FINAL REPORT | SEPTEMBER 2023

Recommendations to Improve Mining on Public Lands

Developed by the Biden-Harris Administration's Interagency Working Group on Mining Laws, Regulations, and Permitting

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I. Executive Summary

The Charge

The global economy is undergoing a rapid transition to carbon pollution-free electricity development. This transition is fueling a rapid increase in demand for responsibly sourced minerals, and the United States must address mineral supply chain issues if we are to meet our national climate, infrastructure, and global competitiveness goals. Critical minerals are an important subset of non-fuel minerals that are used to manufacture electric vehicle batteries, semiconductors, solar panels, defense products, healthcare equipment, and a host of other essential applications. They are essential to the economic and national security of the United States, and are particularly vulnerable to supply chain disruptions.

The American public must have confidence that the minerals and materials used in our electric vehicle batteries, smartphones, solar panels, and other technology are sourced under responsible social, environmental, and labor standards—and that the Federal government wisely stewards our shared natural resources for both Americans today and future generations. To meet rapidly increasing demand for minerals, the United States, in coordination with our global partners, must rapidly and dramatically increase responsible mineral production. We must also learn from the lessons of the past and ensure that our actions do not come at the expense of human health or workplace safety; Tribal

consultation or community engagement; or the air, water, and other crucial resources upon which we all depend.

On February 24, 2021, President Biden Issued Executive Order 14017 – Securing America's Supply Chains, instructing Federal Departments and Agencies to conduct a supply chain review and report back, within 100 days, on the steps needed to strengthen and secure our supply chains. Consistent with the recommendation of the 100-day review, on February 22, 2022, the Department of the Interior announced the launch of an Interagency Working Group (IWG) comprised of experts in mine permitting and environmental law from across the Federal government. This IWG was charged with reviewing laws, regulations, policies, and permitting processes pertaining to hardrock mineral development.

The IWG's efforts also address the Bipartisan Infrastructure Law (Public Law 117-58), which requires the Department of the Interior and the U.S. Department of Agriculture to submit a report to Congress identifying legislative and regulatory recommendations to increase the timeliness of permitting activities for exploration and development of domestic critical minerals.

This report is the direct result of both the presidential and congressional direction to address how the United States can more swiftly and responsibly produce the minerals needed to meet this global transition—and to do so without compromising our fundamental principles of incorporating community input and supporting a living wage—or compromising the quality of the air we breathe, water we drink, or landscapes and wildlife we cherish.

Hard Truths

This report addresses four hard truths implicated by this charge: First, demand for hardrock minerals, and critical minerals in particular, is growing at an exponential rate. According to the International Energy Agency, already announced clean energy policies will cause total mineral demand to double by 2040, and in order to meet climate goals by 2040 that demand would double again.[1] Certain minerals would be in even higher demand: meeting climate goals could require 19 times more nickel, 21 times more cobalt, 25 times more graphite, and 42 times more lithium than produced today.[2] Hardrock minerals like copper and gold, which are not classified as "critical" by the U.S. Geological Survey, are also in high demand and subject to intense development pressure.

[1] International Energy Agency, "The Role of Critical Minerals in Clean Energy Transitions," May 2021. https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.
[2] *Id.*

Second, the United States depends heavily on foreign nations—in some cases non-allied nations—to produce and refine many of the minerals that are in high demand and critical to our economic and national security. That dependence will likely increase in the absence of Federal leadership. Mineral supply chains, moreover, are vulnerable to disruption. While the United States works closely with strategic allies who have robust mining industries, like Canada and Australia, the U.S. is heavily reliant on Chinese imports for many of these minerals in processed form. As stated in the Biden-Harris Administration Fundamental Principles for Domestic Mining Reform, "to meet current and future demand, and to break our reliance on single sources while creating good jobs for American workers, mining reform should assure that a reliable and sustainable supply of critical minerals can be provided both through environmentally and socially responsible mining and processing projects and other sustainable sources."[3]

Third, efforts to address mineral supply chain challenges are complicated by the General Mining Law of 1872, a Reconstruction Era law promoting free access to minerals that are found on Federal land. The General Mining Law, signed into law by President Ulysses S. Grant, has largely gone unchanged despite 151 years of profound social and scientific change. The Law fails to direct mineral exploration and development towards areas that are appropriate for development and away from sensitive resources. It fails to promote timely development of mineral claims. It fails to promote early and meaningful engagement between mining interests, government agencies, and potentially impacted communities. And it fails to provide the American taxpayer with *any* direct financial compensation for the value of hardrock minerals extracted from most publicly owned lands. Overlaying the General Mining Law's promise of free and unfettered access to minerals on Federal land is a complex web of more recent laws enacted to protect air, water, wildlife, communities, and public health. These laws were enacted to provide balance, promote thoughtful and informed decisions, protect Americans, and build confidence that development is conducted with proper safety standards and oversight. Better integration, and reconciliation of competing objectives, is critical to strengthening America's mineral supply chain.

Fourth, these laws are not self-executing. Sustained underinvestment in the technical resources and skilled agency staff needed to address a rapid increase in mineral development proposals leads to under-engagement between agency staff and prospective miners. Under-engagement leads to incomplete or inadequate permit applications, the requests for supplemental information they engender, and the delays that result. Staffing shortages undermine efforts to coordinate across agencies, inviting inconsistency, redundancy, inefficiency, and delay. And of course, inadequately staffed

[3] Biden-Harris Administration Fundamental Principles for Domestic Mining Reform, Feb, 22, 2022. https://www.doi.gov/sites/doi.gov/files/biden-harris-administration-fundamental-principles-for-domestic-mining-reform.pdf

and under-resourced agencies are ill-equipped to swiftly process permit applications and associated environmental reviews.

