

# **I. AGENDA**



STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
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Carson City, Nevada 89703  
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**STEVE SISOLAK**  
Governor

**Las Vegas Office:** 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

**MICHAEL VISHER**  
Administrator

**COMMISSION ON MINERAL RESOURCES**  
Nevada Bureau of Mines and Geology  
Great Basin Science Sample and Records Library  
2175 Raggio Pkwy, Reno, NV 89512

Join from a PC, Mac, iPad, iPhone, or Android device: Please click this URL to join,  
<https://us02web.zoom.us/j/9712825638?pwd=YkZPbHJIdUQ0cUo3bldzb2k3aS9UUT09>  
Meeting ID: 971 282 5638

Thursday, May 19, 2022

1:00 P.M.

**AGENDA**

**CALL TO ORDER**

The agenda for this meeting of the Commission on Mineral Resources has been properly posted for this date and time in accordance with NRS requirement.

**ROLL CALL**

**PLEDGE OF ALLEGIANCE**

**COMMENTS BY THE GENERAL PUBLIC**

Pursuant to N.R.S. 241, this time is devoted to comments by the public, if any, and discussion of those comments. No action may be taken upon a matter raised under this item on the agenda until the matter itself has been specifically included on a successive agenda and identified as an item for possible action. Public comments may be limited to 5 minutes for each person. **ACTION WILL NOT BE TAKEN**

**I. AGENDA**

A. Approval of the Agenda

**FOR POSSIBLE ACTION**

**II. MINUTES**

A. Approval of the March 10, 2022 meeting minutes

**FOR POSSIBLE ACTION**

**III. NEW BUSINESS**

A. NBMG Special Project Proposals

**FOR POSSIBLE ACTION**

The Nevada Bureau of Mines and Geology (NBMG) will re-present a previously considered proposal for a Special Project. The Soda Lake Geothermal Report was considered at the CMR March 11, 2021 meeting. Three new proposals will also be presented. The Commission will discuss and may approve one or more projects to be funded by a future agreement between the Commission and NBMG. Material information for the project has been posted online along with this meeting's notice and agenda.

B. 2022 AML Summer Intern Program Overview

Goals and plans for the 14-week summer intern program will be reviewed along with a brief introduction of the students. - Sean Derby

**FOR DISCUSSION ONLY**

C. The McCaw School of Mines Exhibit Proposal

The McCaw School of Mines has requested financial assistance from the Commission for the creation and installation of a modern mining multimedia projection exhibit. A review of the project and proposed budget will be presented for consideration. Material information for the project has been posted online along with this meeting's notice and agenda. - Garrett Wake

**FOR POSSIBLE ACTION**

D. Proposal to Add GIS Analyst Position to Agency's FY24/25 Budget Submission

The Division is proposing to add one FTE as an unclassified GIS Analyst as part of the agency's biennial budget submission. The justification, anticipated timing, ongoing cost of the position and impacts to the budget will be reviewed. The Division is seeking approval from the Commission to move forward with the necessary planning and incorporation in the proposed budget. – Mike Visser

**FOR POSSIBLE ACTION**

E. Proposal to Establish an AML Hard Closure Fund

The Division has identified approximately 270 AML hazards located on lands owned by counties, municipalities, and State agencies. The Division is proposing to create a new expenditure category, funded by a transfer from the existing reserves, from which these entities can apply for sufficient funding to perform or contract their own hard closure efforts. A review of the proposed program, its goals, logistics, interested entities, and initial funding will be discussed. - Mike Visser, Rob Ghiglieri, and Sean Derby

**FOR POSSIBLE ACTION**

F. Strategic Planning Session for Biennial Budget Fiscal Years 2024-25

The State biennial budget kickoff meeting was held on March 9th, with directions and schedules from the Governor's Finance Office (GFO). The GFO provided a new Strategic Planning framework document outlining the vision, mission and strategic priorities for State Agencies, Boards and Commissions. A review of the planning framework and how the Division's programs align with the Governor's core functions and priorities will be presented for discussion and possible modification. – Rob Ghiglieri and Mike Visser

**FOR POSSIBLE ACTION**

**IV. OLD BUSINESS**

A. Financial Update

A review will be provided of the agency's 2021 – 2025 budget and forecast to include a discussion on forecast revenues, expenditures, and reserves.

- Mike Visser

**FOR POSSIBLE ACTION**

B. Update on Status of Previously Approved AML Enhancement/Special Projects

A status update on several enhancement projects will be provided.

- Rob Ghiglieri

**FOR DISCUSSION ONLY**

**COMMISSION BUSINESS**

A. Review of staff monthly activity reports.

B. Set date for next Commission meeting

**FOR DISCUSSION ONLY**

**FOR DISCUSSION ONLY**

**COMMENTS BY THE GENERAL PUBLIC**

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## **ADJOURNMENT**

### **NOTICE TO PERSONS WITH DISABILITIES**

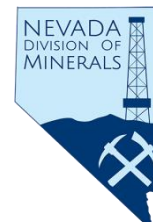
Members of the public who are disabled and require special accommodations or assistance at the meeting are requested to notify the Division of Minerals, 400 W. King Street, Suite 106, Carson City, NV 89703 or contact Sherrie Nuckolls at (775) 684-7043 or Email [SNuckolls@minerals.nv.gov](mailto:SNuckolls@minerals.nv.gov)

## II. MINUTES



**STEVE SISOLAK**  
Governor

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**MICHAEL VISHER**  
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**Las Vegas Office:** 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

Thursday, March 10, 2022  
1:00 P.M.

**MINUTES**

Commissioners	Staff	Public
Josh Nordquist	Mike Visher	Robert Ernaut, R&R Partners via Zoom
Mary Korpi via Zoom	Rob Ghiglieri	Chris Lynch, UNR BEP
Art Henderson	Sherrie Nuckolls	
Bob Felder	Cortney Luxford	
Nigel Bain via Zoom	Garrett Wake	
Stephanie Hallinan via Zoom	Becky Ely	
Randy Griffin	Dustin Holcomb	
	Deborah Selig	
	Anthony Walsh, DAG via Zoom	

**CALL TO ORDER**

1:06 PM

**COMMENTS BY THE GENERAL PUBLIC**

None

**AGENDA**

A. Approval of the Agenda

**Motion to approve the agenda made by:** Nigel Bain

**Seconded by:** Randy Griffin

**Unanimously approved**

**II. MINUTES**

A. Approval of the December 15, 2021, quarterly meeting minutes

**Motion to approve the October 27, 2021, minutes made by:** Stephanie Hallinan

**Seconded by:** Bob Felder

**Unanimously approved**

**III. NEW BUSINESS**

A. **Introduction of New Staff**

**Mike Visser:** Dustin is delayed from his flight from Phoenix and Garrett is picking him up so once he comes in, we'll insert the introduction into that part of the agenda at that point.

**B. Nevada Business Environmental Program Presentation**

Mike Visser introduced Chris Lynch, Director of UNR Business Environmental Program. Chris then provided an overview of the program, within UNR's College of Business, and the services provided.

**Art Henderson:** Did you say where your office is? Are you located at UNR?

**Chris Lynch:** Yes, I'm up in Reno but we serve the whole State through there.

**Bob Felder:** How long has your program been in existence?

**Chris Lynch:** Since 1988, we got started.

**Bob Felder:** I'm really glad you're here because I've worked the last 35 years in the exploration mining side and I had no idea you existed, so I'm glad the word is starting to get out, it seems like there's so many junior companies coming into this jurisdiction for mining investment and they immediately have to go out and hire high cost environmental consultants to guide them through this process so I'll sure spread the word around because it's a great resource.

**Chris Lynch:** Well good, glad to hear it. We're not here to put consultants out of business, we work with the businesses as much as we can and sometimes, they need additional help, we're a good first start for people.

**Bob Felder:** In the example you gave about the mining operation, by the time a company is in production they have an environmental department so how is it that a mining operation didn't have that internal resource and had to come get your help?

**Chris Lynch:** It was a pretty small operation; I think the principles were engineers but they're also having to do everything else.

**Bob Felder:** I understand companies not wanting to have that department in-house, that's interesting. I've either been living under a rock, or this program isn't that well publicized.

**Mike Visser:** I was shocked when I found out about it at SEC, as long as I've been in State government, I hadn't heard about it. Obviously, it's an underutilized resource and under advertised resource, I was hoping to get it out to plant a seed with you so you can propagate the message that Chris has this resource available. I was thinking about synergies between our agency which is really at the front stage of exploration for a lot of businesses from oil, geothermal, lithium brine and to a degree mineral exploration and so mining companies, some of these are really small groups that would have to have a foreign jurisdiction, they're coming into the state new and they want to understand what permits are required, it isn't enough to give them a sheet that says here's the agencies you need to contact, it's really how do I go about this with some technical help, what do I need and this is a real help.

**Nigel Bain:** Went over the charter of the Commission and said we can be a resource to you if he gets contacted by someone looking for help on the added value of the minerals, a lot of Nevada's minerals are mined in Nevada and then sent elsewhere, to the best of my knowledge Nevada doesn't have a final refinery for gold. Lithium is something that's coming along, I hope we don't lose that second and third stage of manufacturing it in the State of Nevada, even the property that the Commission is going to visit, a lot of time they were mining certain minerals and discarding other minerals there the variety of clays and just waiting for the third party to be

contacted and put together. If you can kind of keep us in the back of your mind that maybe, we can help on the second or third phase on refining or manufacturing of Nevada's minerals.

**Chris Lynch**: That's a great idea, thank you.

Mike Visser introduced Dustin Holcomb, NDOM's newest employee, to the Commission. Dustin started in the later part of December 2021 and Mike asked Dustin to give a brief description of himself.

**Dustin Holcomb**: Introduced himself and shared his background and experience to the commission.

The Commissioners and Anthony Walsh, our DAG introduced themselves and gave descriptions of their backgrounds.

Josh Nordquist arrived at the meeting.

Mary Korpi turned the meeting over to Chairman, Josh Nordquist.

**Josh Nordquist**: Thanked Mary, for stepping in while his flight was delayed.

### **C. Federal Hardrock AML and Good Sam Legislation Update**

Rob Ghiglieri went over a PowerPoint presentation on the development of a new federal hardrock abandoned mine lands program, its funding status, and possible mechanisms for financial support to states (refer to attachment).

**Art Henderson**: We had a big effort to get rid of our orphan oil and gas wells several years ago, do we have any left in the State?

**Rob Ghiglieri**: There are, but none on private, there are 6 total on BLM land.

**Cortney Luxford**: Realistically there are operators that are defunct and there might be a bond out on them but the bond's not sufficient to cover the abandonment.

**Rob Ghiglieri**: We're not like Pennsylvania or the Dakotas or Texas that they're getting hundreds, millions of dollars to do these, we're one little dot when they showed the nationwide map that show up in Nevada.

**Cortney Luxford**: I've been working with the BLM to identify potential wells that are most likely abandoned but haven't officially been classified as such.

Rob Ghiglieri also went over proposed legislation for a Good Samaritan Hardrock AML Pilot Program.

**Mike Visser**: One of the good things about the Hardrock Mining Bill there's actually now going to be a program at the federal level that recognizes the need for remediation of abandoned hardrock mine sites which obviously is big for Nevada, it is likely tied funding wise to the mining industry, both Senator Masto's office and Governor Sisolak's office are not in favor of the gross royalty and it sounds like the Mining Association would be willing to entertain discussions on a net royalty and we'll see how that actually plays out and how the funding formula would work because it would be on production on federal lands only so again, Nevada's going to be generating the bulk of the revenue. Good Sam is a really good opportunity for Nevada to showcase multi agency projects, how we can get stuff done. I think NDEP is very much interested but until the money is showing up how do we do that. Congress wants to see a quick turn around on the investment, they want to see projects done.



**Rob Ghiglieri:** One thing I wanted to mention is I added these three highlighted GAO reports to Congress of what's going on in AML. But there are many flaws throughout it but nobody's going to explain the flaws, so we heard rumors that they're going to do another one so we're hoping they'll reach out to us so we can continue to help provide as much information, an actual true picture of what's out there.

**Mike Visher:** But at least the discussion is there, the framework is there, the program will be developed, now we're just waiting on the funding to actually do something. Nevada's in a really good position to benefit from this regardless of how it shakes out because we've been able to demonstrate how it can be done and how it can work and with Rob's role as the chair of the hardrock committee. It provides us additional opportunities to voice our concerns but also our successes and showcase those as to what works and what the limitations are. The biggest one is still staffing at the BLM. At a time when you have oil at an all-time high and new interest in geothermal and have high commodity prices and you have critical mineral development and lithium all playing out in Nevada and they still have all these vacancies they can't fill and then you're going to put an additional program on them, no matter what, whether it's administered at the BLM, BLM is going to have a role to play and there aren't enough resources there., Fortunately, IMCC is there and they're good at communicating with the states and with the Legislators and providing really well written documents to them that lay out all the issues and the flaws and what works. We're really fortunate to have Tom Clark there as a former state regulator and mining engineer that understands the issues. the Division pays \$5K a year to be a partner with IMCC.

**Rob Ghiglieri:** In the past, IMCC has been mostly focused on coal issues, but since Tom took on the role, there's been a new push for hardrock. At the last NAAMLTP meeting, the discussion was 50/50 hardrock and coal, which has never happened in the past so there's a lot more discussions and potential future.

**Mike Visher:** We need to take a break so we can check into our flights for tomorrow.

**Josh Nordquist:** We're taking a 15-minute break.

#### **D. Agency Education and Outreach Activities Update**

Rebecca Ely talked about education and outreach events and activities conducted by agency staff in 2021 and shared plans and goals for 2022 (see attachment).

**Randy Griffin:** Asked if we include a range in the pay scales as he thinks that would interest kids.

**Rebecca Ely:** Lucia made a map that's a 3D representation of the average pay in Nevada and Garrett and I both use this in a lot of our presentations, it has information like tax revenue each County receives, how many employees are with the mining industry. She talks about the career paths and jobs in mining whether they have a high school diploma all the way up to a PhD and that the mining industry pays very well and offers a lot of benefits.

**Randy Griffin:** Good, I've talked to people about having their children go into the mining field and they respond with, "mining is dangerous."

**Rebecca Ely:** In middle schools and high schools, we show how safe it is and shows comparisons with what historical mining looks like which looks dangerous and then what modern mining actually looks like. We talk about the laws on safety and worker rights, we highlight all the

protections that the United States has in place and also the State of Nevada has in place that provide that good balance for protecting the environment and the workers.

**Bob Felder:** Asked if she ever had a student that took her class like 8 years ago and one day down the road, she ran into them, and they said I took your class and I'm going to become a geologist. Just curious how effective were we and does it attract people in our industry. I don't know if there's an easy way to make that happen.

**Rebecca Ely:** I've always been curious too; I did have a kid come up to me at a school and say "you came to my school last year and now you're at my new school" I thought that was really neat that he recognized me, so I feel it is impactful, but I haven't had that experience.

**Rob Felder:** I think K-12 when you go into a classroom that's kind of far out, you probably wouldn't get feedback unless they were in high school

**Rebecca Ely:** Right, you just never know when you're going to inspire somebody.

**Bob Felder:** you could say if you ever end up in this field call us.

**Rebecca Ely:** I say in the high schools, don't be afraid to reach out to me, I love hearing from everyone, if you have more questions contact me so I do try to make myself available to everybody.

#### **E. Fluid Minerals Program Update**

Cortney Luxford gave a PowerPoint presentation of oil, gas, geothermal, and dissolved mineral resource exploration permitting, drilling activity and production. He also gave a review on financial impacts from the temporary regulation change to NAC 522 affecting the administrative fee paid on oil production (see attachment).

**Nigel Bain:** Asked if the State government knows about NASA's request there.

**Cortney Luxford:** Yes, there's been a lot of push back from 3PL they've been trying to find proponents in both State and federal government to help them. I think it's a touchy subject because NASA use the satellites for measuring greenhouse gases, but the withdrawal is potentially impacting a large lithium resource, so its green vs. green.

**Mike Visser:** We assisted a consulting geologist for NASA who was asked to prepare the mineral potential report for the segregation area. He spent a better part of a day at our office to get as much information as he could from us on some of the facets of minerals in Railroad Valley and also make contact with additional folks that could provide him with information. He was supposed to have his report to NASA done early March so he may have it done now. 3PL also worked with the counties to demonstrate the potential impacts that they could probably have, part of it is educating NASA about the actual impacts from their project so they hadn't really understood there was not a very good likelihood of a brine facility being destructive there and that was never the intent of 3PL, theirs has always been extracting lithium from the brine and re-injecting the fluids not large evaporation ponds. NASA has stated that they're not interested in the full 36 square miles, but we don't know exactly how much they want. Because of the mining law and the ability for anybody to stake a claim and then pursue mining from it and the inability for the BLM to say no, that NASA is having to pursue this mineral withdrawal path. So hopefully they'll be able to work out some compromise with the actual footprint they're looking to protect will be small and not impact the potential lithium resources there and yes, the Governor's office is aware of the potential and the impacts, they're watching that as well.

