednesday, August 9

Field trip, Thursday, Sept. 14 - Saturday, Sept. 16

Meeting, Wednesday, January 17, 2024

The Board agreed with the proposed dates for upcoming meetings.

Ideas for 2023 Field Trip

The Board discussed several ideas for field trip stops, including:

- Leamington (Ash Grove Cement)
- Delta (hydrogen facility, IPP)
- Milford (minerals museum, FORGE site)
- Iron Mountain (CO₂ sequestration study)
- Overnight in Cedar City

UGS management will enlist the help of UGS staff to plan and execute the field trip.

DIRECTOR'S REPORT

Personnel Changes

Retirements:

Jon King –Senior Geologist, Mapping, retired December 1st after 30 years of service.

Grant Willis – Senior Scientist and former Mapping program manager, retired December 15th after nearly 40 years of service to the State of Utah and the geologic mapping community.

Rich Giraud – Senior Geologist (landslides), Hazards, retired January 1st after 25 years of service.

Resignation:

Julia Mulhern – TL Project Geologist, Energy and Minerals. Accepted a permanent position with the Federal Government.

New positions:

Martha Jensen – moved from Data Manager to GIS Manager in the Data Management program. However, we just became aware that Martha was offered, and accepted, a new job with the Bureau of Land Management.

Nathan Payne – Sr GIS Analyst, moved from the Groundwater and Wetlands program to become the Data Manager in the Data Management program.

New hires:

Winnie Pan – Financial Analyst III

Claire Decker – GIS Analyst, in Energy and Minerals

Matthew Morriss – Project Geologist, Mapping

Lauren Reeher – Project Geologist, Mapping

Recent Activities – Looking Forward

Energy and Minerals

We are putting together a large proposal in response to a recent DOE solicitation involving CO₂ sequestration research. This solicitation specifically calls on proposals from state geological surveys with research emphasis on state-wide CO₂ storage "data gathering, analysis, sharing and engagement". We can ask for up to \$1 M, with 20% cost share, over 2 years. Project partners are TBD but could include EGI, UofU Geo. Dept., UofU SPARC Environmental Justice lab, and maybe others.

The UGS-requested building block for bathymetric lidar at Great Salt Lake was included in the Governor's budget (\$1.5 M which would cover the lake, wetlands, mudflat to the high-water line, and Bear Lake). Groups are already reaching out with interest in this data including DWQ and Ducks Unlimited. Our already funded bathy lidar pilot project was delayed and data will be collected in late spring 2023.

Our minerals group has commenced work in the West Desert mining district, one of two Earth MRI (Earth Mapping Resources Initiative, a congressionally mandated effort) projects funded by USGS. The press release announcing this project was very well received. Our second project (looking at the Phosphoria Formation for Rare Earth Elements) has been delayed as we wait for a contract with the Idaho Geological Survey.

The minerals group also finished their resource assessment of all BLM and SILTA lands involved in the Bears Ears Land Exchange and delivered the final report to SITLA.

Geologic Hazards

Over the fourth quarter of 2022, the Geologic Hazards Program continued work creating geologic hazard maps in the northern Utah County area and landslide inventory maps on the

Wasatch Plateau area, along with ongoing geologic data preservation projects. An extensive number of historical aerial images, including those acquired by the Utah Department of Transportation and its previous agencies, were also added to the online Utah Aerial Imagery Database.

Geologic Hazards Program staff organized and hosted the Basin and Range Earthquake Summit (BRES) in October. About 100 attendees from across the western U.S. participated in discussions on earthquake geology, seismology, Earthquake Early Warning, and emergency management.

Rich Giraud, our primary expert on landslides retired January 1st. We are actively working to fill this critical position.

Groundwater & Wetlands

The Groundwater Section recently published major reports on the hydrogeology and water budgets of Juab Valley and Goshen Valley. Both studies will be used by the Division of Water Rights to evaluate potential policy changes. Our many ongoing projects are progressing well. We have added five new employees since January 2021, and they are all excellent colleagues and scientists. Even so, we are nearly overwhelmed with current and new projects.

The Wetlands Section has continued progress on projects to assess montane wetlands and Great Salt Lake mudflat/playa wetlands, map wetlands in Utah County and Heber Valley, and evaluate the feasibility of an In-Lieu Fee program for mitigating destruction of wetlands due to new construction. Representative Snider requested UGS to prepare a budget to fund start-up of the In-Lieu Fee program over the next five years. The question is, who would administer the program? Would it be UGS or through DNR? If it's UGS, does it put us in a regulatory position? Board recommends that UGS be the scientists in the program and DNR handles the regulatory part of it.

Some Wetlands major issues include 1) the need to reward State Wetland Coordinator/Wetland Section Manager Diane Menuz for her consistently spectacular performance and taking on increased responsibility over the past 5+ years, by finding an appropriate position that allows pay commensurate with responsibility; and 2) accommodating continued expansion of the GWP, particularly maintaining a coherent, congenial working group which we feel is one of our primary strengths and accommodating office space needs.