The charge to the Interagency Working Group that prepared this report is therefore both correspondingly simple and staggeringly complex: expand domestic mineral production in a timely manner to ensure that "our actions are conducted with strong environmental, sustainability, safety, Tribal consultation and community engagement standards so that the American public has confidence that the minerals and materials used in our electric vehicles, smartphones, solar panels and other technology are sourced under responsible social, environmental and labor standards and that the Administration wisely stewards our shared natural resources for Americans today and future generations."[4]

The Interagency Working Group's Response

In response to this challenge, the IWG, which included representatives from numerous Federal departments, agencies, and offices, met with the mining industry, electrical vehicle and battery manufacturers, labor leaders, subject matter and scientific experts both within and outside of government, and non-governmental organizations. The Department of the Interior, on behalf of the IWG, issued a Request for Information, collecting and reviewing over 26,000 comments. The IWG also held dozens of public listening sessions, Tribal listening sessions, and formal consultations with Tribal government officials. The IWG then formed six sub-working groups to study major challenges and opportunities in more depth. After much work and careful consideration of diverse expert and stakeholder comments, the IWG formulated a suite of sixty-five recommendations addressing six broad issue categories: (1) improving mineral exploration and development planning and permitting; (2) increasing engagement with stakeholders and potentially affected communities; (3) expanding consultation and engagement with Tribes; (4) obtaining fair compensation for taxpayers for minerals extracted from Federal lands; (5) protecting taxpayers from the cost of abandoned mine reclamation; and (6) revitalizing domestic mining and other issues.

The IWG report provides a comprehensive review of our nation's rapidly evolving need for minerals, the statutes and regulations governing access to minerals and mineral development, the challenges that must be overcome, and a suite of recommendations for advancing these goals. Based on this review, the IWG concluded that the post-Civil War mining law, overlaying environmental regulations, and under-resourced Federal agencies charged with harmonizing and integrating these laws all require updating if the United States is to swiftly, efficiently, sustainably, and ethically address the pressing mineral supply chain challenges of today.

[4] *Id.*

Summary of Recommendations

The IWG's recommendations respond to the six broad categories of issues listed above and call for action at three distinct but overlapping levels of government: congressional action to amend existing laws and increase Federal agency capacity to better reflect the imperatives of today; regulatory action by Federal agencies to coordinate and streamline mineral exploration and development in accordance with social and environmental imperatives; and policy actions that can be taken by Federal agencies to promote swift, sustainable, responsible, and efficacious mineral supply chains.

1. Improving Mineral Exploration and Development Planning and Permitting

The IWG encourages efforts to improve mineral exploration and development plan submission quality by providing clearer direction and facilitating earlier agency engagement. The most common cause of mine permitting delays involves "mine plans of operation [that] were incomplete or vague, which required a request for additional information before the review process could continue."[5] The IWG believes that Federal agencies can best promote complete and high-quality applications by providing earlier and better direction to prospective mineral developers. The IWG therefore encourages the Bureau of Land Management (BLM) and U.S. Forest Service (USFS) to update and align their regulations and guidance to provide clear direction to applicants and promote consistency across related permitting submissions and information requests. The IWG also encourages agencies to require pre-application meetings between applicants and agencies, to provide consistent guidance to applicants, and to include all agencies that may be involved in mineral exploration or production permitting at the earliest possible point. The IWG believes better direction and coordinated requirements would help applicants anticipate and meet agency informational needs, reduce unnecessary inconsistencies across and within agencies, improve submission quality, and lessen the need for supplemental information requests.

The IWG recommends strengthening Federal agency capacity to process permit applications and environmental reviews.[6] The second most common source of mine permitting delays involves "limited resources allocated to the field office, such as number of staff, staff expertise, funding, infrastructure, training, and/or computer technology."[7] These challenges will compound as the demand for critical minerals spurs additional mineral exploration and development proposals. Stated simply, even the best

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[5] U.S. Gov't Accountability Off., GAO-16-165, Hardrock Mining: BLM and Forest Service Have Taken Some Actions to Expedite the Mine Plan Review Process but Could Do More, 2016, p.22. https://www.gao.gov/products/gao-16-165

[6] This report is not a budget document and does not imply support or approval of any specific action or investment. All activities and recommendations included in the report are subject to the Administration's annual budget formulation process, including resource constraint and policy priority considerations, as well as the availability of appropriations provided by Congress.

[7] *Supra*., note 5.

applications and required analyses will languish if Federal agencies lack the resources to meet their statutory obligations. The IWG encourages Congress to provide Federal agencies involved in mineral development permitting with sufficient resources to hire, train, and retain the expert staff needed to expediently complete environmental analyses and review permit applications. Increasing agency resources will also enable improved interagency coordination, allow for earlier and more productive engagement between applicants and agencies, and lead to better application submissions and more efficient decision-making.