#### IV. OLD BUSINESS

##### A. Financial Update

Mike Visser went over a PowerPoint presentation of the agency's 2021-2023 budget and forecast to include a discussion on mining claim revenue and appropriate projections to use for 2024-2025 budget planning (see attachment).

Mike Visser: I would like to have some discussion and feedback as we embark the process of our biennium budget is crystal ball forecast, do you think mining claim fees are going to go up, down, or stay the same so that we can prepare our budget appropriately understanding we're not in control of that. He proposed at the next CMR meeting in May the Division comes forward with additional proposals for expenditures to address the significant increase in revenue and some options for the CMR to consider as we start on our next budget. Understanding we have deadlines, one of those is we want to consider adding staff, we have to submit the paperwork by June 1, obviously there's got to be justifications for that. There are some other opportunities for partners or requests from other parties that can be considered by the Commission for additional projects, and we'll pull those from some of other agencies and entities to see what we can do, and we'll present that at the next meeting. It's a really nice problem to have, I think it's still reflective of what the Commission is tasked with doing, it's reflective of the increase for the digital marketing campaign that's built in this, the Railroad Valley project, the project of the Discovery Museum that you already approved. The ongoing amendments to the Bureau's projects and their funding that's built into this. Mike would like to hear from the Commission regarding mining claim fees revenue, he asked if they thought it will stay where it's at currently and what their thoughts were. What are your thoughts, what are your feelings in your area of expertise as we budget into FY24 and FY25 because that's what we're looking at as by the end of August the Chair will have to sign off on our budget proposal that carries us through FY25.

Bob Felder: I wouldn't assume another 15% increase each year, I think it's reasonable to assume it will stay at the current level. It's crystal ball territory, right? A certain approach would be level for next year, you have to think 2 years out.

Mike Visser: We're actually looking at 3 years out, so we're looking at next year, we have to plan for FY24 and FY25 so we're looking all the way through June 30, 2025.

Bob Felder: As we know it's cyclical and we can't expect it to grow every year so I think it would be conservative to maybe have a slight decrease for a couple of years and if we're wrong, great.

Josh Nordquist: I throw out the same input and with this year we'll have 3 straight years of growth if it went back in time, we've seen a couple years of growth followed by years of decrease, I think we have to stay somewhat conservative. I can't speak in regard to lithium without knowing any more at this point.

Mike Visser: What do you think Mary?

Mary Korpi: You know what is going through my brain, it used to be we budget from year to year but they've got budget plans too, I think it would be interesting if we could talk to a few people and gets some input from them on what are they looking at from their crystal ball, I know we don't get that information, the annual but those of us who know some people follow up and see if we can get some kind of indication knowing that nobody has control of the future.

Mike Visser: That's a good thought.

**Bob Felder:** Mike, do you have stats with the 15% increase of claims maybe how much of that comes from the big operators vs all new operators that come into Nevada?

**Mike Visher:** No, that would be easy for us to break out so we can do that, typically it's 50/50. What we've seen with both Newmont and Barrick is both separately as well as with their joint venture that they're not pursuing so much of the grassroots anymore and instead they're focusing on extensions of new operations. This presents an opportunity for the junior companies, and they are driven by the ability to raise money and so as you said if it's difficult to raise the capital that they need to afford either because they're finding competition from cryptocurrency or other commodities it poses a challenge. We're seeing a lot more interest from Australian companies than we've seen in quite a while. It will be interesting to hear what transpires at PDAC in June as to what the sentiment is. It was very positive from AME, we didn't attend in person, but we attended remotely, and everybody was excited about the prospects and everybody's looking for increased exposure to battery metals because the investors want that, if you have a project that has some resource already identified it's not too hard to raise money but grassroots, no.

**Bob Felder:** If you look at the industry, it was kind of in the tank, the economics of our industry whenever the recovery was called it, maybe 2018, we bounced back, gold prices went up and a lot of funding came to Nevada.

**Mike Visher:** I was hoping to get some ideas and I appreciate the approaches and we'll look at those and see what it does, and I think we'll get probably a consensus amongst those that will put forward in May, so we have something to use for our budget building. Nigel, did you have any comments you wanted to add?

**Nigel Bain:** Just with what's going on in the world I don't know if anyone will have time or bother with any mining reforms in Washington DC, the price of gold, copper, silver is all going up. If 3PL loses that land there's a ton of claims in that block, it's a little bit of both, I think it's a huge upside for mining company opportunities with a bunch of downsides. I would just sit on where we are knowing full well, we're going to have an excess at the end of the year.

**Mike Visher:** Ok.

**Randy Griffin:** One other comment, I still have contacts at Lhoist, and they said they've had five price increases in the last year, the latest one went out last week and they didn't give their customers a 30 day notice it was effective April 1<sup>st</sup> they're trying to maintain their budget, like every company does.

**Josh Nordquist:** Very well, you have some suggestions to go with.

**Mike Visher:** Yes.

## **COMMISSION BUSINESS**

### **A. Staff update on status of various agency contracts**

Rob Ghiglieri gave an update on all the current contracts

### **B. Review of staff monthly activity reports**

Mike explained that the activity reports are more detailed than what the Commission gets in their monthly summary and if there are any questions this is the time to ask about those. No questions asked.

### **B. Set date for next Commission meeting**

The next meeting will be Thursday, May 19, 2022, at 1:00 p.m. in Reno.

**COMMENTS BY THE GENERAL PUBLIC**

None

**ADJOURNMENT**

4:42 p.m.

DRAFT

### **III. NEW BUSINESS**

### **III. A NBMG Special Project Proposal**

**Report on the 3D Stratigraphy, Structure, and Fluid Flow Regime of the Soda Lake Geothermal Field, Fallon, Nevada (Total Cost: \$40,000).**

**Introduction:** From ~2010 to 2018, NBMG supported an in-depth analysis of the stratigraphic setting and structural controls by Ph.D. student Holly McLachlan on geothermal fluid flow at the Soda Lake geothermal field (McLachlan, 2018), a currently producing ‘blind’ geothermal system near Fallon. Main objectives were to: 1) define the stratigraphic setting and structural framework, 2) generate a detailed 3D geologic model of the field area, and 3) model fluid flow in context with the geologic model. This study was undertaken to improve our understanding of basin-hosted, blind geothermal systems with the intent of facilitating development of similar systems throughout the region. Blind systems likely comprise the majority of geothermal resources throughout the Basin and Range province, and many lie buried under thick accumulations of sediments in the broad basins that make up >50% of the province. The Soda Lake field is one of the more deeply buried known systems in this region and – as is common – the structural controls on fluid flow cannot be discerned at the surface. However, the Soda Lake field has produced electricity for 30+ years, and a wealth of subsurface data has been acquired in the area. These rich datasets provided a foundation for a detailed model of the geologic setting of the Soda Lake system.

**The study:** Initially, the stratigraphic framework was defined from analysis of cuttings, borehole logs, and dating of key igneous units. Three major divisions were identified: 1) ~900-1100 m of basin-fill sediments; 2) ~1 km of Miocene bedrock, dominantly mafic lavas interbedded with subordinate tuff and sedimentary rock; and 3) a basement assemblage of Triassic-Jurassic metamorphic rocks and Jurassic-Cretaceous granite. Pursuant to this, a comprehensive 3D geologic model of the field was constructed from: 1) the new stratigraphic model, 2) bedding attitude estimates from seismic surveys and borehole logs, and 3) a fault framework derived from well data and geophysical surveys. The fault framework had been modeled in previous studies of seismic reflection and borehole data. A well-constrained set of fault picks was chosen as the initial input to the 3D model. A stratigraphic model derived from lithologic intercepts and bedding attitude data was then built around the fault framework to generate a complete geologic block model. In the final phase of the study, borehole temperature data were integrated with the block model and flow data to identify the main upwelling and outflow conduits.

**Modelling results:** The Soda Lake field is dominated by a series of E-dipping ( $65^{\circ}$ - $75^{\circ}$ E),  $\sim$ N $5^{\circ}$ - $10^{\circ}$ E-striking normal faults that bound a series of W-tilted ( $\sim 35^{\circ}$ W) half-grabens. Tilt-fanning of strata suggests that extension began  $\sim 13$  Ma and slowed significantly after  $\sim 5$  Ma. However, the largest faults appear to have accommodated minor extension into the late Pleistocene. Three to five closely spaced E-dipping, northerly-striking faults define the west side of a central half-graben, which hosts all producing wells at the field. The likely primary conduit for upwelling at Soda Lake is proximal to a small step-over in the most well-defined and easternmost of these faults, which forms the inner boundary of the central graben.

**Proposal:** This work was funded by a DOE ARRA grant awarded to Magma Energy in 2010. The original grant did not allow for full review and publication. NBMG proposes to organize, fully review for quality assurance, and publish a consolidated version of the dissertation on the structural settings and fluid flow at the Soda Lake field. A peer-reviewed NBMG report will be produced, and the data will be released through the NBMG open data site. This work will facilitate new geothermal exploration and development in Nevada. This project will be completed by Holly McLachlan, NBMG cartographic staff, and the NBMG geothermal data manager under the supervision of NBMG Director Dr. Jim Faulds. If approved, the Project would be completed in FY2024.



## **Mining District Files: Digitizing for Universal Access**

**Project Lead: Emily O'Dean**

Each year, the Great Basin Science Sample and Records Library (GBSSRL) receives donations of maps, reports, articles, photographs, assays, productions reports, and information of all aspects of mining in Nevada, which the GBSSRL accessions into its Mining District Files of Nevada Collection. The GBSSRL digitally preserves these documents by carefully reading and evaluating each document, creating searchable standardized digital metadata, scanning the materials, making each digital object accessible, and finally making the data available on the internet via web applications. These documents are commonly accessed by industry professionals, researchers, and members of the public.

The GBSSRL currently has a backlog of approximately 300 boxes of donated files that have not been digitized. To process these documents as efficiently as possible, the GBSSRL proposes utilizing the Digital Services unit of UNR to scan the documents. The Digital Services can scan up to 120 pages per hour, regardless of document size and format. Students and staff at the GBSSRL will accession, prioritize, enter metadata, make documents accessible, and update web applications. The Digital Services department has agreed to partner on this project, if funded, at a rate of \$10/hour with a commitment of 48 weeks at 20 hours of labor per week. The GBSSRL plans to hire a soft-funded Letter of Appointment in FY23 to assist with various data preservation activities, and proposes that this individual lead the preservation effort of these documents, including metadata entry and adding accessibility components to each digital file.

We anticipate digitizing over 100,000 pages. Depending on file length (some files are a single page while others are hundreds of pages), this project will add thousands to tens of thousands of files to the Mining District Files of Nevada online collections.

**Proposed timeframe:** August 1, 2023 to June 30, 2024.

**Budget estimate: \$35,400**

- GBSSRL staff label, re-box as necessary, and prioritize documents
- \$1,600 - \$40/hour including fringe, 40 hours total
- GBSSRL LOA metadata entry, document accessibility
- \$23,400 - \$30/hour including fringe, 15 hours per week, 52 weeks
- Web application update
- \$800 – \$40/hour including fringe, 20 hours total
- Digital services scanning fee: \$9,600 - \$10/hour, 20 hours per week, 48 weeks

## **Earth Science Week Field Trip Publications**

**Project Lead: Rachel Micander**

Each year the Nevada Bureau of Mines and Geology leads an Earth Science Week field trip in October that is open and free for the general public to attend. These field trips generally align with the Earth Science Week theme that is identified by the American Geosciences Institute. NBMG field trips are well attended and paper guidebooks are published and released in a simple format for anyone to view and participate in following the actual event in October. The Nevada Bureau of Mines and Geology proposes converting one existing Earth Science Week draft field trip guide (2021) and two future (2022, 2023) field trip guides to a visually appealing print format (available for purchase from NBMG) and a digital format complete with audio recordings/podcast. The purpose of the digital format and audio recordings is to enable people to take these tours on their own at any time, without having to attend the physical earth science week field trip. It would also provide a means for people who are unable to physically attend these trips to access many of Nevada's unique resources and landscapes. Additionally, the 2021 field trip guide has not yet been published. These funds would not only help to finalize publication of the 2021 field trip guide, and fund the 2022 and 2023 Earth Science Week field trips, but also provide a pilot project in which NBMG could assess the impacts of these guidebooks and enable more people to explore Nevada's natural resources and understand the importance of mining and mineral resources. The three proposed field trip guides for this project are listed below.

- 2021: A Tale of Three Rivers and the Rapidly Evolving Landscapes of Western Nevada. Focused on the importance of water in the high desert, historic mining, and current mining in and around Yerington, and geothermal energy production at Wabuska. 2021 theme: "Water Today and for the Future".
- 2022: **Proposed** geothermal-focused field trip to align with the 2022 Earth Science Week field trip theme "Earth Science for a Sustainable World". Field trip will take place on 10/15/2022.
- 2023: Future mineral resource focused field trip. No theme has been identified yet by the American Geosciences Institute.

**Proposed timeframe:** July 1, 2022 to June 30, 2023

**Budget estimate: \$18,000**

## **Catalogue of Mineral Resources and Reserves**

**Project Lead: John Muntean**

Starting in 1979, NBMG has issued annual reports that describe the mineral, oil and gas, and geothermal activities and accomplishments in Nevada. These reports include production, reserve, and resource statistics of mineral properties throughout the state. Although these reports nicely record annual activities, they have yet to be synthesized into any long-term reviews or assessments.

**Proposal:** Compile catalogue documenting resources and reserves of mineral properties in Nevada and release as a publicly available database through the NBMG open data portal.

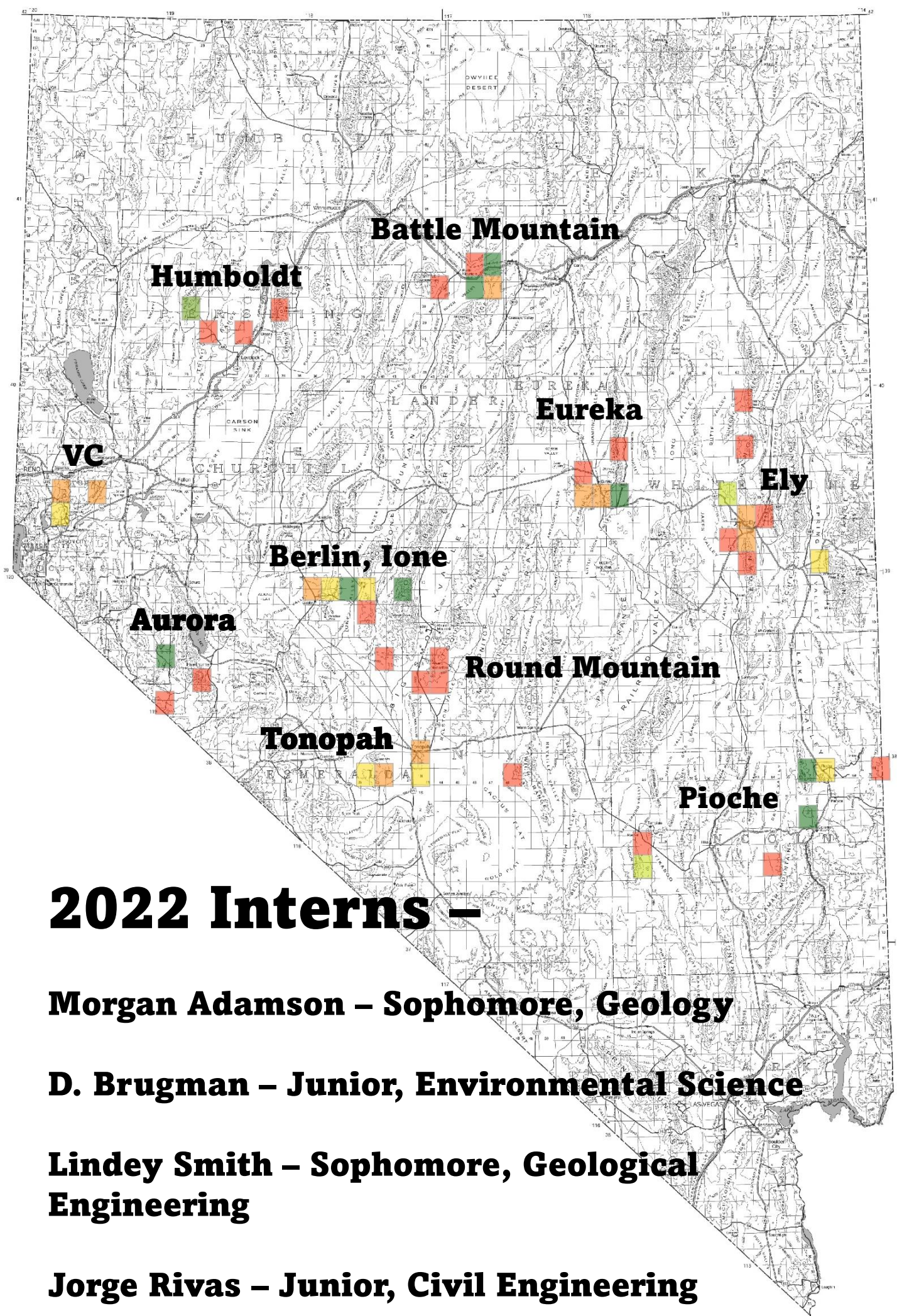
**Timeframe:** July 1, 2022 to June 30, 2024.