Geologic Mapping & Paleontology

Mapping

The Geologic Mapping program is slowly being reconstituted with new staff replacing prominent recent retirements. Notable recent retirements since August include Jon King and the longest served member of the survey Grant Willis. Taking their places are Matthew Morriss, a University of Oregon alum with experience in landscape evolution, dike swarms, and broad interests in geologic mapping and Lauren Reeher, a University of Arizona alum with a background in structure and tectonics on the Colorado Plateau and 3D analysis of Laramide structures. In addition to retirements and onboarding new staff we just completed and delivered 24 projects as part of the current (2nd largest ever) USGS STATEMAP grant. We are also

beginning work on the new (largest ever) STATEMAP contract that includes 22 projects. We also recently submitted a new STATEMAP proposal for work that includes 18 total projects and 9 new mapping projects and a total \$1.8 M in funding over 2 years. Rosemary Fasselin, our GeMS GIS specialist, has been working closely with select federal and state collaborators to further develop geologic map GIS workflows. We also will be hiring a new permanent GIS analyst to help out.

Paleontology

The Paleontology Section continues to leverage two temporary staff to complete a backlog of sample curation and delivery to repositories as well as modernizing the paleontologic site database. We have had meetings with the National Park Service about a potential paleo project to assess a hadrosaur skeleton in Bryce Canyon National Park. Paleontology staff will also be joining NPS staff and others to assist in assessment of potential fossil resources exposed due to unusually low water levels at Glen Canyon National Recreation Area later this year.

In the longer term, several issues will need to be addressed. They include: full curation of the megablock, storage of curated items, and staffing as the majority of current personnel will likely retire in the next few years.

Geologic Information & Outreach

After a 2-year hiatus due to the pandemic, GIO held a successful Earth Science Week attended by nearly 700 students from schools as far away as Price and Gunnison. Since 2001 we have hosted approximately 14,000 Utah elementary school students. New this year, in response to the 2020 Magna earthquake, we included an activity station that illustrates Utah's seismic risk and how to prepare for "the big one."

Commonly Asked Questions About Utah's Great Salt Lake and Ancient Lake Bonneville (PI-104) was released in November. This is a much needed and timely update to the original booklet first published in 1996.

We produced another excellent Calendar of Utah Geology. As of mid-December, the bookstore had sold roughly 3,600 calendars and it is on track for a 10 to 15% increase over last year's sales.

The editorial group continues to help the department and other divisions with projects such as the DNR Annual Report and a new logo for the new multi-agency Great Salt Lake web hub.

Hollie Brown, our PIO, continues to write press releases and work with the media to schedule interviews and tours. She facilitated most of the news articles shared in the board packet. She has also provided content for *From the Field*, DNR's newsletter emailed to legislators.

GIO is partnering with the Utah STEM Action Center (part of the Utah Department of Community & Cultural Engagement) to update the manuals and lesson plans in GIO teaching kits to match the new core curriculum. They have created a draft for our Rock, Mineral, and Fossil kit. STEM AC currently loans out kits all across Utah and plans to do the same with some of our kits. This will be a great way to reach rural Utah schools!

GIO staff saw a notable uptick in meteorite inquiries spurred by the meteor that streaked across the Wasatch Front in August.

UGS's Popular Geology webpages were completely updated via a joint effort with the Data Management Program.

GIO is working with the Mapping Program to include a geoheritage project with their USGS STATEMAP grant application. The idea is to catalog and rank all possible geoheritage sites in Utah.

GIO is hiring a geologist to fill the position left vacant when Mark Milligan was promoted to program manager. We are looking for a candidate with K-12 teaching experience and/or knowledge of Utah's core curriculum, as well as an interest in producing short videos for social media.

Data Management

We currently have 35 projects on our plate, with over 80+ feature-requests/bugs/new-app-requests in our queue to address. We're doing our best to keep a good handle on everything coming at us. The UGS website has been completely redesigned, the Geologic Map Portal's geologic maps can now 'blend' with the basemap without increasing transparency (and decreasing color quality), the Wetlands application continuously gets new data and has many grant-funded feature requests, the Groundwater Monitoring Portal got a full rewrite and new user interface, and the Utah Rockhounder and Visitor Guide to Utah Fossils web applications were released.

Martha Jensen has been promoted to GIS Manager, and Nate Payne has been transferred and promoted from the Groundwater and Wetlands Program to fill the UGS's Data Manager position.

Cedar City office – Please see the separate report from Tyler and Lance

Funding and Budget –

Financially, the UGS is in good shape. Federal and other outside funding is strong. The UGS' challenge to pursuing additional outside funding is limited by its ability to fund internal staff to satisfy 'match' requirements.

Mineral Lease revenues to the UGS for FY22 came in at \$1,639,718.29, which is significantly higher than FY21. Strong prices for petroleum products pushed our initial Mineral Lease revenue forecast for FY23 to ~\$2.4 million. The recent downturn in pricing has dropped that forecast to ~\$2.2 million. Still higher than last year, but once again demonstrating the volatility in this revenue source.