The IWG encourages Federal land managers to identify priority mineral development and avoidance areas and encourage mineral developers to proactively consider competing resource values. The IWG recognizes that mining can occur only where minerals are located and that most valuable minerals are found in localized areas. Conflicts over mining and ancillary uses are more likely to arise when mineral-rich areas also contain other highly valuable resources. The IWG believes that much more can be done to identify, avoid, minimize, and mitigate environmental impacts and development conflicts by better integrating land management planning and mineral exploration and development efforts. The IWG encourages the BLM and USFS to identify areas possessing high critical mineral resource development potential and where mineral development is less likely to result in unacceptable impacts to known competing resources. This effort can be modeled after programmatic planning efforts identifying priority areas for wind and solar development, provided additional data is collected in the location of potential mineral resources. The IWG also encourages the BLM and USFS to identify areas where resource conflicts (e.g., the presence of threatened and endangered species habitat, drinking water resources, and culturally sensitive areas) are likely to complicate mine development and permitting, alerting mining interests to the likely higher expense and potential for delay associated with proposing development in these areas. This recommendation operates in tandem with the recommendation for Congress to develop a new leasing system for hardrock minerals on Federal lands. The IWG believes that programmatic planning would provide greater benefits if accompanied by a transition to a leasing system.

The IWG encourages Congress to authorize Federal land managers to withdraw sensitive lands from availability for mineral development unless a mineral claimant agrees to adopt specified measures to avoid, minimize, and mitigate adverse impacts. The IWG believes that proactive conflict identification alone may be insufficient to avoid or adequately minimize impacts. Recognizing that a complete mineral withdrawal may not be necessary or appropriate in many sensitive areas, the IWG encourages Congress to authorize administrative withdrawals of sensitive lands from availability for future mining claims unless the claimant first agrees to abide by development stipulations that are sufficient to adequately protect competing resources.

2. Increasing Engagement with Stakeholders and Potentially Affected Communities

The IWG encourages Federal agencies to create mineral development analysis and permitting teams. The IWG recognizes that many Field Offices lack experienced staff with expertise on complex mining related issues. The IWG also recognizes that a lack of early engagement with and coordination among agencies and stakeholders can complicate environmental analyses and the permit application review process. The IWG encourages the Department of the Interior and the Department of Agriculture to foster early engagement and information sharing, meaningful community and stakeholder engagement, issue identification, and collaboration across Federal, Tribal, State, and local governments. It also encourages the Department of the Interior (including the BLM and the U.S. Fish and Wildlife Service), USFS, Environmental Protection Agency, and the U.S. Army Corps of Engineers to coordinate impact analysis and permitting and look for opportunities to take full advantage of individual agency and field office expertise to assist in coordinating and tiering their analyses.

3. Expanding Consultation and Engagement with Tribes.

The IWG strongly supports establishing stronger requirements for Tribal consultation on mineral exploration and development proposals. These proposals often involve lands that have unique value to Native Americans. Indeed, almost all of our Nation's nickel, 89 percent of our copper, 79 percent of our lithium, and 68 percent of our cobalt are located within 35 miles of Tribal reservations.[8] The IWG recognizes the importance of early and meaningful Tribal engagement and encourages Congress to direct the BLM and USFS to require agency staff to conduct meaningful, robust, and early consultation with Tribes that may have an interest in mineral exploration or development proposals, including where the proposed action is within a Tribe's ancestral homeland even if it is not proximate to the Tribe's current reservation. The IWG also encourages the BLM and USFS to meet with representatives from potentially affected Tribes and share information about proposed exploration and production activities at the earliest time possible; to develop procedures and infrastructure to guide the sharing and protection of potentially sensitive information, as appropriate under applicable law; to encourage direct and meaningful engagement and information sharing between agencies, Tribes, and proponents; to promote proactive efforts to avoid, minimize, and mitigate impacts to cultural resources; and to include consideration of Indigenous Knowledge in reviews of projects. The Federal Communication Commission maintains a system for confidentially managing sensitive site information and for considering that information in facility siting proposals; this system may provide a valuable model.

[8] S. Block, "Mining Energy-Transition Metals: National Aims, Local Conflicts," MSCI, June 3, 2021. https://www.msci.com/www/blog-posts/mining-energy-transition-metals/02531033947.

4. Obtaining Fair Compensation for Taxpayers for Minerals Extracted from Federal Lands

The IWG encourages Congress to work with the IWG, industry, and other stakeholders to develop legislative options to transition from the claim system to a hardrock mineral leasing system and to impose a royalty on hardrock mineral production. The IWG recommends that Congress work with the mining industry, Tribes, mining communities, environmental NGOs, labor, and the Administration to craft a system that improves certainty and stability for industry, strengthens domestic mineral supply chains, advances environmental sustainability, and fosters early and meaningful community engagement. Although thoughtful concerns were raised by the mining industry regarding the existing hardrock leasing system that is used on certain Federal lands, the IWG notes that hardrock leasing is the predominant method of mineral access used by other major mining nations,[9] and the IWG did not receive any arguments as to why a properly designed leasing system could not be equally successful in the United States. It is critical that any transition from the existing system protect existing exploration and development, while minimizing disruption. The IWG recognizes that any transition would have to be thoughtfully managed. Careful consideration should be given to allowing prospectors to continue to stake mineral claims during this transition to a leasing system, and a fair process should be established for the conversion of claims to leases or other legal instruments established by Congress. Once a leasing system is in place, mineral claimants should be required to convert claims to leases as a condition of mine plan approval. This approach would continue to give mining interests broad latitude to investigate potentially valuable mineral deposits while providing Federal agencies with additional tools to tailor operational requirements to individual circumstances.