**Budget estimate:** \$35,000

### **III. B 2022 AML Summer Intern Program**

#### **Overview**

# 2022 Summer Field Season



## 2022 Interns –

**Morgan Adamson – Sophomore, Geology**

**D. Brugman – Junior, Environmental Science**

**Lindey Smith – Sophomore, Geological Engineering**

**Jorge Rivas – Junior, Civil Engineering**

**Ab Clayson – Sophomore, Mine Engineering**

**Warren Austin – Sophomore, Mine Engineering**

### **III. C The McCaw School of Mines Exhibit Proposal**





May 5, 2022

Nevada Commission on Mineral Resources  
Attn: Chairperson Josh Nordquist  
400 W. King St., Suite 106,  
Carson City, Nev. 89703

To the Nevada Commission on Mineral Resources,

The McCaw School of Mines Foundation respectfully requests the Nevada Commission on Mineral Resources' approval to allocate funding for the creation of a modern mining multi-media projection exhibit. Educating the public on the diversity of career paths, including technical trades and college degrees, the safety methods used to protect miners, and the environmentally considerate yet effective processes are some of our goals of this exhibit.

The McCaw School of Mines, located on the campus of Gordon McCaw Steam Academy in Henderson, Nevada, is a non-profit educational foundation formed under IRS 501(c)3. Serving our community for over 25 years, McCaw School of Mines has welcomed over 100,000 elementary students on field trips.

We are seeking to update our antiquated exhibits showing "modern" mining. We have reached out to our industry stakeholders and community partners to assist us in this effort. We understand that you have considered in-kind donations similar to this in the past and would like to offer a proposal for your consideration to update one of our mining exhibits.

Please find a short exhibit proposal attached to this letter. We strongly believe that the following proposal, if brought to fruition, will enable us to properly convey to the Nevada public the skills, technology, and processes used in 21st century mining.

If you have any questions, please feel free to contact me at any time. Thank you for your considerations.

Respectfully submitted,

Philip Luna  
Executive Director

Garrett Wake  
**Chair**

Jeffrey Sarmiento  
**Vice-Chair**

Janet Dobry  
**Secretary**

Cindy Creighton  
**Treasurer**

Philip Luna  
**Executive Director**

P.O. Box 91208 Henderson, NV 89009

702.799.0544 McCawMines.org   @TheMineExperience

## MODERN MINING MULTI-MEDIA PROJECTION PROJECT

The Vision of the McCaw School of Mines is to educate Nevada's youth and the broader public on the importance of mineral resources.

Our Mission is to provide free or low-cost field trips for Nevada's students and host public days which serve to educate, enrich and entertain all who visit the McCaw School of Mines on the impact mineral resources have on our lives.

We believe that making the connection between mineral use and the process by which minerals are obtained (mining) is critically important. Our efforts focus on making this connection with all who visit. We execute our Mission and exemplify our Vision and Purpose through providing information on Nevada's rich mining history, mineral uses in society, historic versus modern mining practices, and the many STEM careers available in today's technology-focused mining industry.

It is becoming increasingly difficult to obtain, install and maintain ever changing equipment and exhibits that display modern mining experiences. Our response to this challenge is to install multi-media systems to showcase modern mining experiences rather than having the actual equipment and machines on-site. With multi-media experiences, as the mining processes and equipment change we can update our presentations.

The 3-D multi-media projection project being conceived would include:

- Projection Unit (front or rear projection screen based on final installation site decision)
- Up to 9' square projection screen
- Audio support system
- Support hardware systems
- 3-D video footage with accompanying audio tracks
- Red/Blue 3-D participant glasses (reusable)

The initial video content would showcase on-site modern mining techniques in the areas of drilling, blasting, mucking, ground support, milling/processing and reclamation.

The location for the first multi-media projection unit would be in one of our existing rooms inside our simulated underground mine as shown below. These walls can accommodate a video screen of up to 9 feet.





The estimated costs for the multi-media projection project would be:

Hardware & Services:

• Projection Unit	\$ 5,000
• Up to 9' square projection screen	\$ 3,000
• Audio support system	\$ 3,500
• Support hardware systems	\$ 1,500
• Voiceover Services	\$ 2,000
Sub-total	\$15,000

Production Options:

• 5-minute video and audio package in 4k or higher res or	\$35,000
• 5-minute video and audio package in 3-D	\$60,000

Total Project Options:

Total estimated Standard Video total project cost	\$50,000
Total estimated 3-D Video total project cost	\$75,000

### **III. D Strategic Planning Session for** **Biennial Budget Fiscal Years 2024-25**

## **Agenda Item III. D.**

### **Proposal to add GIS Analyst Position to Agency's FY24/25 Budget Submission**

Due to increased utilization and the embedded nature of Geographic Information Services (GIS) throughout the Division's many programs, we are proposing to add one FTE as an unclassified GIS Analyst to be based in the Carson City office. This particular staff addition can only occur through the biennial budgeting process as part of the agency's budget submission to the Governor's Finance Office for consideration as part of the Governor's Recommended Budget to be considered by the Nevada Legislature during the 2023 Legislative Session.

Our current lead GIS person, Lucia Patterson, is classified as a Field Specialist, but since starting in September of 2014 the Division has rapidly increased its incorporation of GIS and her role has evolved into predominantly a GIS Specialist in support of the AML, Fluid Minerals, Public Outreach, and Mining Registry programs. The future of GIS is growing exponentially (see attachment) and will remain critical to all our programs. She is currently at the legislatively approved salary cap for the Field Specialist position. Our proposal would be to create a new GIS Analyst position benchmarked to the salary range for a classified GIS Analyst III position (Grade 38), currently \$58,380 - \$87,320 (Employee/Employer Pay Contribution schedule). This would represent a 21.8% increase to existing Field Specialist salary cap. For reference, a description of the four classified GIS Analyst positions and requirements is attached.

If legislatively approved, the position can be filled no sooner than October 1, 2023. If the position was filled through an internal transfer, it would result in a vacancy in a Field Specialist position, which when filled would be dedicated almost exclusively to the AML program as it continues to grow.

The annual financial impact for salary and benefits paid by the agency would be approximately \$114,000 per year, though 25% less in the first year due to start date. Additional costs on a per FTE basis, for IT, travel, office-related are estimated at \$31,000 per year. No significant changes to the office floorplan are anticipated.



**STATE OF NEVADA**  
**Department of Administration**  
**Division of Human Resource Management**

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**CLASS SPECIFICATION**

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
GIS ANALYST IV	40	B	6.343
GIS ANALYST III	38	B	6.342
GIS ANALYST II	36	B	6.341
GIS ANALYST I	33	B	6.340
GIS ANALYST TRAINEE	31	B	6.339

**SERIES CONCEPT**

GIS Analysts are responsible for designing, implementing, supporting and administering all aspects of a department's and/or division's enterprise geographic information system.

Develop and maintain the Geographic Information Systems (GIS) which may include any of the following: maintenance of the statewide road network, calibrated linear referencing methods and associated GIS data layers and/or maintenance of the enterprise GIS servers, databases, associated data layers, web maps and other GIS data products as needed; ensure agency business units' ability to integrate and synchronize business data.

Plan, design, modify, implement and administer multiple spatial databases; develop and enforce administration procedures and security standards; facilitate and monitor multi-user versioned editing and viewing workflows; design, implement and monitor spatial database security, performance and availability; create database objects, user and roles; create and maintain spatial database replication environment, schedule and monitor replica synchronizations; test and perform software updates.

Install, configure and administer GIS Server application software; create, optimize, publish and monitor multiple web map, feature, geoprocessing, and search services on the intranet and internet; document web service data source dependencies.

Develop, implement, document and enforce GIS server-related administration procedures and security standards; monitor system utilization and responsiveness, and tune server configurations to enhance performance and ensure availability of published services; test and perform software updates; collect user requirements, design, write, test, deploy and maintain multiple statewide custom GIS software applications using multiple programming languages; develop and enforce GIS application-related operational procedures and security standards; adhere to software development best practices, maintain code in shared source code repositories, and maintain technical currency with coding techniques and relevant Information Technology (IT) and GIS technologies.

Analyze user requirements, existing business workflows, policies, regulations and statutes to develop and implement enhanced GIS-based solutions and workflows; determine project objectives by analyzing user needs through consultation with end users, technicians, analysts, management and vendors; review available hardware and/or software tools to choose appropriate implementation platform; identify required sequencing of steps and coordination with other personnel; execute project steps and ensure that project deliverables meet customer requirements; provide technical support to end users in order to resolve software and database related issues.

Design, implement and maintain GIS datasets and perform quality assurance/quality control procedures and corrections; perform spatial analyses and interpret and communicate analytical results; use Global Positioning System (GPS) hardware and software to collect and validate data in the field; may utilize Unmanned Aerial Systems (UAS) consisting of hardware, to include Unmanned Aerial Vehicles (UAV), to collect data in the field and use associated software to post process and validate collected data; produce digital and printed cartographic products using GIS software.

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### SERIES CONCEPT (cont'd)

Coordinate and conduct formal and informal training sessions to educate end users on the usage of off-the-shelf and custom GIS software; coordinate with internal and external entities to disseminate and share GIS data, and collaborate on GIS projects.

Perform related duties as assigned.

\*\*\*\*\*

### CLASS CONCEPTS

**GIS Analyst IV:** Under administrative direction, performs duties outlined in the series concept and, in addition, manages GIS functions for the department/division and supervises subordinate GIS Analyst III positions to include performance evaluations, work performance standards, work assignment and review, scheduling, training and discipline and may supervise technical and administrative staff as assigned. The incumbent is responsible for ensuring the provision of timely, efficient, and cost-effective GIS products and services including the development and maintenance of GIS applications, tools, enterprise GIS databases, and linear referencing systems as needed to meet operational and decision support needs.

Manage the design, development, enhancement and delivery of GIS products and services to meet on going and ad hoc business and information needs; manage development and maintenance of geospatial data layers and databases; manage and may participate in the design and development of GIS applications and tools to automate processes and facilitate analyses and reporting; coordinate the delivery of services and sharing of data with other departments and outside entities; research alternatives and recommend appropriate, cost effective technology solutions.

Oversee and participate in the design, development, integration and maintenance of GIS database architectures, data layers and databases; perform highly complex analytical projects, including spatial and other analyses and forecast modeling; analyze, research, develop, implement and maintain processes for enhancing the utilization of GIS technologies and solutions to support internal business requirements and GIS initiatives; work with staff in the planning, design, development, configuration, testing, implementation and maintenance of large-scale GIS applications and web portals, backend processing modules and associated data layers and databases; develop, implement and monitor work plans to achieve goals and objectives.

Analyze and evaluate technology solutions to ensure their consistency and integration with technology standards; participate in developing enterprise GIS policies, standards and procedures; serve as an expert resource and provide advice to agency staff and other departments or agencies on complex GIS technical issues; may serve on steering committees and advisory groups to foster cooperation and ensure consistent practices for storage, sharing, maintenance and utilization of geospatial data; write reports and prepare custom maps and other GIS products.

Participate in the preparation and evaluation of proposals, bids, contracts and service agreements for GIS software, equipment and consulting services; may administer contracts; develop or assist in the development of the GIS budget; monitor expenditures against budget; participate in the development, implementation and evaluation of goals and objectives; supervise and oversee development, implementation and evaluation of programs, work processes, systems, policies and procedures to achieve annual goals, objectives and work standards; serve as a technical expert to departmental, district, and divisional managers and advises on the design and uses of GIS technologies and products that will improve business process efficiency and enhance support for decision and policy making. This is the managerial level in the series.

**GIS Analyst III:** Under general direction, incumbents perform the full range of duties outlined in the series concept and function as technical expert and project manager over either: design, development, testing, implementation and maintenance of large-scale or highly complex departmental and/or divisional GIS software

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## CLASS CONCEPTS (cont'd)

### **GIS Analyst III:** (cont'd)

applications, tools, and backend processing modules; **OR** data management projects, and associated data layers and databases. Incumbents review GIS products for accuracy, completeness and aesthetics and for compliance with customer requirements; evaluate GIS technologies and solutions; develop policies, standards and procedures; develop plans and approaches to meet project objectives; oversee or perform complex technical work associated with projects and ongoing assignments; guide and mentor other GIS professionals and/or those utilizing GIS; develop training materials and conduct training for GIS professionals and/or other staff as assigned; and supervise a staff of lower level GIS Analysts. This is the supervisory level in the series.

**GIS Analyst II:** Under general supervision, incumbents perform the full range of duties outlined in the series concept and participate in design, testing, implementation and maintenance of GIS software applications, tools, data management projects, and associated data layers and databases. Incumbents perform spatial analyses such as buffering, spatial overlays and distance calculations using established methods and procedures; assist in the evaluation of GIS technologies and solutions and the development of GIS policies, procedures and standards. This is the journey level in the series.

**GIS Analyst I:** Under close supervision, incumbents continue to receive training in performing the duties described in the series concept. This is the continuing trainee level in the series and progression to the next level may occur upon meeting minimum qualifications, satisfactory performance, and with the recommendation of the appointing authority.

**GIS Analyst Trainee:** Under close supervision, incumbents receive training in performing the duties described in the series concept. This is the trainee level in the series and progression to the next level may occur upon meeting minimum qualifications, satisfactory performance, and with the recommendation of the appointing authority.

\*\*\*\*\*

## MINIMUM QUALIFICATIONS

### **INFORMATIONAL NOTE:**

- \* Certification as a Geographic Information Systems Professional (GISP) from the GIS Certification Institute is equivalent to one year of work experience.

### **GIS ANALYST IV**

**EDUCATION AND EXPERIENCE:** Bachelor's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and four years of professional GIS experience which included GIS/GPS data collection, analysis and validation; GIS software application development; and/or cartographic design. Two years of this experience must have also included project management in one or more of the following: spatial database development and management, GIS application development, and/or GIS application server administration; **OR** an Associate's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and five years of professional GIS experience as described above; **OR** graduation from high school or equivalent education and six years of professional GIS experience as described above; **OR** one year of experience as a GIS Analyst III in Nevada State service; **OR** an equivalent combination of education and experience as described above. (*See Informational Note*)

**ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES** (required at the time of application):

**Detailed knowledge of:** capabilities and functionality of at least one major GIS software suite; enterprise

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## MINIMUM QUALIFICATIONS (cont'd)

### GIS ANALYST IV (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at the time of application): (cont'd)  
database management systems; project management techniques and/or software application development methodologies; two or more general purpose programming or scripting languages; critical spatial and non-spatial datasets. **Working knowledge of:** GIS system architecture design and planning; multiple enterprise database management systems and/or linear referencing and dynamic segmentation. **Ability to:** develop and prioritize task lists and resolve problems; supervise and mentor assigned staff; *and all knowledge, skills and abilities required of the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):  
**Detailed knowledge of:** State and departmental regulations and policies concerning information security, purchasing and personnel administration; critical departmental spatial and non-spatial datasets and their relationship to the enterprise GIS system; application of linear referencing and dynamic segmentation techniques to GIS data; major state and federally mandated reporting requirements that include or rely upon GIS data.