In 2021 Senate Bill 133 established a restricted account with funds coming from severance taxes on production from oil, gas and mining operations. As written, the bill provides funds to the UGS based on a three-year average of severance tax revenues. This appropriation is then used to offset and supplant General Funds. It was our understanding at the time that any amount collected in excess of the appropriation remains in our restricted account. In the August 2022

UGS Board meeting we related “The excess amount deposited into the restricted account at the end of FY22 came to \$650,914.22.” We were disappointed to find that in succeeding months, August and September, two “TRUE UPs” totaling \$636,686.61 were swept from the account. This happened to all divisions that received funding from severance taxes. They include the Division of Oil, Gas, and Mining, and two divisions in the Department of Environmental Quality. We recently sent a letter to the State Tax Commission asking that “a full explanation be provided as to the methodology used to determine the amount deposited into both the UGS and OGM accounts.” We hope to meet with the Tax Commission soon. Our concern is that SB133, as currently interpreted, is not fulfilling the original intent. We will continue to work with the legislature on this issue.

For FY23, the Governor proposed, and the legislature approved, targeted raises for specific job titles in the UGS. Though it was a much-appreciated step to improve our ability to retain talented staff, the majority of staff in the geology related career track were not included. For FY24 the Governor’s proposed budget includes targeted raises for the balance of those on the geology career track. We are very supportive of this initiative.

In June of last year, we hosted Senator Evan Vickers along with staff from the Governor’s Office of Planning and Budget on a trip to Parowan Valley and Enoch. The goal was to improve understanding of the subsidence and other issues related to over pumping of groundwater. The UGS proposed a building block to fund a new position to better monitor groundwater using satellite acquired data. This proposal (~\$143,000) appears to have been included in the Governor’s FY24 proposed budget.

During the summer and fall the UGS partnered with Envision Utah and local water districts in hosting members of the legislature on visits/tours of Wasatch fault zone locations that affect the major aqueducts delivering water to the greater Wasatch Front. The first tour in August (reported to the UGS Board last August) was so successful that we were asked to host two more tours, one in Utah County and the other in southern Salt Lake County. A direct outcome of these tours was the Governor including \$50,000,000 for improving aqueduct resilience in his proposed FY24 budget. Though the UGS is not a direct recipient of this funding, it does show the impact we have to promote and ensure the safety of the community.

Financial Update –

Financial documents in the Board packet include the FY23 UGS Budget-Actual-Forecast Summary (through November 2022 revised) and the Contracts Proposals Tracking. The UGS November forecast indicates a FY23 surplus of \$2,134,544. Part of that surplus estimate is \$420,700 obligated for the Great Salt Lake Groundwater studies and \$331,400 obligated for the Bonneville Salt Flats Restoration project. The balance of \$1,382,444 will be adjusted in January for updated revenue estimates, which could be up to (\$400,000). Our beginning operating budget includes outside revenue estimates totaling \$3,207,607. This is a very high amount, and we are not likely to obtain the full estimate. Historically, \$2.8 million is a reasonable revenue estimate (hence the estimated reduction of \$400K). This would modify our forecast of general operating non-lapse to \$982,444 of which, we may possibly need around \$500,000 for the non-general fund appropriations of the FY24 compensation increases, leaving us an estimated \$482,444 general non-lapse.

We have requested a total non-lapse authority up to \$2,056,400. \$420,700 for the Great Salt Lake Groundwater studies and \$331,400 for the Bonneville Salt Flats Restoration project, and \$1,304,300 for general operating items.

November represents 42% of the fiscal year completed. Total percentage of outside revenue billed is about 36% and expenditures to date is about 28%. After December’s financials, we will conduct a mid-year, detailed review of project and operating budgets and make forecast adjustments as necessary.

Legislative Update –

For the 2023 General Legislative Session, we are presently tracking one bill and one Request For Appropriation (RFA). Senate Bill 28, Radon Related Amendments (Sen. Scott Sandall), directs the Division of Waste Management and Radiation Control to develop an online radon gas test data collection mechanism and map and address testing and mitigation in public buildings, including reporting. This bill is in follow-up to last year’s radon task force bill that required a report recommending ways to increase public awareness about the risks of radon and ways to mitigate Utah resident’s exposure to radon. UGS works closely with Radiation Control and may be asked to contribute to this project.

The RFA is a funding request for a person to run the Wetlands In-Lieu Fee program. Last year Rep. Snider sponsored a bill that required UGS to complete an In-Lieu Fee program study. This year Rep. Snider asked UGS to draft this RFA.

Budget:

Category	Amount	Details
Personnel	\$675,000	Five years of salary and full benefits for 1 Full Time Employee
Travel	\$40,000	State vehicle rates and mileage; out of state travel to attend conferences and trainings
Equipment/Supplies	\$5,000	Computer; office equipment; field supplies
Pass-through	\$280,000	Contractor services to develop tracking database and other assistance
Total Expenditures	\$1,000,000	

STAFF PRESENTATIONS

Mark Milligan presented on Earth Science Week 2022.

Hollie Brown gave an overview of UGS media outreach activities.

Jackson Smith presented on Bookstore status and updates. Board members voiced the opinion that other DNR divisions (i.e., those whose products and services the Bookstore supports) should be contributing in some way to the Bookstore operating costs.

Board adjourned at 12:02 pm.