The IWG also notes that no U.S. state or major mineral producing nation grants free access to minerals located on public land. We therefore recommend that Congress impose a variable 4- to 8-percent net royalty on hardrock minerals produced on Federal lands. Royalties should be specific to particular commodities (and possibly the ore grade). A royalty would ensure that American taxpayers receive fair compensation for minerals extracted from Federal lands. A royalty could also fund mineral development permitting programs, abandoned mine land remediation efforts, and provide resources to State and Tribal governments that provide infrastructure and services to mining dependent communities.

The IWG also believes that diligent development is an important part of securing fair compensation. Accordingly, *the IWG encourages Congress to amend claim maintenance fee requirements to encourage timely mineral development*. The IWG supports a more robust maintenance fees program for undeveloped mineral claims on Federal lands. Claim maintenance fees should escalate over time and be more frequently indexed to inflation, incentivizing timely development of valuable minerals while

[9] U.S. Gov't Accountability Off., GAO-21-298, Hardrock Mining Management: Selected Countries, U.S. States, and Tribes Have Different Governance Structures but Primarily Use Leasing, 2021. https://www.gao.gov/products/gao-21-298

disincentivizing speculative claim holding. The IWG encourages Congress to direct that fee revenue be used to fund Federal mineral development permitting and environmental review programs and that remaining revenue be used for the Abandoned Hardrock Mine Reclamation Program established under the Bipartisan Infrastructure Law. A more robust claim maintenance fee program would encourage mineral development, support agency efforts to process development applications, and discourage speculative holding of mineral claims that may complicate other land management priorities.

The IWG also strongly supports *creating a community impact fund supported by revenue derived from mineral development*. The IWG believes that a share of the proceeds from any royalty or lease revenue generated by hardrock mineral development on Federal lands should be shared with the communities most heavily impacted by that development. The IWG encourages Congress to enact a revenue sharing program similar to that used for oil and gas leasing that directs a share of hardrock mineral development revenue to the communities, including Tribal communities, most heavily impacted by development. Funds should be available exclusively for community impact mitigation.

The IWG recognizes the urgent need for additional resource support to address abandoned hardrock mine land sites, particularly those that impact Tribes and environmental justice communities. Unlike coal, where companies pay up to 22.4 cents per ton of coal mined to fund unreclaimed legacy coal mine sites, there is no similar system for hardrock mining. The IWG encourages Congress to strongly consider adopting a 7-cent per ton *fee on material displaced by hardrock mining*. This fee could be applied in conjunction with other means of funding AML reclamation.

5. Protect Taxpayers from the Cost of Abandoned Mine Reclamation

The IWG identified multiple opportunities to protect American taxpayers from the cost of abandoned mine reclamation, beginning with *debarring repeat bad actors*. The IWG encourages Congress to follow the example set by several Western States and authorize the BLM and USFS to prohibit approval of any plan for mineral exploration or production where the applicant is in substantial non-compliance with the terms of another mining-related plan or permit or in substantial non-compliance with any health, safety, or environmental law or regulation at a domestic mining operation. This requirement would prevent mining operators that are significantly out of compliance with mining or environmental laws or regulations from reorganizing and obtaining additional approvals to operate without first resolving ongoing actions. This requirement would also incentivize prompt action to address noncompliance issues and limit government liabilities from bad actors using subsidiary corporations to avoid closure and remediation requirements.

The IWG concluded that *reforming the application of bankruptcy laws as applied to mining operations* is also an important tool for reducing taxpayer risk. The IWG encourages Congress to clarify that mine

reclamation financial assurances are not available to creditors during bankruptcy proceedings, minimizing the risk that reclamation obligations will be borne by American taxpayer. The IWG further recommends that, in cases where the government has completed abandoned mine land reclamation on behalf of a bankrupt operator and there are remaining financial assurance funds, Congress direct that unspent funds, if and when they exist, are transferred to the Abandoned Hardrock Mine Program and used to support abandoned mine cleanup elsewhere on the public lands.

The IWG recognizes the tremendous cost involved in remediating abandoned mine lands and encourages creative solutions to increase partnerships and leverage financial resources. Accordingly, the IWG believes that *Congress should enact Good Samaritan legislation to facilitate abandoned mine land remediation.* Legislation should limit liability for any organization seeking to undertake the voluntary cleanup and closure of abandoned mine sites. Liability-limiting legislation should not be available to any entity that was previously involved in operations at the contaminated site, and liability waivers should not extend to operations that are not directly related to addressing the legacy site.

6. Revitalizing Domestic Mining and Other Issues

The IWG strongly encourages efforts to *incentivize re-mining and re-development of brownfield sites and sites adversely impacted by prior mining activity*. The Government Accountability Office reports that there are at least 532,652 abandoned hardrock mine features on lands under Forest Service, BLM, Park Service, or EPA jurisdiction.[10] Thousands of these sites continue to discharge toxic chemicals into nearby waters or into the air. We further recognize that modern mining operations involve pollution prevention and treatment plans that were unheard of 100 or even 50 years ago. Additionally, we understand and appreciate that abandoned mine reclamation programs are grossly underfunded and that creative financing is needed if we are to meaningfully address abandoned mine lands. The IWG believes that increased partnerships between mining companies and Federal agencies can incentivize re-mining and re-processing of contaminated mine lands. If done with appropriate safeguards, re-mining and re-processing may represent an opportunity to strengthen the domestic mineral supply chain while also accelerating remediation of contaminated lands. The IWG encourages Congress to work with Federal land management and environmental agencies to develop programs that incentivize mining in previously impacted areas and that will reduce legacy discharges. In addition, Congress should consider legislation to address potential barriers for organizations seeking to re-mine or re-process mine or mill tailings or other mineral development waste products, and for organizations seeking to re-mine contaminated mine lands and remediate existing or ongoing contamination.