### GIS ANALYST III

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and three years of professional GIS experience which included GIS/GPS data collection, analysis and validation; GIS software application development; and/or cartographic design. One year of this experience must have also included one or more of the following: spatial database development and management, GIS application development, and/or GIS application server administration; **OR** an Associate's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and four years of professional GIS experience as described above; **OR** graduation from high school or equivalent education and five years of professional GIS experience as described above; **OR** one year of experience as a GIS Analyst II in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at the time of application):  
**Detailed knowledge of:** structured query language (SQL); spatial data validation techniques; spatial topologies; GIS analysis tools; multi-user GIS editing workflows. **Working knowledge of:** linear referencing and dynamic segmentation and/or server and web-based GIS technologies; mobile GIS technology and GPS data collection; enterprise spatial databases and database security; map services. **Ability to:** create GIS software add-ins and stand-alone programs or web mapping applications or write moderately complex scripts to automate GIS processes; install and administer spatial databases; install and administer GIS application server software and publish map services; integrate non-spatial data with the enterprise linear referencing system and/or related GIS systems and dynamically segment data; automate routines to make corrections to improve database quality; develop geospatial data structures to model complex interrelated geographic features; lead highly complex GIS development and maintenance projects; manage and perform highly complex analytical projects; serve as an expert resource to other GIS specialists and end users; *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):  
*(These are identical to the Entry Level Knowledge, Skills and Abilities for GIS Analyst IV.)*

### GIS ANALYST II

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in geographic

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## MINIMUM QUALIFICATIONS (cont'd)

### GIS ANALYST II (cont'd)

#### EDUCATION AND EXPERIENCE: (cont'd)

information systems, geography, cartography, computer information systems, or a closely related field and two years of professional GIS experience which included GIS/GPS data collection, analysis and validation; GIS software application development; and/or cartographic design; **OR** an Associate's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and three years of professional GIS experience as described above; **OR** graduation from high school or equivalent education and four years of professional GIS experience as described above; **OR** one year of experience as a GIS Analyst I in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Informational Note)*

#### ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

**Detailed knowledge of:** basic GIS software functionality, spatial relationships; theories, principles, and concepts related to GIS technology; geoprocessing and editing tools, and spatial data validation techniques; GIS analysis tools. **Working knowledge of:** spatial topologies; structured query language (SQL); cartographic principles, map projections and coordinate systems. **General knowledge of:** map services; enterprise spatial databases; multi-user GIS editing workflows; linear referencing and dynamic segmentation; mobile GIS technology and GPS data collection. **Ability to:** collect user requirements and design GIS datasets/databases that includes data validation and quality assurance mechanisms; solve moderately complex GIS problems; differentiate between common GIS- and IT-related problems; write basic scripts to automate GIS processes; effectively train and mentor low-level users and end users in the use of GIS Software; solve moderately complex GIS software problems and assist end users with second-level technical support; perform moderately difficult spatial analyses; *and all knowledge, skills and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):  
*(These are identical to the Entry Level Knowledge, Skills and Abilities required for GIS Supervisor.)*

### GIS ANALYST I

EDUCATION AND EXPERIENCE: Bachelor's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and one year of professional GIS experience which included GIS/GPS data collection, analysis and/or validation; GIS software application development; and/or cartographic design; **OR** an Associate's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field and two years of GIS experience as described above, to include at least one year of professional GIS experience; **OR** graduation from high school or equivalent education and three years of GIS experience as described above to include at least one year of professional GIS experience; **OR** an equivalent combination of education and experience as described above. *(See Informational Note)*

#### ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

**Working knowledge of:** basic GIS software functionality; spatial relationships; theories, principles, and concepts related to GIS technology. **General knowledge of:** basic cartographic principles, map projections and coordinate systems; sources of information and research techniques; problem-solving methods. **Ability to:** create a map layout suitable for printing, edit GIS data, perform spatial and attribute queries, label features on a map; solve simple GIS software problems and assist end users with first-level technical support; understand and utilize computer systems and GIS software; make mathematical and statistical computations including addition, subtraction, multiplication, division and algebra; establish and maintain effective working relationships with others; *and all knowledge, skills and abilities required at the lower level.*



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### MINIMUM QUALIFICATIONS (cont'd)

#### GIS ANALYST I (cont'd)

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):  
*(These are identical to the Entry Level Knowledge, Skills, and Abilities required for GIS Analyst II.)*

#### GIS ANALYST TRAINEE

EDUCATION & EXPERIENCE: Bachelor's degree from an accredited college or university in geographic information systems, geography, cartography, computer information systems, or a closely related field; **OR** an Associate's degree from an accredited college or university in geographic information systems, geography, cartography, computer science, computer information systems, or closely related field and one year of paraprofessional GIS experience which included GIS/GPS data collection, analysis and/or validation; GIS software application development; and/or cartographic design; **OR** graduation from high school or equivalent education and two years of experience as described above; **OR** an equivalent combination of education and experience as described above. *(See Informational Note)*

ENTRY LEVEL KNOWLEDGE, SKILLS AND ABILITIES (required at time of application):

**Working knowledge of:** theories, principles and concepts related to Information Technology (IT) or GIS technology. **General knowledge of:** basic GIS principles and practices; sources of information and research techniques related to GIS; problem-solving methods; mathematical and statistical computations; English language sufficient to write grammatically correct business correspondence. **Ability to:** communicate effectively both verbally and in writing; analyze data and reach logical conclusions; write grammatically correct business correspondence; read and understand technical information.

FULL PERFORMANCE KNOWLEDGE, SKILLS AND ABILITIES (typically acquired on the job):  
*(These are identical to the Entry Level Knowledge, Skills and Abilities required for GIS Analyst I.)*

This class specification is used for classification, recruitment, and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this series.

	<u>6.343</u>	<u>6.342</u>	<u>6.341</u>	<u>6.340</u>	<u>6.339</u>
ESTABLISHED:	3/07/13R 6/18/15UC	3/07/13R 6/18/15UC	3/07/13R 6/18/15UC	3/07/13R 6/18/15UC	5/13/19UC
REVISED:	5/13/19UC	5/13/19UC	5/13/19UC	5/13/19UC	

# The Future of GIS – USC Blog

February 23, 2021

You've likely heard plenty about historical trends in the development and use of Geographic Information Science (GIS), but what about where GIS is headed into the future? While it can be difficult to try to prophesize the future of an industry and technology, there are a wealth of clues that hint at and reveal a glimpse of the future of GIS.

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## GIS OF THE FUTURE VS. HERE AND NOW

Before [predicting trends in GIS](#), let's take an inventory of current trends.

“Openness” – of systems, software, and data – has been a growing trend in the technology sector in the past decade, and the “openness” trend has contributed to immeasurable value for GIS technology and practices. In fact, a GIS Professional market and applications survey of more than 200 GIS professionals found that the majority of respondents expect the “openness” trend to continue.

Because this means that more organizations have access to open source GIS software and open data, the number of small businesses making use of GIS continues to grow. Other trends that have been reshaping the GIS market include mobile GIS and visualization, the report found.

Of course, current conditions will have some bearing on the future of GIS. While “openness” was identified as a key market trend, 12% of respondents also said “openness” could be a challenge to market growth – a double-edged sword of sorts. Openness can be challenging to market growth in that it introduces issues around data privacy. While openness is making GIS software more accessible to smaller businesses, there is a fear that this will mean less qualified people will be using GIS without fully understanding how to use spatial data effectively and ethically, leading to more confusion and less advancement of the application and [use of GIS](#).

Other challenges that were identified by survey respondents include data accuracy (32%), efficient data management (31%), and location privacy (8%).

The most common applications of GIS today by businesses include spatial planning (31%), decision making (30%), and asset management (23%), the survey found. But when asked which technological advancements they expect to become key to their organizations in the future, respondents pointed to cloud technology, real-time data, Internet of Things (IoT), 3D GIS, mobile GIS, and UAVs.

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## MOVING BEYOND THE TRADITIONAL GIS APPLICATIONS

It's relatively easy to see how GIS technology is transforming supply chain and asset management, as well as how [GIS is essential to cartography](#) and modern maps. But take a step off the beaten path and consider how GIS might be transforming the virtual world – whether we're talking GIS data visualization or augmented reality and virtual reality. With the rising acceptance and use of AR and VR in the consumer world, the use cases for leveraging [3D GIS will continue to grow](#).

[As Esri President Jack Dangermond wrote](#), “The geospatial industry is quickly evolving because the capabilities of digital connectedness and collaboration are moving ahead exponentially. In fact, the five biggest trends in the area of geographic information system (GIS) technology are centered on making data more accessible and creating context to visualize this data in an age when fast, easy access to information is taken for granted.”

Esri's CityEngine software is one example that Lucy Benton gives that could provide a glimpse of the future of GIS. It allows the production of urban scenes based on real-time, 3D GIS data, so users can plan city architecture, design, and community development.

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## THE GIS AR OPPORTUNITY

GIS of the future may very well be in augmented reality and virtual reality. AR and VR use continues to grow as users become more comfortable with the technology, and this will lead to more and more developers integrating GIS

capabilities into their applications, Benton said. These GIS-enabled AR apps could be used by anyone from architects to oil workers and municipal services to see location and orientation of objects underground. And game developers in the future will likely be using GIS to create virtual worlds to serve as the creative mind's playground.

This is one of the areas where 3D and mobile GIS are likely to converge. Powered by 3D spatial information, mobile GIS applications will be able to create immersive experiences anywhere out in the field. Early examples of this trend can be seen in popular games like Pokémon Go but the potential for immersive AR visualizations is limitless.

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## INDOOR MAPPING, UI, AND IOT

In the same way that GIS is used to make maps of cities and roadways, the technology is now being used to develop indoor maps. While it's still in the early stages of development and adoption, future trends in GIS have indoor mapping likely to skyrocket in popularity in the coming years as people have more of a need to navigate large, complex buildings. For example, more sophisticated and detailed indoor mapping technology may drastically improve safety for emergency responders, who would have improved access to layout, points of entry and other critical information when arriving at the scene of an incident.

One of the biggest changes for developers in the future of GIS will come at the user interface (UI) level, Benton said. "These interfaces will make developing work a lot easier because it will feature an easy-to-understand environment that intuitively helps the user to create, add, edit, and remove elements," she wrote. She later added, "An introduction of the user interface is a major breakthrough because it will make the maps friendlier to developers as well as everyone who uses them."

As Dangermond said, "[M]aps are the visual language for understanding the context of data." Dangermond believes that the next major leap in the future of GIS will be tapping in to the growing network of Internet-connected devices that make up the Internet of Things. By leveraging all the connected devices, GIS practitioners will be able to get even more data in real-time.

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# WHAT IS THE FUTURE OF GIS?

All things taken together, the future of GIS is very optimistic. It's poised for even wider scale adoption than we've seen in recent decades, as more organizations learn how much business value can come from geospatial data. As trends like data analytics, mobility, AR, and IoT continue to take off around the world, we can expect geographic information science and technology not only to be transformed but also to help change the way organizations utilize these technologies.

### **III. E Proposal to Establish and AML Hard Closure Fund**

### **Agenda Item III. E. Proposal to Establish an AML Hard Closure Fund**

#### **The Goal**

The Division has identified approximately 270 AML hazards located on lands owned by counties, municipalities, and various State agencies. Each of these represent a safety hazard to the public and a liability for the owner. The Division is proposing to create a new expenditure category, funded by a transfer from the existing reserves, from which these entities can apply for sufficient funding to perform or contract their own hard closure efforts, thereby protecting the public and mitigating the liability.

#### **Why is this needed?**

NRS 513.108 allows “the board of county commissioners in each county to apply to the Division for money to abate dangerous conditions” (AML), however the funding for this statute is restricted to revenue received under NRS 235.016:

*The Director (of the Office of Finance) shall set and collect a royalty for the use of The Great Seal of the State of Nevada from the mint which produces the medallions or bars. The amount of the royalty must be:*

*(a) Based on the usual and customary fee charged as a commission by dealers of similar medallions or bars; and*

*(b) Adjusted at least once each year to ensure it is competitive with the usual and customary fee.*

*2. The money collected pursuant to this section must be deposited in the Account for the Division of Minerals created pursuant to NRS 513.103.*

Since its inception in 1989, the Medallion Royalty has provided \$35,053.65 in revenue to the Division. On three separate occasions (1995, 2008, and 2013), the Nye County Board of Commissioners requested and received payments from this fund, totaling \$28,049, to abate conditions at the Tonopah Historic Mining Park. The current balance in the fund is \$7,004.65.

A recent query of the AML SOSA database identified approximately 270 AML hazards which are not hard closed having ownership identified as a county, municipality, tribe, or State agency. The estimated cost to perform hard closures of all the features is approximately \$1,000,000, see attachment.

#### **How would this be accomplished?**

The Division is proposing to create, through the submission of a Work Program, a new expenditure category, to be funded by a transfer from the Reserve. The Work Program would need to be approved at the next Interim Finance Committee meeting (August?). Once approved we would send out letters inviting identified entities to submit a proposal for project funding to permanently address the hazards. If approved, an interlocal contract would be created, subject to BOE approval, to define the timeframe, scope of work and funding. While the Division would provide guidance, the work would be performed by the entity or their contractor. Preliminary discussions with a few county managers indicate there is interest in the funding and a desire to perform the work.

#### **How much funding is appropriate?**

While actual costs will vary, the average hard closure cost is approximately \$4,000. To garner interest and provide sufficient funding for several entities to perform the work, the Division is recommending a minimum of \$200,000.

## Summary Count of AML Hazards "Owned" by Entity

ENTITY	# OF AML FEATURES	AML RANKED HIGH	ESTIMATED COST FOR ALL	ESTIMATED COST FOR HIGH ONLY
WALKER RIVER PAIUTE RESERVATION	72	3	\$288,000	\$12,000
TONOPAH TOWNSHIP	55	39	\$220,000	\$156,000
TONOPAH HISTORIC MINING PARK	33	24	\$132,000	\$96,000
NEVADA STATE PARKS	23	5	\$92,000	\$20,000
NYE COUNTY	21	3	\$84,000	\$12,000
UNIVERSITY OF NEVADA RENO	18		\$72,000	
PAHRUMP VALLEY MUSEUM & HISTCL SOC.	15		\$60,000	
CLARK COUNTY	7		\$28,000	
CITY OF BOULDER CITY	6		\$24,000	
CARSON CITY	3		\$12,000	
NDOT	3		\$12,000	
PIOCHE TOWN DISTRICT	3		\$12,000	
WASHOE COUNTY	3		\$12,000	
YERINGTON, CITY OF	3		\$12,000	
WALKER RIVER IRRIGATION DIST	2		\$8,000	
EUREKA COUNTY	1		\$4,000	
PERSHING COUNTY	1		\$4,000	
STOREY COUNTY	1		\$4,000	
WHITE PINE COUNTY	1		\$4,000	
<b>TOTAL</b>	<b>271</b>		<b>\$1,084,000</b>	<b>\$296,000</b>

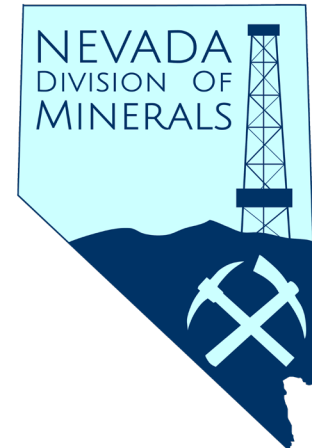


### **III. F Strategic Planning Session for Biennial Budget Fiscal Years 2024-25**

# *Fiscal Year 2024-2025 Budget and Strategic Planning*



**CMR Quarterly Meeting**  
**May 19, 2022**



# Governor's Budget Messages

- Governor's Strategic Planning Framework
  - Goals and objectives for the next 5 years
  - 8 Essential Core Functions of Government
  - Quantitative performance measures for objectives
  - Each primary activity must have at least one performance measure (efficiency, outcome or effectiveness)
- Budgets and Plans must align with the Governor's initiatives



## Core Functions and Priority

<b>ELEVATING EDUCATION</b> Provide every Nevadan with an exceptional education that equips them with future-ready skills necessary for success	<b>GOVERNMENT EFFICIENCY &amp; INNOVATION</b> Provide Nevadans with quality access to government through efficient and innovative services	<b>INFRASTRUCTURE, ENERGY &amp; ENVIRONMENT</b> Build a future for all Nevadans that protects our natural environment and promotes healthy ecosystems, while expanding clean, safe and modern infrastructure throughout the state
<b>IMPROVING SAFETY, SECURITY &amp; JUSTICE</b> Ensure the safety of all Nevadans by modernizing law enforcement, increasing agency collaboration and promoting the fair and equitable administration of law.	<b>ECONOMIC DIVERSIFICATION AND WORKFORCE DEVELOPMENT</b> Ensure all Nevadans have the opportunity to learn, earn and live well	<b>PROMOTING HEALTHY &amp; RESILIENT COMMUNITIES</b> Improve the quality of life for all Nevadans by ensuring access to services and opportunities that build healthy, resilient communities