[10] U.S. Gov't Accountability Off., GAO-20-238, Abandoned Hardrock Mines, Information on Number of Mines, Expenditures, and Factors That Limit Efforts to Address Hazards, 2020, p. 18. https://www.gao.gov/assets/gao-20-238.pdf.

The IWG also recommends that the Federal government take steps to rebuild the infrastructure necessary for a healthy domestic mining industry, such as by authorizing grants to mining schools to train personnel in modern, efficient, and effective mining and environmental management practices and in mining-relevant geoscience and engineering fields that have diminished over recent decades; reestablishing long-dormant lines of Federal mining research; and developing a centralized repository of the Federal government's currently fragmented inventory of mining, geologic, and geophysical data.

II. Purpose of the Mineral IWG and Report

On February 24, 2021, President Biden signed Executive Order (E.O.) 14017, "America's Supply Chains." The E.O. establishes the Administration's policy to strengthen the resilience of America's supply chains, directing Federal agencies to complete a series of reviews within 100 days to identify supply chain vulnerabilities, and to make policy recommendations to strengthen supply chains for different industrial sectors. On June 8, 2021, the White House released the 100-Day reviews directed by E.O. 14017, which included a recommendation for the Federal government to form an interagency working group with:

> expertise in mine permitting and environmental law to identify gaps in statutes and regulations that may need to be updated to ensure new production meets strong environmental standards throughout the lifecycle of the project; ensure meaningful community consultation and consultation with tribal nations, respecting the government-to-government relationship, at all stages of the mining process; and examine opportunities to reduce time, cost, and risk of permitting without compromising these strong environmental and consultation benchmarks.[11]

In addition, the Bipartisan Infrastructure Law (BIL), signed by President Biden on November 15, 2021, directed the Department of the Interior (DOI) and the U.S. Department of Agriculture (USDA) to submit a report to Congress that identifies legislative and regulatory recommendations to increase the timeliness of permitting activities for the exploration and development of domestic critical minerals.[12] Shortly before the BIL was signed, BLM received a Notice of Petition and Petition for Rulemaking (Rulemaking Petition) from 40 Federally recognized Tribes,[13] Indigenous organizations, and

[11] "Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth." The White House, June 2021, p. 14. https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day- supply-chain-review-report.pdf .

[12] Pub. L. No. 117-58, § 40206, 135 Stat. 429, 961-63 (2021).

[13] "Federally Recognized Tribe" means any Indian tribe listed under § 102 of the Federally Recognized Indian Tribe List Act of 1994 (25 U.S.C. § 5130), see 2023 list of Indian Entities Recognized by and Eligible To Receive Services From the United States Bureau of Indian Affairs, 88 Fed. Reg. 4636, (Jan. 12, 2023).

non-governmental organizations (NGOs),[14] requesting that DOI update its surface management regulations to protect Indigenous and Federal land resources in the West. The Rulemaking Petition stated, "BLM's existing hardrock mining rules perpetuate inequities while failing to adequately protect Tribal resources and other natural resources. Modernizing BLM's hardrock mining rules would help correct these unacceptable risks and burdens that the current rules all too often permit."[15]

As the Administration pursues its strategy to secure a reliable supply of critical minerals and companies respond to increasing demand for minerals needed for renewable energy and other advanced technologies, DOI launched the Interagency Working Group on Mining Regulations, Laws, and Permitting (IWG) to respond to the aforementioned directives and develop recommendations for legislative, regulatory, and policy reform, and held stakeholder engagement and listening sessions throughout the spring and summer to inform its recommendations. At the same time that the IWG was announced, on February 22, 2022, the Administration released a document entitled, "Biden-Harris Administration Fundamental Principles for Domestic Mining Reform," which laid out the key themes and policy direction that would guide the work of the IWG.[16] The document states:

> There is a growing need for responsibly sourced critical minerals to meet our climate, infrastructure, and global competitiveness goals…. As the Biden-Harris Administration advances its critical minerals strategy, including expanding domestic production in a timely manner, we must ensure that our actions are conducted with strong environmental, sustainability, safety, Tribal consultation and community engagement standards so that the American public has confidence that the minerals and materials used in our electric vehicles, smartphones, solar panels and other technology are sourced under responsible social, environmental and labor standards and that the Administration wisely stewards our shared natural resources for Americans today and future generations.[17]

The IWG recognizes that mining is important to meeting the nation's clean energy and national security goals, that mining is also an important economic driver for creating good-paying union jobs,

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[14] Chilkat Indian Village et al., "Notice of Petition and Petition for Rulemaking: Bringing Hardrock Mining Regulations and Policy into the 21st Century to Protect Indigenous and Public Lands Resources in the West." Sept. 16, 2021, p. 6. https://earthworks.org/assets/uploads/2021/09/APA-DOI-Hardrock-Mining-Rules-Petition-Combined-1.pdf.

[15] *Id.* BLM also received a petition on June 18, 2019, representing 11 mining groups requesting new rulemaking to resolve an issue surrounding the application of state environmental laws on Federal lands. *See generally* James L. Buchal, "Petition for Rulemaking to Stop State-Law-Based Prohibitions of Mining on Federal Lands." June 18, 2019. https://goldgold.com/wp-content/uploads/2019/06/Miners-Petition-6-18-19.pdf. The IWG did not attempt to discuss or address the issues raised in that petition.

[16] *Supra.*, note 3.

[17] *Id.*

and that mining can be a catalyst for economic revitalization. There is a shared desire to improve: (1) the speed and effectiveness of permitting; (2) the confidence that Tribes, States, local communities, conservationists, preservationists, and other interested parties have that mining and reclamation will be done properly; and (3) the legal system governing mining to modernize the process and use current and future technology to meet our shared environmental, Tribal consultation, community engagement, and labor standards. We also appreciate that these development needs are part of a greater process to develop a circular economy that can drive our economy into the future. We cannot rely only on new mines to meet our critical minerals needs in the near-term and future, but must prioritize reuse, recycling, reprocessing, and developing new technology to reduce the amount and kind of materials needed to secure our clean energy independence.

Today, America's Federal hardrock mining system provides a minimum level of transparency, no requirement to work with or assist communities impacted by mineral development, and no requirement to develop our nation's resources in an equitable or sustainable manner. Many companies follow voluntary standards that may exceed U.S. statutory and regulatory requirements. These standards are often developed or adopted by international bodies, including industry organizations, governmental organizations, or NGOs—such as the International Council for Mining and Metals (ICMM), the Organisation for Economic Co-operation and Development (OECD), and the Initiative for Responsible Mining Assurance (IRMA), respectively. Not all companies choose to follow these standards. For those that do, effective conformity assessment (such as auditing, verification, certification, etc.) can help investors and downstream consumers verify that companies are following voluntary standards. Unfortunately, conformity assessment is not a universal feature of voluntary standards in the mining industry.[18]

The U.S. has set a high standard for environmental regulations that apply to today's mining operations. However, there are still many abandoned mining facilities that predate today's environmental requirements. Historical injustices described in more detail below, legacy mining pollution, and a lack of transparency when engaging with and educating the public on mining activity or the importance of mining for achieving America's clean energy future have all impacted the practice, image of, and trust in domestic mining. Federal agencies and the Administration can take steps to improve permitting, environmental stewardship, as well as Tribal consultations and public notifications, but these efforts will fall short of meeting national needs absent congressional enactment of significant reforms to the Mining Law of 1872.

[18] The official definition for conformity assessment, as well as additional details on the federal government's use of conformity assessments, can be found at 15 C.F.R. Part 287.

We must also recognize and reconcile multiple valid yet competing missions. We must accelerate domestic production and secondary recovery of the critical minerals needed to support the transition to a clean energy economy, and we must do so while ensuring that miners prevent or mitigate harmful effects on the air, water, land, cultural resources and practices, Tribal resources, Tribal Treaty Rights, and lives that we seek to also protect from the most devastating impacts of climate change. And we must do so while fostering open, effective, and meaningful coordination with Tribal, state, and local governments and giving greater voice to traditionally underrepresented communities. Finally, we must bring hardrock mining on par with coal, oil and gas, and other extractive processes and establish a fair return for taxpayers through meaningful royalties and reclamation fees.

The IWG is chaired by the Deputy Secretary of DOI and consists of representatives from across the government, including the DOI, USDA, Department of Energy (DOE), Environmental Protection Agency (EPA), Department of State, Council on Environmental Quality (CEQ), the Advisory Council on Historic Preservation (ACHP), and National Economic Council, among others. To develop its recommendations, the IWG published a request for information[19] (RFI) on March 31, 2022, with a comment period that ran through August 30th, receiving over 26,000 responses, including over 300 unique comment letters. The IWG also met with State and local governments, Congressional staff, the mining industry, electrical vehicle and battery manufacturers, labor leaders, subject matter and scientific experts, and NGOs. The IWG held public listening sessions, Tribal listening sessions, and four government-to-government consultations with Tribal government officials in the course of its work.

The IWG formed six subgroups to address major challenges and opportunities: mining operations, access to mineral resources, fiscal issues, Tribal and public engagement, permitting improvement, and international best practices and standards. The subgroups consisted of subject matter experts that discussed each of these subjects in greater depth, reviewed the comments received, and in some cases obtained additional information from outside experts.

The focus of the IWG's work is on minerals subject to the 1872 Mining Law, generally referred to as "locatable minerals" and often colloquially referred to as "hardrock" minerals, although such minerals are not necessarily found in rocks that are "hard," or even in the form of rocks at all.[20] Congress has

[19] Request For Information to Inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 87 Fed. Reg. 18811, 18811-12 (Mar. 31, 2022).

[20] For example, lithium dissolved in subsurface brine on Federal lands open to the Mining Law is a mineral deposit subject to disposal under the Mining Law.

removed a number of minerals[21] and certain Federal lands[22,23] from operation of the Mining Law, but access to most hardrock minerals on Federal lands in the American West—including gold, copper, uranium, nickel, and nearly every entry on the most recent U.S. Geological Survey (USGS) list of critical minerals—is governed by this 150-year-old law.