# Meeting the Governor's Core Functions and Priority

- Elevating Education
  - NDOM's Education program in-person and virtual at schools and workshops
  - AML Internship program
- Government Efficiency and Innovation
  - NDOM Open Data sites and agency website provide delivery of information to public and businesses
  - AML program enhancements
- Infrastructure, Energy & Environment
  - Fluid Minerals Program
- Improving Safety, Security & Justice
  - AML program
- Economic Diversification and Workforce Development
  - Industry outreach, Mines Registry, collect and disseminate information, trade shows, NRS 517 (Claims), NRS 519A (bond pool)

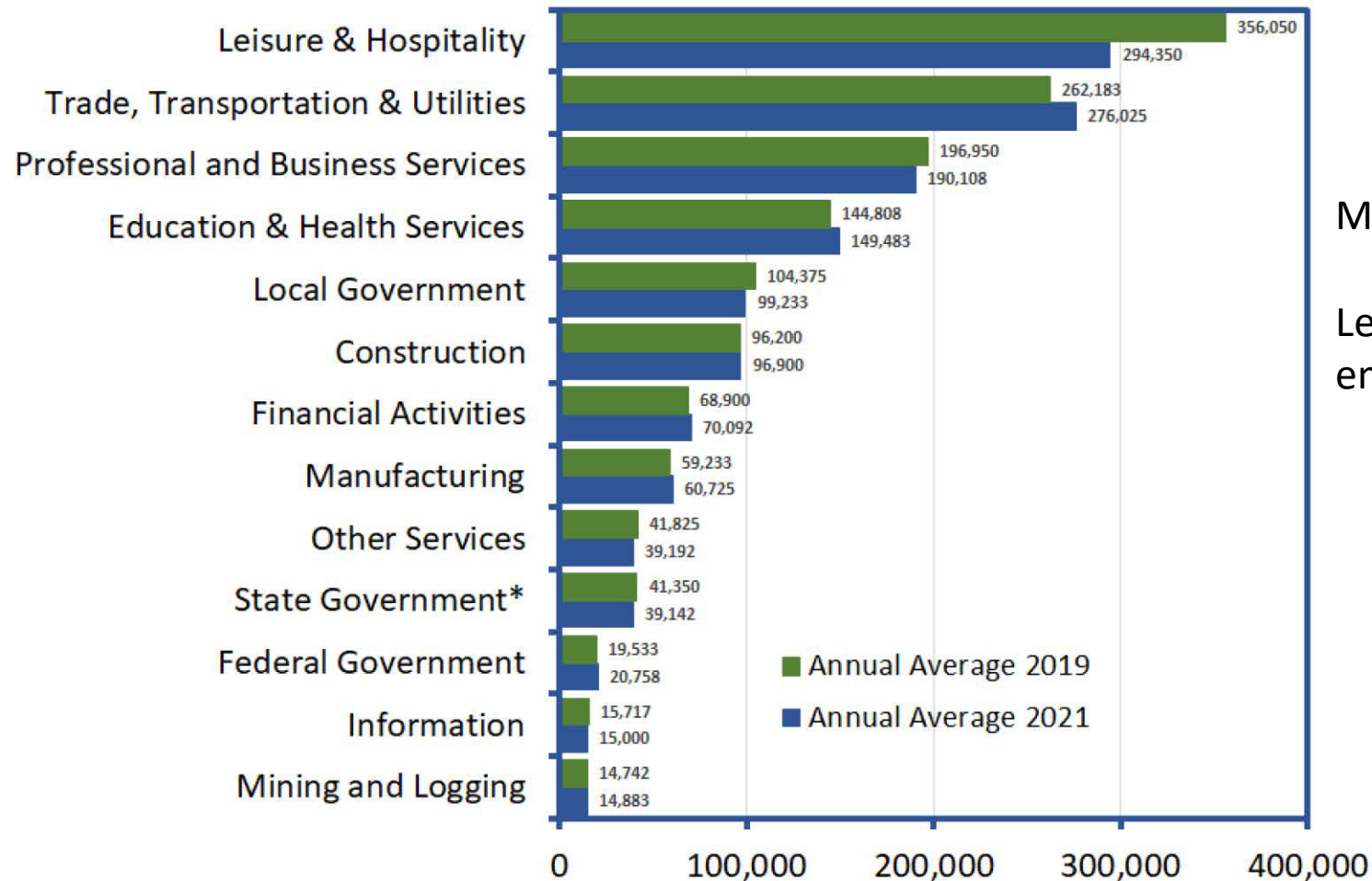


# Strategic Planning Priorities

Governor is asking agencies to consider the following challenges to make state government more effective and efficient:

- What activities do you perform you would stop if you could? What results could be obtained by reprioritizing those resources?
- What new initiatives would you propose? What results would they achieve? How would success be measured?
- What low-cost or no-cost policy or operational ideas would you propose?

# BUDGET KICKOFF 2023 – 2025 Executive Budget



Mining employment =1%

Leisure & Hospitality  
employment =21.5%

\* State Government employment does not reflect budgeted FTE employment

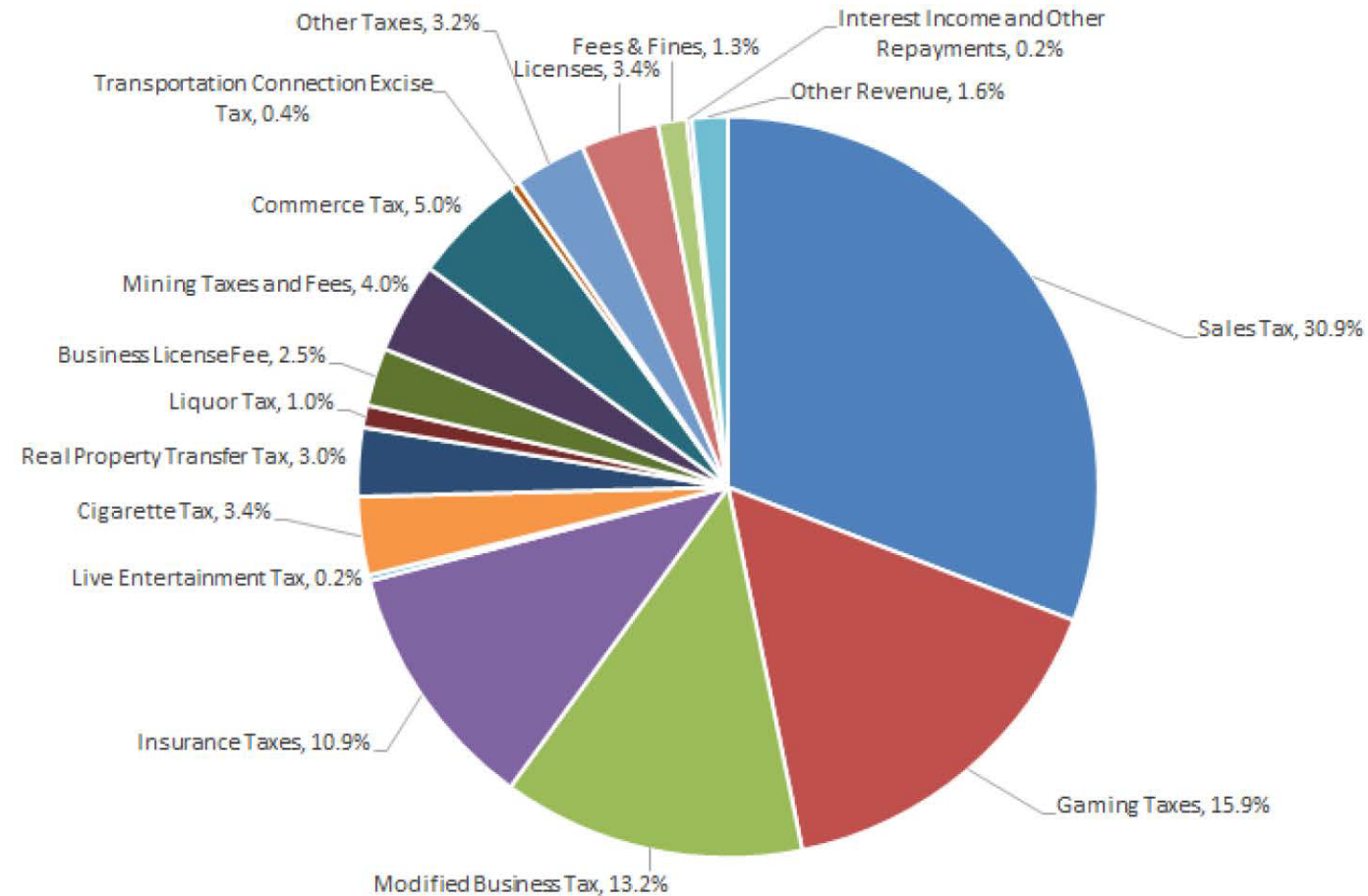
Source: DETR Research & Analysis

Jobs, NSA



# BUDGET KICKOFF 2023 – 2025 Executive Budget

## FY 2021 State Total General Fund Net Revenues



Mining Tax =4%

Leisure & Hospitality  
Tax (gaming)=15.9%



# Building the Budget

- Agency budgets must:
  - Align with Governor Strategic framework
  - Be consistent with legislation passed in 2021
  - Use FY22 Actuals as the base budget
  - Reconcile positions, revenues and expenditures
  - Include justifications and explanations
- Budget submission/Agency Request: Sept. 1
  - Certification letter for budget submission must be signed by Director or Chair.

# Budget Process - NDOM

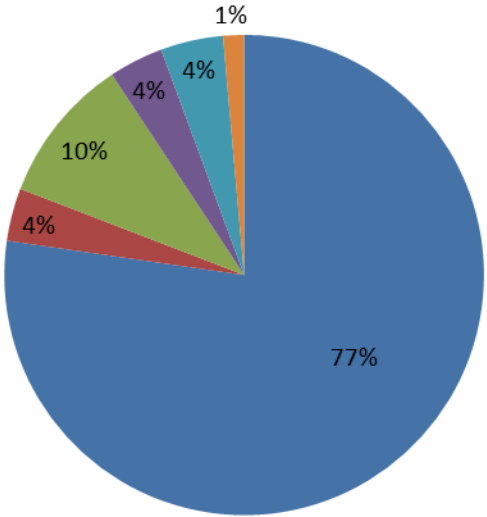
- Today - strategic planning meeting with CMR to provide input on budget initiatives and assumptions
- NDOM builds preliminary budget
- Modification and approval of budget at August CMR meeting.
- CMR Chair signs budget certification letter on/before Aug. 31.
- Submit Agency budget request Sept. 1.

## Agency 500 Commission on Mineral Resources - Performance Measures

Activity	Performance Measure	Description	FY 2019 Actual	FY 2020 Actual	FY 2021 Actual	FY 2022 Forecast	FY 2023 Forecast	FY 2024 Forecast	FY 2025 Forecast
Safety Programs	Percent of Hazardous Abandoned Mine Openings Secured	Percent of Inventoried Abandoned Mine Land Openings Which Are Currently Secured <b>(Goal: Secured/Inventoried &gt; 70%)</b>	80%	80%	81%	82%	82%	82%	82%
K-12 Education Programs and Services	Minerals Education and AML Presentations per Employee	Number of Minerals Education and Public Safety (Abandoned Mine Land) Presentations Provided to Schools, Civic and Trade Groups Per Employee <b>(Goal: ≥ 24 per Employee)</b>	32.5	26.4	36	45	24	24	24
Well Drilling	Percent of Oil, Gas, and Geothermal Wells Inspected per Year	Percent of Active Oil, Gas, and Geothermal Wells Inspected <b>(Goal: ≥ 33%)</b>	66%	53%	66%	50%	60%	60%	60%

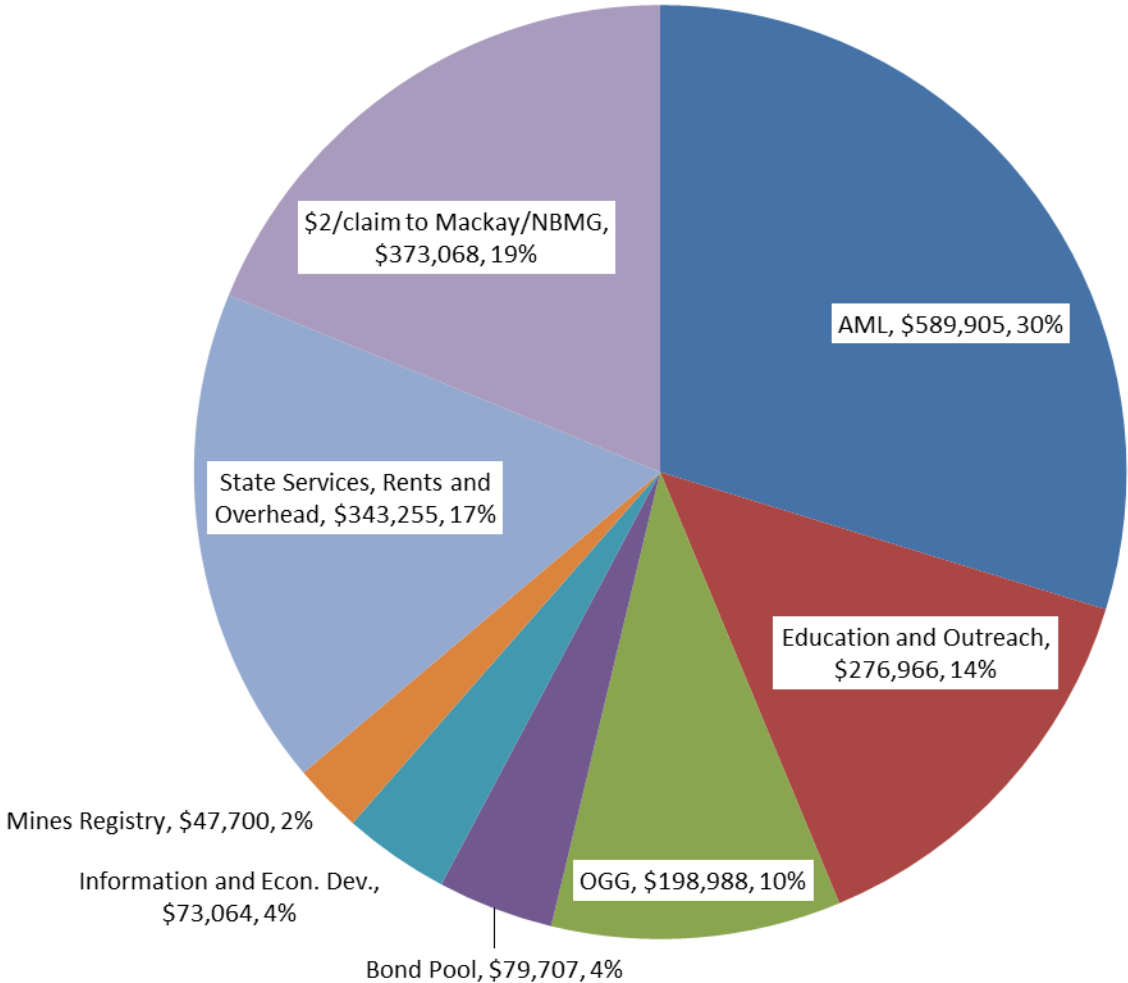
# NDOM REVENUES AND EXPENDITURES, 2016

## FY 16 Revenue (Forecast) \$1,908,024



- Mining Claim Fees (\$8.50/claim)
- BLM and USFS AML Assistance
- Oil, Gas and Geothermal Fees
- Surface Disturbance Fee (\$20/acre)
- Bond Pool Admin. Fee (3%)
- Other

## FY 16 Expenditures (Forecast) \$1,970,278



NDOM Revenue Assumptions					
	Actual	Forecasted			
	FY21	FY22 (base year)	FY23	FY24	FY25
Claim Fees	\$ 2,411,550	\$ 2,560,000	\$ 2,560,000	\$ 2,457,600	\$ 2,359,296
Geothermal Fees	\$ 143,850	\$ 158,000	\$ 158,000	\$ 158,000	\$ 158,000
Oil & Gas Fees	\$ 30,636	\$ 23,500	\$ 28,500	\$ 28,500	\$ 28,500
Dissolved Mineral Fees	\$ -	\$ 10,000	\$ 8,000	\$ 8,000	\$ 8,000
Bond Pool Admin	\$ 63,695	\$ 58,000	\$ 60,000	\$ 60,000	\$ 60,000
Federal Assistance (AML)	\$ 230,512	\$ 356,000	\$ 280,000	\$ 280,000	\$ 280,000
Surface Distrubance Fee	\$ 102,180	\$ 91,000	\$ 80,000	\$ 80,000	\$ 80,000
Other (including interest)	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000	\$ 15,000

NDOM EXPENDITURE ASSUMPTIONS				
	<u>FY 2022</u>	<u>FY 2023</u>	<u>FY 2024</u>	<u>FY 2025</u>
01- HR	11 FTE	11 FTE	12 FTE	12 FTE
02- Out of State Travel	\$23,365	\$25,000	\$25,000	\$25,000
03- In-State Travel	\$12,049	\$12,900	2023 + 10%	2023 + 10%
04- Operating Expense	\$112,893	\$113,134	2023 + 5%	2023 + 5%
08- Board Travel	\$2,200	\$7,128	\$7,128	\$7,128
09- Special Projects	\$144,200 (Continuation of NBMG, PDAC, AME, NvMA) + \$37.8 RRV Rpt + \$50k Discovery exhibit	\$144,200	\$144,200 + \$40k Soda Lake Geo Rpt	\$144,200
14- Las Vegas Office	\$44,078	\$44,078	\$44,078	\$44,078
17- Fluid Minerals	\$11,981	\$11,983	\$14,000	\$14,000
18- AML	\$195,179 (intern per diem, materials, vehicle)	\$197,087 (intern per diem, materials, vehicle)	2023 +10%	2023 +10%
26 82 - IT Services	\$40,701	\$35,871	2023 +10%	2023 +10%
39- AML Enhancement	\$1,072,290 (\$800k contracted closures, \$50k CI Cty revisits, \$30k LV UTV, \$50k geo analysis, \$75k cultural, \$10k helo, \$20k billboards)	\$1,125,000 (includes \$120k digital campaign)	\$1,005,000	\$1,005,000

# BUDGET DECISIONS & CMR DISCUSSION

- Continue Nevada's presence at exploration trade shows to attract investment capital – PDAC and AME Roundup
- Expand the open-data website and look for additional ways to educate the public on exploration and mining
- Continue to fund specific reports, on an annual CMR approval basis, at NBMG: Bi-annual Exploration Survey, Annual MI Report, MM & Map, curation of cuttings, Special Reports, etc.
- Continue to increase AML hard closure contracted work and prepare for more Federal \$ toward AML (BIL 40704)
- Create new ways to incorporate Local Government AML work
- Create new GIS Analyst Position
- Are the Performance Measures adequate?
- Are there any new initiatives the CMR would like to see addressed by NDOM staff over the next 2 years?



# Budget Cycle

- Agency Request
  - Due 5:00PM Thursday September 1, 2022
- Governor Recommends
  - Budget Message and Summary
  - Line-Item Detail
  - Economic Development Incentives
  - Recommended Legislation
- Legislatively Approved
  - Session starts February 6, 2023
  - Session ends June 6, 2023
- Resources on the Budget Division website ([www.budget.nv.gov](http://www.budget.nv.gov))

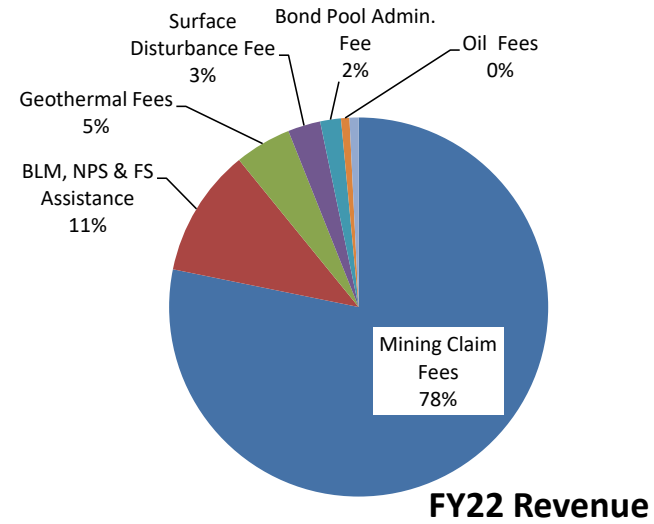


## **IV. OLD BUISNESS**

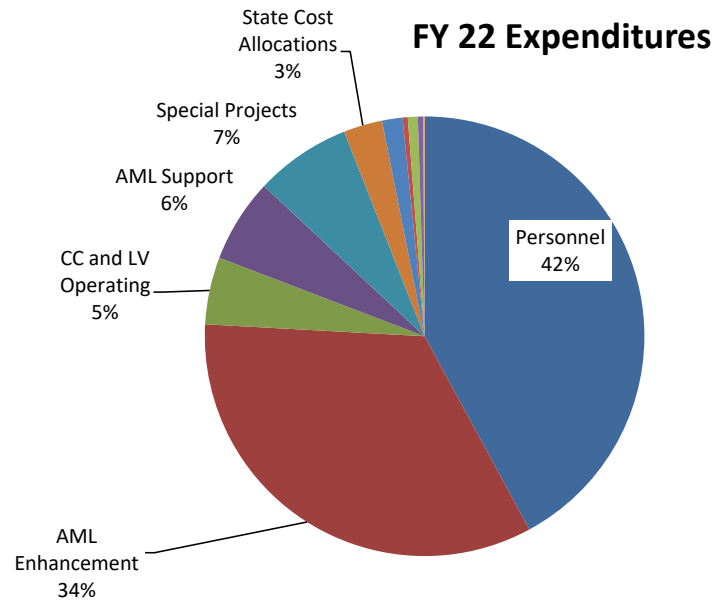
## **IV. A Financial Update**

## Fiscal Year 2022 Forecast Revenue and Expenditures

Revenue Categories	FY22 Revenue	% YOY
Mining Claim Fees	\$2,560,000	6%
BLM, NPS & FS Assistance	\$358,136	55%
Geothermal Fees	\$158,000	10%
Surface Disturbance Fee	\$91,000	-11%
Bond Pool Admin. Fee	\$58,000	-9%
Oil Fees	\$23,500	2%
Other (incl. Interest)	\$25,351	-1%
<b>Total</b>	<b>\$3,273,987</b>	<b>9%</b>



Expenditure Categories	FY 22 Expenditures	% YOY
Personnel	\$1,336,101	16%
AML Enhancement	\$1,072,290	123%
CC and LV Operating	\$156,971	23%
AML Support	\$195,179	33%
Special Projects	\$224,506	7%
State Cost Allocations	\$90,693	-6%
Computer, IT, Training	\$47,793	-1%
Fluid Minerals	\$11,981	58%
Out-of-State Travel	\$23,365	#DIV/0!
In-State Travel	\$12,049	478%
Other	\$1,297	-87%
CMR Travel	\$2,200	421%
<b>Total</b>	<b>\$3,174,425</b>	<b>39%</b>

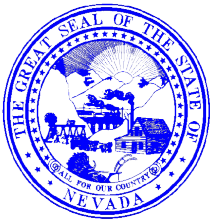


CMR-Division of Minerals - 2021-2025 Budgets and Forecasts (as of 5/10/2022)									
Revenue									
GL #	Description	FY21 Actuals	FY22 Budget	FY22 YTD	FY22 Forecast	FY23 Forecast	FY24 Forecast	FY25 Forecast	Remarks
2511	Balance Forward Previous Year	1,871,712	2,585,143	2,585,143	2,585,143	2,684,705	2,704,804	2,596,148	
3578	BLM Grant	202,473	200,000	53,730	200,000	200,000	200,000	200,000	BLM grant funding AML work. \$200k grant awarded 9/6/21, anticipate similar amount thru FY25
3580	USFS Assistance Agreement	28,039	10,772	80,349	80,349	80,000	80,000	80,000	USFS assistance funding AML work
3584	NPS Grant		94,092	77,787	77,787	0	0	0	National Park Service funding for AML work (unknown future funding)
3654	Oil Production Fee	20,508	37,907	17,105	20,000	25,000	25,000	25,000	\$0.15 per bbl fee for oil production annually (\$0.05 from 12/20 - 10/21)
3717	Oil Permit Fees	2,500	3,300	3,200	3,500	3,500	3,500	3,500	Permit fees for new oil and gas wells
3718 & 3727	Mining Claim Fees	2,411,550	2,114,150	2,455,100	2,560,000	2,560,000	2,457,600	2,359,296	Mining Claim fees @ \$10/claim filing, flat for FY23, -4% for FY24, -4% for FY25
3736	Geothermal Fees	143,850	160,800	153,050	158,000	158,000	158,000	158,000	Annual fee and permit fees for geothermal wells and permitting
3740	Dissolved Mineral Resource Fees	0	2,000	8,000	10,000	8,000	8,000	8,000	Permit fees for DMR (lithium brine) well permits
3770	Surface Disturbance Fee (AML)	102,180	81,740	28,040	91,000	80,000	80,000	80,000	\$20 per acre fee for new mine surface disturbance, FY23=12-year avg.
4011	Copy Machines - Sales to Public	15	27	0	0	0	0	0	Copying charge for Public Records Request
4027	Publication Sales (AML signs)	1,556	1,210	2,621	2,100	2,100	2,100	2,100	AML signs sold at office
4311	Medallion Royalty Fee	788	1,304	253	253	500	500	500	Fee for minting of medallions with State seal remitted to NDOM
4326	Treasurer's Interest	12,998	40,990	7,742	12,998	12,998	12,998	12,998	Interest we receive for money deposited with Treasurer
4620	Transfer from Recl. Bond Pool	63,695	80,793	0	58,000	60,000	60,000	60,000	Fee from Bond Pool for NDOM Management
4669	CARES Act Reimbursement	10,320			0	0	0	0	Federal funds used to offset pandemic related expenditures
	REVENUE TOTAL	\$4,872,185	\$5,414,228	\$5,472,120	\$5,859,130	\$5,874,804	\$5,792,502	\$5,585,542	
Expenditures									
CAT #	Description	FY21 Actuals	FY22 Budget	FY22 YTD	FY22 Forecast	FY23 Forecast	FY24 Forecast	FY25 Forecast	Remarks
01	Personnel (Sal.,WC, PERS,OT)	1,156,212	1,296,101	913,149	1,336,101	1,372,893	1,428,611	1,457,168	FY22/23 is as in Leg-Approved Budget plus \$40k (OT), 1% COLA (FY23), plus \$30k retirement payout ('23), <b>FY24 +86k new GIS (9 mos.), FY25 +114k (GIS)</b>
02	Out-of-State Travel (Staff, CMR)	0	23,365	4,547	23,365	25,000	25,000	25,000	FY22/23 as in budget
03	In-State Travel (Non-AML)	2,084	12,049	9,383	12,049	12,900	14,190	14,190	Travel, lodging and per-diem within State, as in budget
04	Carson Operating Expenses+Equipment	95,031	112,893	88,688	112,893	113,134	118,791	118,791	Rent, Operating supplies, as in budget
05	Equipment	0	1,297	1,210	1,297	1,706	3,412	3,412	Desks, chairs, as in budget
08	CMR Travel (In-State)	422	7,128	1,459	2,200	7,128	7,128	7,128	As in Budget
09	Special Projects (Mackay, NBMG)	209,936	224,506	88,139	224,506	144,200	184,200	144,200	FY22/FY23 \$97.2k (NBMG), \$27k (PDAC), \$5k (AME), \$15k (NvMA Ed), \$37.8k (FY22 only NBMG-RRV), \$49.5k (FY22 only Discovery Exhibit), <b>\$40k (NBMG Soda Lake Geo FY24)</b>
14	Las Vegas Operating Expenses	32,667	44,078	40,063	44,078	44,078	44,078	44,078	FY22/23 as in budget
17	Fluid Minerals	7,583	15,561	9,791	11,981	11,983	11,983	11,983	Field expenses for OGG and DMRE, as submitted in State Budget
18	AML Support (per diem, trucks, fuel, AML supplies and travel, SOSA supplies)	146,764	195,179	88,014	195,179	197,017	216,719	216,719	Up to 8 summer interns and 3 winters FY22/23; FY22/23 as in State Budget, includes one new truck each year
25	CARES Act Expenditures	10,320	0	0	0	0	0	0	
26 & 82	Computer and IT	43,754	40,701	25,390	40,701	35,871	39,458	39,458	Computer hardware/replacements; EITS services and support
30	Training	4,721	7,092	4,805	7,092	7,092	7,092	7,092	ESRI and other training
39	AML Enhancements(contracts, equip.)	481,463	1,072,290	379,638	1,072,290	1,125,000	1,005,000	955,000	\$800k/yr contracted AML closure and related work. Work not completed in '21 pushed into '22. \$50k/yr CL Cty revisits (thru 24), \$30k LV UTV (FY22), \$50k/yr geo analysis, \$75k/yr cultural surveys, \$10k/yr helicopter surveys, \$20k/yr billboards, \$120k digital media campaign (FY23)
87 & 88 & 89	Cost Allocations (State, Purchasing, AG)	96,085	90,693	75,433	90,693	71,998	90,693	90,693	Purchasing assessment, AG cost allocation, State cost allocation
	EXPENDITURE TOTAL	\$2,287,042	\$3,142,933	\$1,729,708	\$3,174,425	\$3,170,000	\$3,196,355	\$3,134,912	
86	Reserve - Balance Forward to Next Year	\$2,585,143	\$2,271,295	\$3,742,412	\$2,684,705	\$2,704,804	\$2,596,148	\$2,450,631	
					\$1,113,239	\$1,119,804	\$997,970	\$883,175	Reserve Amount in excess of "50% of Expenditures" guidance

## **IV. B Update on Status of Previously Approved AML Enhancement/Special Projects**

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# COMMISSION BUSINESS



STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
400 W. King Street, Suite 106  
Carson City, Nevada 89703  
(775) 684-7040 • Fax (775) 684-7052  
<http://minerals.nv.gov/>



**STEVE SISOLAK**  
Governor

**Las Vegas Office:** 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

**MICHAEL VISHER**  
Administrator

## MONTHLY ACTIVITY REPORTS

### February 2022

#### Administrator - Mike

1. Received a call from Humboldt County Sheriff's Office regarding possible explosives found by the public off Junco Road. Researched the stated location, identified claimant and exploration company. Provided project geologist contact information to sheriff's office. They met later that day in the field and found what turned out to be wiring and a transmitter left behind from a recent geophysical survey.
2. Met several times with representatives from the Treasurer's Office and Wells Fargo Bank to review options for accepting credit card and e-check payments.
3. Attended 3PL Operating's kickoff meeting with state and federal regulators to review their Railroad Valley project.
4. Met with Chris Pattison, Friends of Sutro Tunnel, to review their recent drone/LiDAR survey and discuss their plans for developing the site.
5. Answered general questions from WSJ reporter regarding lithium exploration in Nevada.
6. Provided an update to the Nevada Mineral Exploration Coalition on the renewed EIS efforts to amend the Greater Sage-grouse Land Use Plans and re-initiate the proposed withdrawal in the Sagebrush focal Areas.
7. Conducted research and answered questions from the public regarding mineral estate ownership.
8. Meetings attended: State Environmental Commission, Governor's Cabinet, NvMA Environmental Committee, Mackay Executive Advisory Board, MOAC, multi-agency lithium working group, IOGCC, Sagebrush Ecosystem Council, Greenlink West EIS, UT-NV Cross-Tie EIS, Agency PIOs, Smart from the Start.

#### Deputy Administrator - Rob

1. Bond pool activity in February was limited to one notice-level decrease.
2. Submitted a request for an additional \$200,000 in funding under the current BLM AML grant to be authorized for expenditures. This funding will be utilized for upcoming AML contracted work on BLM lands.
3. Attended the NAAML P winter business meeting. Received updates and information regarding the development of the new Federal Hardrock AML program. Held meetings with IMCC and the NAAML P membership on compiling state data beneficial to the development of the program.
4. Worked with Dustin and Garrett on inventorying the NvMA Earth Science Workshop supplies provided by NDOM via the annual funding support approved by the Commission. We identified items needed over the next year and initiated the purchasing process.
5. Received an approved amendment from the Governor's Finance Office (GFO) for the NBMG contract to extend the deadline for the Lithium Report.
6. Worked with Division of Forestry to develop a Scope of Work for the NDF/NDOM Interlocal contract for use of NDF's helicopters and staff. Waiting for the review and approval from NDF and then submit to GFO in March.
7. Registered for the Top Energy Training (formerly TopCorp) and started the online training portion of the class. The first in-person class is this April in Austin Texas.
8. With Valerie and Mike, met with Merchants Services to start the process of allowing payment by credit card.