The IWG considered a range of potential reforms to improve the quality of information considered during the permitting and review process; make the mine development permitting and environmental review processes more efficient while maintaining or improving standards for environmental protection, Tribal consultation, and community engagement; ensure a fair return to the American taxpayer for the extraction of their valuable resources; and improve domestic access and production of minerals. After consideration of the robust input received, the report provides a range of options for change, including a consideration of a rethinking of the whole system, such as establishing a leasing system for hardrock minerals and transitioning away from the use of self-initiated mining claims, and moving mining into land management planning so that development is focused in low-conflict areas. Many potential changes would require Congress to consider how best to implement them. Pending congressional action, the report also includes a slate of recommendations to make meaningful change in the near term to help address key issues that slow project permitting or raise significant environmental, Tribal, or social concerns.

Thus, much of this report focuses on the laws and policies that apply to the Bureau of Land Management (BLM) and the United States Forest Service (USFS). However, as discussed in Section VI, these agencies are not the only entities that regulate mining on Federal lands. Many other agencies, including the EPA, U.S. Fish and Wildlife Service (FWS), U.S. Army Corps of Engineers (USACE), Nuclear Regulatory Commission, ACHP, Department of Commerce (DOC), CEQ, and State and local entities, may also regulate and exercise permitting, review, or consultation authorities that mining operators must comply with before beginning mining or exploration operations. Hardrock mining operations on non-Federal land may be completely regulated by States and not subject to National Environmental Policy Act (NEPA) or National Historic Preservation Act (NHPA) review unless an individual Clean Water Act (CWA) 404 permit from the USACE is required, in which case some level of NEPA and NHPA review would occur with the USACE as the lead agency. In examining and

[21] For example, the Mineral Leasing Act of 1920 removed deposits of some minerals, including oil, gas, phosphates, and sodium from operation of the Mining Law, and made deposits of those minerals subject to leasing. 30 U.S.C. § 181 et seq. In addition, the Surface Resources Act of 1955 removed common varieties of sand, stone, gravel, and pumice, from operation of the Mining Law and made them subject to disposal under the Materials Act of 1947. 30 U.S.C. §§ 601-15.

[22] Such as public domain lands in Minnesota, Missouri, Michigan, Wisconsin and Kansas. Acquired lands have never been subject to operation of the 1872 Mining Law.

[23] This report uses the term "Federal lands" when referring generally to lands subject to operation of the Mining Law, regardless of surface managing agency. The report will specify BLM-managed public lands, National Forest System lands, or National Park System lands where applicable.

implementing the recommendations in this report, the individual agencies represented on the IWG will continue to coordinate and work with its members and other entities to improve the complete permitting process.

Further, some mining claims exist, and mining is permitted to continue, on National Park Service (NPS) lands based on valid mining claims and sites that existed prior to the creation of a park. However, new claims may not be located on NPS lands,[24] as statutes creating new parks withdraw those lands from location and entry under the 1872 Mining Law. To the extent that recommendations in this report for improving mineral exploration, development, and reclamation may be applied to mining on NPS lands, the DOI will endeavor to do so.

Most lands within the FWS National Wildlife Refuge System (NWRS) have been withdrawn from operation of the 1872 Mining Law either by provisions in refuge establishment documents or via administrative withdrawal under the Federal Land Policy and Management Act (FLPMA) or other applicable law.[25] As a result, comparatively little mining occurs on national wildlife refuges, so this report does not address or review modifications of the law on NWRS lands. Where valid mining claims exist within the NWRS due to reserved rights or that predate withdrawal, the DOI will endeavor to employ the recommendations for improving mineral exploration, development, and reclamation to the extent they may be relevant and applicable.[26]

Applicable background information and the IWG's observations and recommendations are contained in the pages that follow. This report addresses potential reforms to the Mining Law, Federal regulations implementing the Mining Law, and other related statutes, as well as non-regulatory reforms. The Biden-Harris administration acknowledges that there are many competing interests and that balance must be achieved to expand domestic critical mineral mining, protect the environment, and engage traditionally marginalized communities—especially Tribes, many of which have been harmed by mining in the past. The IWG also acknowledges the need to center all these reforms as part of a circular economy to drive greater recycling, reuse, reprocessing, and technological breakthroughs to secure our clean energy future.

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[24] Mining claims in National Park System units are regulated by the National Park Service under the authority of the Mining in the Parks Act, which directs the Secretary of the Interior to determine the validity of unpatented claims in NPS units and regulate all mineral activity in connection with mineral rights on valid unpatented and patented claims in NPS units, *see* 54 U.S.C. §§ 100731-37.

[25] The Secretary of the Interior may withdraw refuge lands from operation of the mining laws in accordance with 43 U.S.C. §§ 1714(c), (d), or (e). Moreover, per 50 C.F.R. § 27.64, "[p]rospecting, locating, or filing mining claims on national wildlife refuges is prohibited unless otherwise provided by law."

[26] Non-Federal hardrock mineral rights within the NWRS are managed in accordance with 50 C.F.R. § 29.32 and the U.S. Fish and Wildlife Service Minerals Management Policy. "Chapter 1: Minerals Management Policy," *in Natural and Cultural Resources Management: Part 612, Minerals Management*. Fish and Wildlife Service, Dec. 2016, pp. 1-7. https://www.fws.gov/policy/612fw1.pdf.

A note on terminology: when discussing the impacts of hardrock exploration and mining, the report will often use the term "environmental" or "social" impacts. The meaning of environmental impacts is generally well understood: the effects of an operation on the air, water, land, climate, wildlife, and other components of the natural environment. The term "social impacts" does not have as clear a definition. One review of 50 studies analyzing the social impacts of mining found 28 different social impact indicators in use, both positive and negative, including economics, employment, gender, health, cultural resources, Indigenous rights, and others.[27] The IWG considers the term "social impacts" to be expansive, and uses it in this report to include impacts on historic buildings and artifacts, religious practices, Tribal treaty rights, cultural heritage sites, and more, in addition to the impacts listed in the referenced review. If a specific social impact is being discussed separately from others, the IWG will use the more specific term.