Nigel Bain; *Large-Scale Mining*  
Robert Felder; *Exploration and Development*  
Randy Griffin; *Small-Scale Mining and Prospecting*

**Commission on Mineral Resources**  
Josh Nordquist, *Chairman; Geothermal Resources*

Stephanie Hallinan; *Large-Scale Mining*  
Art Henderson; *Oil and Gas*  
Mary Korpi; *Public at Large*



9. Attended the Mining Oversight and Accountability Commission meeting.

10. End-of-February financial summary of bond pool:

Reclamation Bond Pool Status Report			Current to:	3/1/2022				
Plan-level Bonds -Company	Project	Entry Date	Bond Amount	% of Pool	Comments	Deposit	Premiums Paid	% Bond Whole
Allegiant Gold	Eastside	11/19/2021	\$163,064.00	8.23%		\$84,036.27	\$5,761.96	55.1%
Custom Details	Bovie-Lew	11/17/2006	\$14,643.00	0.74%		\$7,328.32	\$18,784.75	178.3%
New Gold Nevada (NV Rae)	Black Rock Canyon	4/15/2005	\$66,673.00	3.37%		\$33,715.62	\$172,042.50	308.6%
SNL Sand LLC	Money Pit	5/21/2004	\$430,088.00	21.72%		\$233,171.91	\$295,336.48	122.9%
Western Mine Dev.	Victorine Mine	5/24/2000	\$45,875.39	2.32%	terminated	\$0.00	\$0.00	
Western Mine Dev.	Kingston Mill	5/24/2000	\$100,450.00	5.07%	terminated	\$0.00	\$0.00	
TNT Venture	Big Canyon	1/27/2010	\$78,161.00	3.95%		\$39,615.03	\$50,929.68	115.8%
Dun Glen Mining	Dun Glen	8/11/2014	\$439,240.00	22.18%		\$238,536.99	\$207,929.61	101.6%
Statewide Notice-Level	Various	various	\$642,125.00	32.43%	53 Notice-level bonds			
Total Bond Amount			\$1,980,319.39					
Cash in Pool's Account (From BSR - 2/28/2022)			\$3,077,714.73					
Unfunded Amount			-\$1,097,395.34					
Percent funded			155.4%					

### **Chief, Abandoned Mine Lands Program - Sean**

1. NDOM contractor EPS (Environmental Protection Services) completed 137 revisits and 22 loggings in Esmeralda County.
2. AML staff met with stakeholders for the Pine Nuts Hard Closure Project to submit final wildlife recommendations to the BLM. NDOM also received approval from BLM of a draft cultural report submitted by Broadbent and Associates. Geological characterization of the project area was completed in February including assay information and a draft report. These developments signal the final steps in the NEPA process for the Pine Nuts Project and set us up for closure work to commence in late May.
3. AML staff reviewed data for recommended hard closure projects setting up 1 and 5- year timelines and submitted lists and survey data to partner agencies for review. This process also included recommendations to contractor TerraSpectra to increase utility of the Hardrock Closure database for NDOM and partner agencies.
4. AML staff responded to public data requests in Nye, Pershing, and Mineral counties.
5. AML staff provided project guidance and data to Battle Mountain BLM for a proposed large-scale hard closure project south of Battle Mountain.
6. AML statistics at the end of February:

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	24,046	19,720	82%
2022 To Date	79	66	84%

### **GIS/ Field Specialist - Lucia**

1. Updated AML photos on server.
2. Worked on updating the topo ranking script for fieldwork prioritization.
3. Attended AME Round up (virtually).
4. Made fluid minerals production charts and maps for Cort's presentation.
5. Finished some updates on the open data site.
6. Generated slope and aspect maps of Nevada for AML feature calculations.
7. Performed data entry from 2021 annual status and production reports received to date.
8. Had a meeting regarding our datasets with a representative from the Sagebrush Ecosystem Technical Team.
9. Generated a script to process the transmission ROW data from MLRS and published these ROWs with buffers on the open data site.
10. Gave a presentation on minerals and cupcake core drilling at Pinion Elementary.
11. Created documentation on OGG lease data pulling strategies.
12. QA/QC EPS field data from first time collecting data with Field Maps, this helped guide them to prevent future mistakes.
13. Published and set up EPS field data for the next round of field work, monitored their worker through a newly created digital dashboard.
14. Prepared for and presented at a career fair in Fallon.

15. Working with Layth (TerraSpectra) to fix server issues, check-in scripts for field maps, and hazard ID issues with field workers.

#### **AML/Fluid Minerals Field Specialist - Dustin**

- 1) Ongoing AML Land Research in Nye County.
- 2) Storage unit inventoried in preparation of the upcoming Teachers Workshop in Las Vegas.
- 3) Reviewed BOP test and cement sheath diagnostics from drillhole at Blue Mountain.
- 4) Met with Fervo and Halliburton representatives to discuss the evaluation of Cement Bond Logs.
- 5) Presented the “Cupcake Core Drilling” presentation to a 4<sup>th</sup> Grade class at Pinon Hills Elementary School, in Minden, NV
- 6) Fielded two requests for AML potential hazard locations. Delivering AML site data within a specified area of interest for the clients.
- 7) Recruited for summer interns at the UNR Career Fair.
- 8) Performed corrections to the Hardrock Closure database.
- 9) Developed charts to visualize Nevada’s oil and geothermal production.
- 10) Completed the mandatory Risk Management Workplace Violence: Recognition and Prevention course.

#### **AML/Public Outreach – Southern Nevada Programs Manager - Garrett**

1. Logged 20 new AML hazards and revisited six hazards near the town of Nelson.
2. Presented on the NDOM AML internship to four college classrooms reaching approximately 60 students.
3. Prepared Revisit Contract data for EPS to perform work in Esmeralda and Clark counties. Contract work resumed in late February 2022.
4. Prepared an expedited hard closure project request for three hazards near Las Vegas. CX request and data forwarded to BLM Nevada State Office and Southern Nevada District Office.
5. Continued to plan for the southern Nevada Earth Science Teachers Workshop at Faith Lutheran High School, April 12-13, 2022.
6. Completed an annual MSHA 8-hr refresher course and a required “Whistleblower” course.
7. Participated in a monthly Remediation of Abandoned Mine Sites (RAMS) meeting with TerraSpectra, a NV Veteran’s Peer Group Meeting, and NDOM Internal Controls policy meeting,

#### **AML/Public Outreach and Education – Southern Nevada Field Specialist - Becky**

1. Completed six presentations “Mineral in Society: How We Use and Obtain Minerals” for 7<sup>th</sup> grade classes at Burkholder Middle School.
2. Hosted live virtual introduction in Mining for a STEAM Education for Spring 2022 participants.
3. Checked in daily on Mining for a STEAM Education to check progress of participants and answer any questions.
4. Completed MSHA refresher course.
5. Attended AML meeting on defining “inventory.”
6. Presented at Greenspun Junior High School to thirteen 7<sup>th</sup> grade classes on Mineral ID and Social Utility.
7. Worked on presentation for Commission on Mineral Resources meeting.
8. Attended Workplace Violence class.
9. Presented “What am I made of?” to four 3<sup>rd</sup> grade classes at Frias Elementary School.
10. Attended meeting on SOSA priority update.

#### **Fluid Minerals Program Manager - Cort**

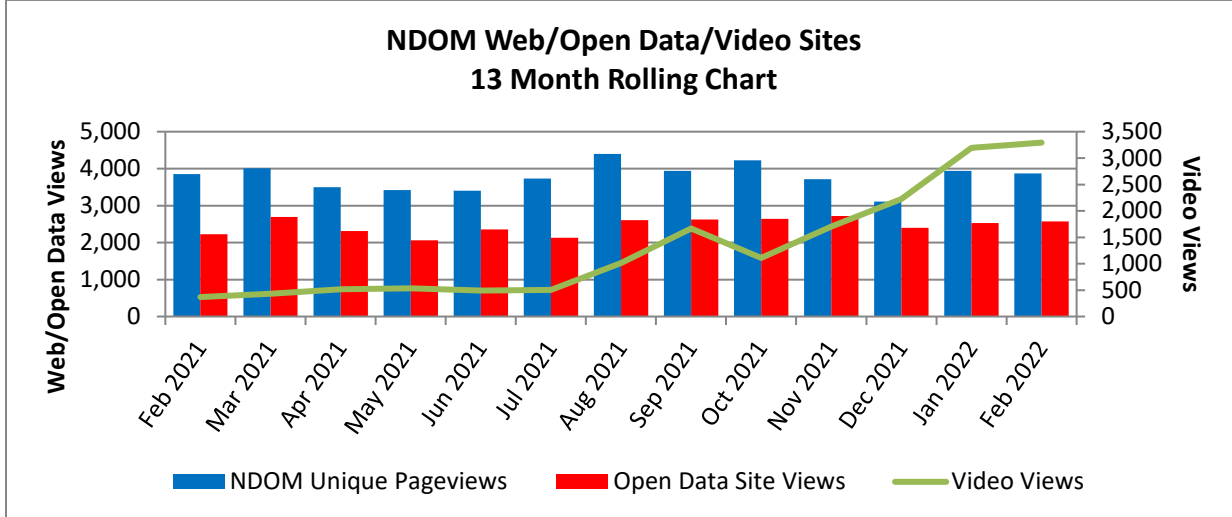
1. No geothermal and no oil permits were issued in February. One DMRE borehole notice was received and was approved. The Scotch Creek Ventures Nevada Inc. MCD-1 was approved in Clayton Valley, Esmeralda County to a depth of 1,300’.
2. 18 geothermal sundries and 1 oil sundry were reviewed in February.
3. Reached out to operators to have them correct well status on shut-in or active wells.
4. The Blue Mountain 73-22 reached TD and operator is preparing to run casing.
5. Continued training new hire Dustin Holcomb for Fluid Minerals Program activities.
6. Had a meeting with Fervo regarding the cementing job on the Blue Mountain 73-22 surface casing.
7. Spoke with representative of EM Strategies about permitting two DMRE wellbores in Columbus Salt Marsh.
8. Completed online training for Top Energy Training.

9. Spoke with CYRQ/ Fervo representatives regarding casing design and cement job on the BM 73-22 observation well.
10. Assisted US Department of Commerce attorney Kenyon Weaver with a case study of the DMRE program in Nevada for the Argentinian government.
11. Attended virtual Remediation of Orphan Well Sites webinar, How New Technologies Led to Capture Geothermal Energy webinar and attended Webinar on a project to use fluids from the Blackburn oil field to generate electricity.
12. Compiled information and created PowerPoint slides for 2020-2021 Fluid Minerals permitting, drilling, production, and electrical generation activity to present a yearly review to CMR and NPGS.
13. Coordinated with BLM state and field offices to monitor drilling operations, review permit applications and sundries for fluid minerals.

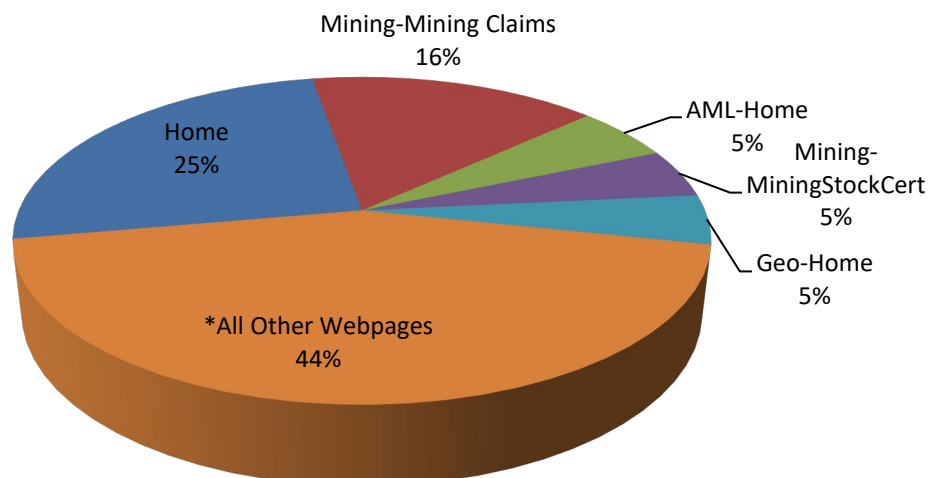
FY 2022 Well Inspections	Total Wells	Wells Needed for FY22 (1/3)	Wells Inspected	% Of Total Needed	Wells Remaining
Geothermal (19 Locations)	463		134		
Oil (22 Locations)	121		18		
Totals	584	195	152	78%	43

### Website Activity

Period	Website Pageviews	Website Unique Pageviews	NDOM Website Top 5 Pageviews	Open Data Site Views	Video Views
Feb 2022	5,115	3,871	Home, Mining-Mining Claims, AML-Home, Mining-MiningStockCert, and Geo-Home	2,575	3,293
Feb 2021- Feb 2022	67,198	49,118		31,876	17,054



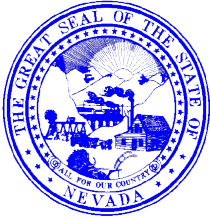
## NDOM Website - Top 5 Unique Page Views for February 2022



\*All Other Webpages - Site pages including Home Pages, Current Information, About Us, Commission, Programs, News, FAQs, and Contact Us pages.

### Top Visitors

Feb-2022	Country	United States, Canada, Germany, China, and Australia			
	State	Nevada, California, Texas, Virginia, and (unknown)			
	City	Las Vegas, Reno, (unknown), Los Angeles, and Houston			
<u>Video Views in February 2022</u>	<u>Top 5 Video Views</u>		<u>Dist Learn Trkr # of Classes</u>	<u>No. NV 45%</u>	<u>So. NV 55%</u>
3,293	Mining in Nevada - 18:22 mins.; The Basics of Mineral Identification; Ore Deposits an Overview; Weathering & Erosion Part 1; Weathering & Erosion Part 2		132	59	73



STATE OF NEVADA  
COMMISSION ON MINERAL RESOURCES  
**DIVISION OF MINERALS**  
400 W. King Street, Suite 106  
Carson City, Nevada 89703  
(775) 684-7040 • Fax (775) 684-7052  
<http://minerals.nv.gov/>



**STEVE SISOLAK**  
Governor

**Las Vegas Office:** 375 E. Warm Springs Rd. #205, Las Vegas, NV 89119  
Phone: (702) 486-4343; Fax: (702) 486-4345

**MICHAEL VISHER**  
Administrator

## MONTHLY ACTIVITY REPORTS

### March 2022

#### Administrator – Mike

1. Provided an update on mining and exploration in Nevada to members of the American Association of Professional Landmen Mining and Land Resources Institute at their annual meeting.
2. Attended quarterly CMR meeting in Las Vegas and subsequent tour of Lhoist's Amargosa clay processing facility.
3. Responded to a request for information on contract mining firms working in Nevada.
4. Responded to requests for information on mining claim history, status, mineral estates, specific mineral commodities, and permitting requirements.
5. Completed review of, and provided feedback on, the mineral resources section of the cooperating agency planning document for the BLM's UT-NV Cross-Tie 500kV EIS.
6. Held several meetings with representatives from Wells Fargo's Merchant Services and the State Treasurer's office to evaluate options for receiving payments via credit cards. After review of products/services and cost estimates we determined that the estimated volume of payments didn't justify the cost to the agency. The Treasurer's office is looking into the possibility of aggregating like agencies onto a single product to spread out the cost.
7. The Department of Energy's Geothermal Technologies Office and National Renewable Energy Laboratory hosted a kick-off meeting with federal regulators and California and Nevada state agency regulators as part of the Geothermal Interagency Collaboration Task Force to identify pathways to accelerate permitting and associated geothermal deployment on public lands. A questionnaire was completed prior to the meeting to facilitate discussion and then another was completed a week after to outline topics for the next meeting's agenda. The goal of the Task Force is to produce a list of recommendations to be included in a technical report prepared by NREL by the end of 2022 and submitted to US Congressional Committees as outlined in the Energy Act of 2020.
8. Meetings attended: Round Mountain Mine operations update, Nevada Gold Mines operations update, Bullfrog Mine baseline kickoff, NvMA Education Committee, Ormat Don Campbell hydrology presentation with NDEP and DWR, Governor's Finance Office Budget Kickoff, BLM Fluid Minerals permitting updates, Nevada Joint Military Affairs Committee, Governor's Cabinet, NvMA Public Policy Committee, GOED Nevada Mining Infrastructure, Solution Mining webinar (RESPEC), Greenlink West EIS, and Agency PIOs.

#### Deputy Administrator - Rob

1. Bond pool activity in March consisted of three notice-level releases and one increase.
2. Compiled the most recent Plan of Operations Disturbance fee (\$20/acre - NRS 519A.250) invoices since March of 2021. 14 invoices were sent for a total of \$91,260.
3. Attended the FY24-25 Governors Finance Office Budget Build Kick-off Meeting. Started working with Valerie on preparing the FY24-25 budget.
4. Attended the quarterly Commission on Mineral Resources meeting in Las Vegas and a tour of the Lhoist Amargosa clay facility.

- Co-hosted two NAAML/IMCC national hardrock AML inventory group meetings. The Office of Environmental Policy and Compliance (OEPC) is tasked under BIL 40704 to create the new program and they were able to attend a meeting. Good collaboration and communication were achieved during the meetings. Some steps forward were identified with future meetings planned over the next few months including additional key partners.
- Created a template for a potential National AML Hardrock database and worked with partner NAAML states on additions and modification. A draft design is expected in April to share with Federal partners for their input.
- Attended multiple meetings with the BLM on ongoing AML projects and funding with Sean.
- Toured the Sutro Tunnel and surrounding area with Chris Pattison and the Nevada Mining Association to look for partnership opportunities.
- Received final approval from the GFO for the new NDOM/NDF interlocal contract for the use of NDF staff and helicopters for AML inventory efforts.
- Finished the online portion of the Top Energy training for the class in Austin, Texas, to be held April 18-22.
- Attended the Nevada Joint Military Affairs Committee meeting.
- End-of-March financial summary of bond pool:

Reclamation Bond Pool Status Report			Current to: 4/5/2022					
Plan-level Bonds -Company	Project	Entry Date	Bond Amount	% of Pool	Comments	Deposit	Premiums Paid	% Bond Whole
Allegiant Gold	Eastside	11/19/2021	\$163,064.00	8.27%		\$84,036.27	\$9,690.57	57.5%
Custom Details	Bowie-Law	11/17/2006	\$14,643.00	0.74%		\$7,328.32	\$18,784.75	178.3%
New Gold Nevada (NV Rae)	Black Rock Canyon	4/15/2005	\$66,673.00	3.38%		\$33,715.62	\$172,042.50	308.6%
SNLS and LLC	Money Pit	5/21/2004	\$430,088.00	21.82%		\$233,171.91	\$297,486.92	123.4%
Western Mine Dev.	Victorine Mine	5/24/2000	\$45,875.39	2.33%	terminated	\$0.00	\$0.00	
Western Mine Dev.	Kings ton Mill	5/24/2000	\$100,450.00	5.10%	terminated	\$0.00	\$0.00	
TNT Venture	Big Canyon	1/27/2010	\$78,161.00	3.96%		\$39,615.03	\$50,929.68	115.8%
Dun Glen Mining	Dun Glen	8/11/2014	\$439,240.00	22.28%		\$238,536.99	\$209,488.81	102.0%
Statewide Notice-Level	Various	various	\$633,179.00	32.12%	50 Notice-level bonds			
Total Bond Amount			\$1,971,373.39					
Cash in Pool's Account (From BSR - 3/25/2022)			\$3,079,016.78					
Unfunded Amount			-\$1,107,643.39					
Percent funded			156.2%					

#### Chief, Abandoned Mine Lands Program - Sean

- NDOM contractor Environmental Protection Services (EPS) continued work on a large-scale revisit program in Southern Nevada completing 86 revisits in Esmeralda County. EPS also began a regional safeguarding project in Northwestern Nevada which will address dangerous orphaned hazards on federal land in Churchill, Humboldt, Lander, and Pershing counties.
- EPS began hard closure work on the VC Grand Prix hard closure project including material support from NDOT, Carson City Division of Public Works, and the BLM.
- AML staff conducted 14 intern interviews on the UNR and UNLV campuses for the 2022 AML Summer Field Season and offered positions to 7 qualified candidates.
- AML staff responded to data requests in Humboldt and Lyon counties.
- AML staff provided completed surveys of 59 sites and submitted data to Battle Mountain BLM for a proposed large-scale hard closure project immediately south of Battle Mountain.
- AML statistics at the end of March:

	SITES INVENTORIED	SITES SECURED	% Secured
Since 1987	24,050	19,724	82%
2022 To Date	83	70	84%

#### GIS/ Field Specialist - Lucia

- Updated AML photos on server.
- Modified check-in script for AML field data so it will work in ArcGIS pro for data collected in field maps.
- Prepared for, and gave, four presentations about rocks and minerals education at Bordewich Bray Elementary School.
- Monitored and processed EPS field visit and securing data.
- Updated mining claims data on open data site twice.

6. Created claims density, fee average, and fee sum images for the western U, as well as a new web map app (C.R.I.M.E) for displaying and interacting with this information.
7. Wrote a blog to be published by ESRI on claims density, fee average, and fee sum images for western US and our open data site.
8. Worked on QA/QC of NDOW's revisit data.
9. Finished modifying topo-ranking script for prioritization of summer fieldwork.
10. Entered annual status and production data received to date.
11. Spent several days cleaning up the spring AML mail-out and working with TerraSpectra to fix script issues.
12. Started working on the critical mineral's presentation for the GSN symposium in May.
13. Wrote up an abstract for the Utah Geographic Information Council's annual meeting, which I will be speaking at in May.
14. Edited contractor's report for the Geological Analysis for the Pine Nuts hard closure project.

#### **AML/Fluid Minerals Field Specialist - Dustin**

1. Corrected AML securing data for the completed Pioche project.
2. Compiled monthly geothermal production data to be presented by Cortney at the NPGS monthly meeting.
3. Helped Lucia with two classroom presentations (kindergarten and 1<sup>st</sup> grade) at Bordewich Bray Elementary.
4. Visited an old mill site, containing hazard sites CC-0077, CC-0078, and CC-0079, within the Carson River Canyon Open Space.
5. Compiled AML site data for a new Hard Rock Closure project at the Buckingham mine, near Battle Mountain, and subsequently met with the BLM Battle Mountain office to define the project's scope of work. Inspected 58 AML sites with Sean for consideration as part of the project.
6. Attended the CMR meeting in Las Vegas, on March 10<sup>th</sup> and Lhoist Amargosa clay facility the following day.
7. Delivered three AML hazard point requests for private industry.
8. Met with contract geologist Bob Thomas to review the geological analysis of AML sites proposed for hard closures in various districts of the Pine Nut Mountains.
9. Assisted in completing the annual proactive securing mail-out, notifying claimants that NDOM secured AML hazards on their claim.
10. Inventoried supplies for the NVMA Annual Teacher Workshop and organized the NDOM AML storage shed.
11. Conducted candidate interviews for this summer's intern program. Interviewed candidates from University of Nevada Reno, University of Nevada Las Vegas, and Utah State University.
12. Responded to enquires from claimants as part of the biannual AML hazard notification mail-out.

#### **AML/Public Outreach Southern Nevada Programs Manager - Garrett**

1. Conducted four career day, minerals education and AML presentations at Ronnow ES reaching approximately 600 K-4<sup>th</sup> grade students.
2. Conducted five minerals education and dangers of abandoned mines presentations at McCaw ES; approximately 200 2<sup>nd</sup> grade students.
3. Contributed as a reader for Nevada Reading week over two days at Lake ES; read books relating to minerals education and talked about the dangers of abandoned mines to K-3<sup>rd</sup> grade classrooms. Conducted eight presentations to approximately 100 students.
4. Completed an Eagle Scout project securing two abandoned mines near the town of Goodsprings. Spoke on the dangers of abandoned mines to a Scout group with approximately 20 participants.
5. Coordinated a Commission on Mineral Resources tour to the Lhoist Amargosa clay processing facility.
6. Assisted with biannual claimant mailout research in preparation for the AML securing notification process. Fielded questions from, and provided information to, claimants throughout the month.
7. Sourced and procured minerals to be used in the Reno Discovery Museum exhibit currently in fabrication by NDOM contractor 3saurus. Continued to monitor and manage contract work.
8. Selected and generated revisit information for NDOM's contractor EPS for work in the Goodsprings area.
9. Submitted a categorical exclusion to the BLM for a hard closure project in Nelson and provided a shapefile to NDOW and SHPO to initiate wildlife and cultural surveys, respectively.
10. Interviewed 14 applicants over three days for the 2022 NDOM AML Summer Internship Program.
11. Judged earth science projects and presented the 2022 Exceptional Earth Science Project Award to Anya Zhang on behalf of the Nevada Division of Minerals and Nevada Mining Association Education Committee at the UNLV/Beal Bank Science Fair.
12. Manned an NDOM exhibit at the Geological Society of America conference at UNLV.

13. Continued to plan and coordinate tours for the Southern Nevada Mineral Education workshop. Created three tour logs for this year's tours using the ArcGIS Online Story Map application.
14. Participated in a U.S. Army Corps of Engineers' Remediation of Abandoned Mine Sites progress meeting with contractor TerraSpectra; an NvMA Education Committee Meeting; a meeting with Southern NV BLM AML staff on upcoming NDOM projects; a Connecting Hands Offering Lifelong Learning Adventures (CHOLLA) meeting at the McCaw School of Mines; the 1<sup>st</sup> quarter Veterans Peer Mentor Program meeting; and a Q1 NDOM Safety Committee meeting.

#### **AML/Public Outreach and Education – Southern Nevada Field Specialist - Becky**

1. Attended AML TerraSpectra meeting.
2. Presented on renewable energy resources for the GATE class at Staton ES.
3. Checked in daily on Mining for a STEAM Education to check progress of participants and answer any questions.
4. Submitted the course request form to the CCSD PLE office to provide PDE credit for Mining for a STEAM Education during the summer 2022.
5. Attended NvMA Education Committee meeting.
6. Presented at Schofield Middle School to 7<sup>th</sup> grade classes on Minerals in Society.
7. Provided an update on education and outreach in 2021 at the Commission on Mineral Resources meeting.
8. Attended and worked at an exhibit booth at the Cordilleran and Rocky Mountain joint section Geological Society of America meeting.
9. Presented Minerals in Society to twelve 7<sup>th</sup> grade classes at Tarkanian Middle School.
10. Attended the Safety Coordinator Meeting.
11. Prepared agenda and held Quarter 1 Safety Committee meeting in my new role as chair.
12. Assumed position of Diversity and Inclusion Liaison, attended introductory meeting, and began familiarizing myself with the new role and training materials.
13. Prepared and adapted materials for Southern Nevada Earth Science Education 2-day workshop

#### **Fluid Minerals Program Manager - Cort**

1. Five geothermal and no oil permits were issued in March. Permits for Ormat's Wild Rose/Don Campbell injection wells 11-11 and 82-3 were approved on a private lease in Mineral County. Permits for Ormat's San Emidio industrial production wells 17A-21, 18A-21, and 25B-21 were approved on BLM leases in Washoe County.
2. Three DMRE well permits were approved in March, Pilot Peak's ETW#1, #2, and #3 located in the Columbus Salt Marsh in Esmeralda County.
3. Two geothermal sundries and one oil sundry were processed in March.
4. Presented a Summary of Fluid Minerals Activity in 2021-2022 to the Nevada Petroleum and Geothermal Society's monthly meeting in Reno and to the CMR at their quarterly meeting in Las Vegas.
5. Fervo Energy commenced drilling the Blue Mountain 34A(24-32)-22 injection well.
6. Attended 4-hr Workplace Violence and Safety Training Course.
7. Completed Top Energy pre-course online training.
8. Attended Department of Energy Undocumented Orphan Well Program Seminar, The Nevada Joint Military Affairs Committee Meeting, and the Nevada Safety Coordinator Meeting.
9. Coordinated with BLM state and field offices to monitor drilling operations, review permit applications and sundries for fluid minerals.
10. Inspected 34 geothermal wells in March. 32 in the Stillwater geothermal field, no major violations were found. Inspected the VA Hospital observation well in Reno, operator is planning to abandon the well. Reinspected a previously leaking well at Steamboat and found the well adequately repaired. End-of-March inspection status:

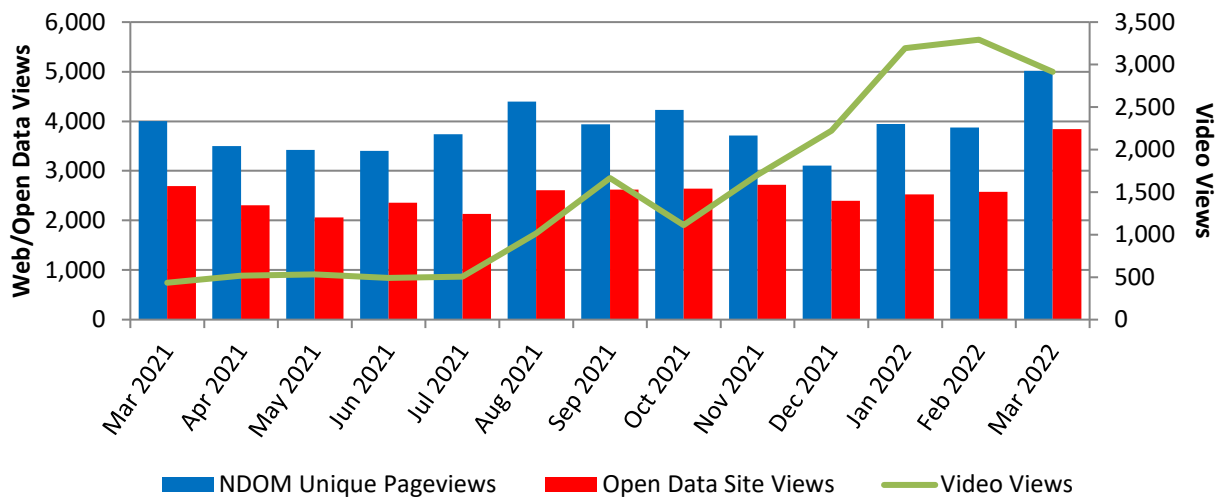
FY 2022 Well Inspections	Total Wells	Wells Needed for FY22	Wells Inspected	% of Total Needed	Wells Remaining
Geothermal (19 Locations)	463		168		
Oil (22 Locations)	121		18		
Totals	584	195	186	95%	9



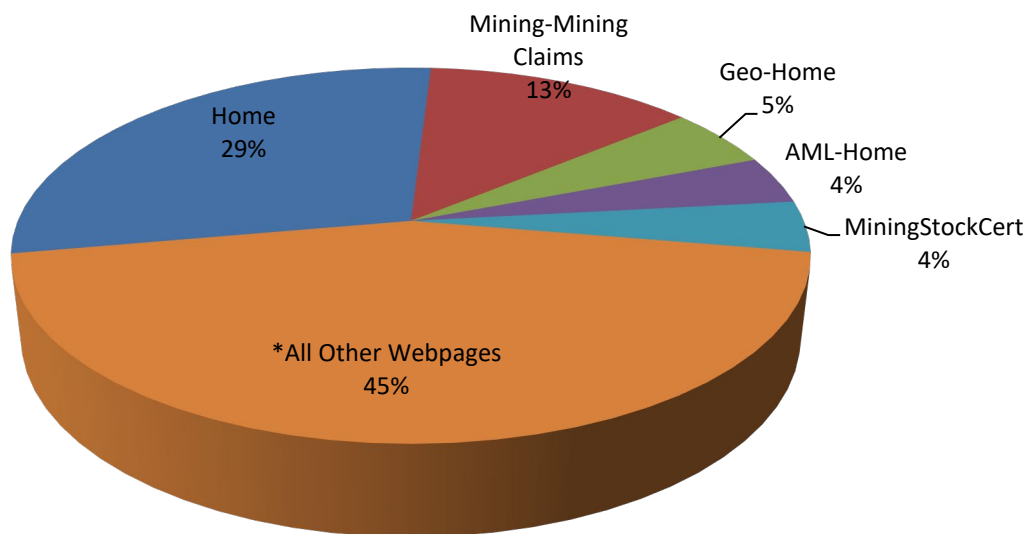
## Website Activity

Period	Website Pageviews	Website Unique Pageviews	Website Top 5 Pageviews	Open Data Site Views	Video Views
Mar 2022	6,749	5,015	Home, Mining-Mining Claims, Geo-Home, AML-Home, and Mining-MiningStockCert	3,845	2,914
Mar 2021-Mar 2022	68,775	50,281		33,493	19,599

### NDOM Web/Open Data/Video Sites 13 Month Rolling Chart



### NDOM Website - Top 5 Unique Page Views for March 2022



\*All Other Webpages - Site pages including Home Pages, Current Information, About Us, Commission, Programs, News, FAQs, and Contact Us pages.

<b><u>Top Visitors</u></b>		
Mar-2022	Country	United States, Canada, India, (unknown), and China
	State	Nevada, California, (unknown), Texas, and New York
	City	(unknown), Los Angeles, Las Vegas, Reno, and New York

<b><u>Video Views in March 2022</u></b>	<b><u>Top 5 Video Views</u></b>	<b><u>Dist Learn Trkr # of Classes</u></b>	<b><u>No. NV 45%</u></b>	<b><u>So. NV 55%</u></b>
<b>2,914</b>	Mining in Nevada - 18:22 mins.; Ore Deposits an Overview; The Basics of Mineral Identification; Weathering & Erosion Part 1; Rock & Mineral Collecting, Land Status, & Mining Claims Overview	117	53	64