III. Setting the Context of Mining in the U.S.

A. Background of The Mining Law

One hundred and fifty years ago, shortly after the conclusion of the Civil War, the U.S. Congress enacted a law that changed the face of our nation's Federal lands and our national economic trajectory. The 1872 Mining Law effectively codified into law informal mining codes that dated to the California gold rush.[28] Miners were encouraged to seek out valuable minerals, and incentivized to do so by promises of cheap land and the minerals that land contained.

But times change and nations evolve. In 1872 there were only 37 states; mineral resources on Federal lands were almost entirely unmapped; our nation's population was small—just 39.8 million in 1870 compared to 331.4 million in 2020[29]—and non-Indigenous settlement in the West, where most hardrock minerals are found, remained particularly sparse. Mining operations were relatively small by today's standards, with even the largest operations producing only several hundred to a few thousand tons per day, compared to large operations today that routinely produce tens or even hundreds of thousands of tons per day. Society possessed a limited understanding of the adverse impacts that could result from imprudent mining. And in 1870, the lands and resources stewarded by Tribal

[27] L. Mancini, S. Sala, *Social Impact Assessment in the Mining Sector: Review and Comparison of Indicators Frameworks*, Resources Policy, Vol. 57, 2018, pp. 98-111. https://doi.org/10.1016/j.resourpol.2018.02.002.

[28] Although the principles of the 1872 Mining Law date back to the informal codes established by miners themselves during the California gold rush (and reflected certain mining rules that predated that), such codes were generally formalized by states and local mining districts prior to 1872. The 1872 Mining Law deferred to formal state and local mining laws and regulations to the extent they were not inconsistent with federal law.

[29] U.S. Census Bureau QuickFacts: United States. Census Bureau QuickFacts. https://www.census.gov/quickfacts/fact/table/US/PST045222.

Nations were seen by many as open for claim, even, at times, when legally foreclosed by a treaty existing between the Tribe and the United States.

The 1872 Mining Law,[30] the operation of which remains in most ways unchanged where it applies, makes "all valuable mineral deposits in lands belonging to the United States . . . free and open" to mineral exploration and purchase.[31] Under the 1872 Mining Law, miners can "locate" mining claims on Federal lands, develop and maintain their claims to those minerals, and may eventually obtain a "patent" to the land covered by the claim and the minerals contained within.[32] A patent converts publicly owned lands and any minerals those lands contain into private property. For much of our history, mineral patents were granted routinely, with hardly any review.[33] Over the last 150 years, around 3.2 million acres of Federal land[34]—an area approximately the size of Connecticut—and an estimated excess of $300 billion in mineral wealth,[35] have been transferred out of public ownership. Taxpayers received little, if any, direct compensation for the lands and minerals conveyed out of public ownership.

Many mining claims were developed but not patented prior to the enactment of an annual prohibition of new patent applications,[36] leaving the land in Federal ownership, but subject to mineral development. These are referred to as unpatented mining claims. Since 1976, more than 4 million unpatented mining claims have been filed, covering over 23.8 million acres of Federally managed lands.[37] At the end of Fiscal Year 2022, over 489,000 of these claims were considered "active," meaning that they were in good standing under the recording, annual maintenance, and assessment work requirements.[38] This is the highest number of active mining claims this century, an indication of significantly increased interest in exploring for and developing minerals on Federal lands (see Figure 1).

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[30] 30 U.S.C. § 21 et seq., as amended.

[31] 30 U.S.C. § 22.

[32] As a result, minerals that fall under the 1872 Mining Law are often informally referred to as "locatable minerals." In 1994, Congress placed an annual moratorium on new patent applications, which has been extended each year since. *See* Department of the Interior and Related Agencies Appropriations Act of 1995, Pub. L. No. 103-332 § 112, 108 Stat. 2499, 2519 (Sept. 30, 1994). For processing existing mineral patent applications that received a First Half Mineral Entry Final Certificate prior to the 1994 moratorium, the BLM and USFS follow the procedures laid out in BLM H-3860-1 and MS-3860, MS-3862, MS-3863, and MS-3864.

[33] John Leshy, The Mining Law: A Study in Perpetual Motion, 1987, pp. 125-26.

[34] U.S. Gov't Accountability Off., B-229205, Federal Land Management: The Mining Law of 1872 Needs Revision, 1989, p. 2, https://www.gao.gov/assets/rced-89-72.pdf.

[35] Earthworks, "1872 Mining Law factsheet," 2019. https://earthworks.org/resources/the-1872-mining-law/.

[36] *See* Pub. L. No. 103-332 § 112, 108 Stat. 2519 (1994).

[37] U.S. Bureau of Land Mgmt., Public Land Statistics 2022, p. 132 tbl.3-22.

[38] *Id.*

Holders of unpatented mining claims are required to pay annual claim maintenance fees or perform assessment work, but they are not required to pay any royalty on the extraction of locatable minerals or ever explore or mine the lands.[39] Today, developed and undeveloped mining claims dot the landscape, complicating efforts to remediate hazards from legacy mining and to manage Federal lands in a manner that achieves the lands' full range of potential benefits.

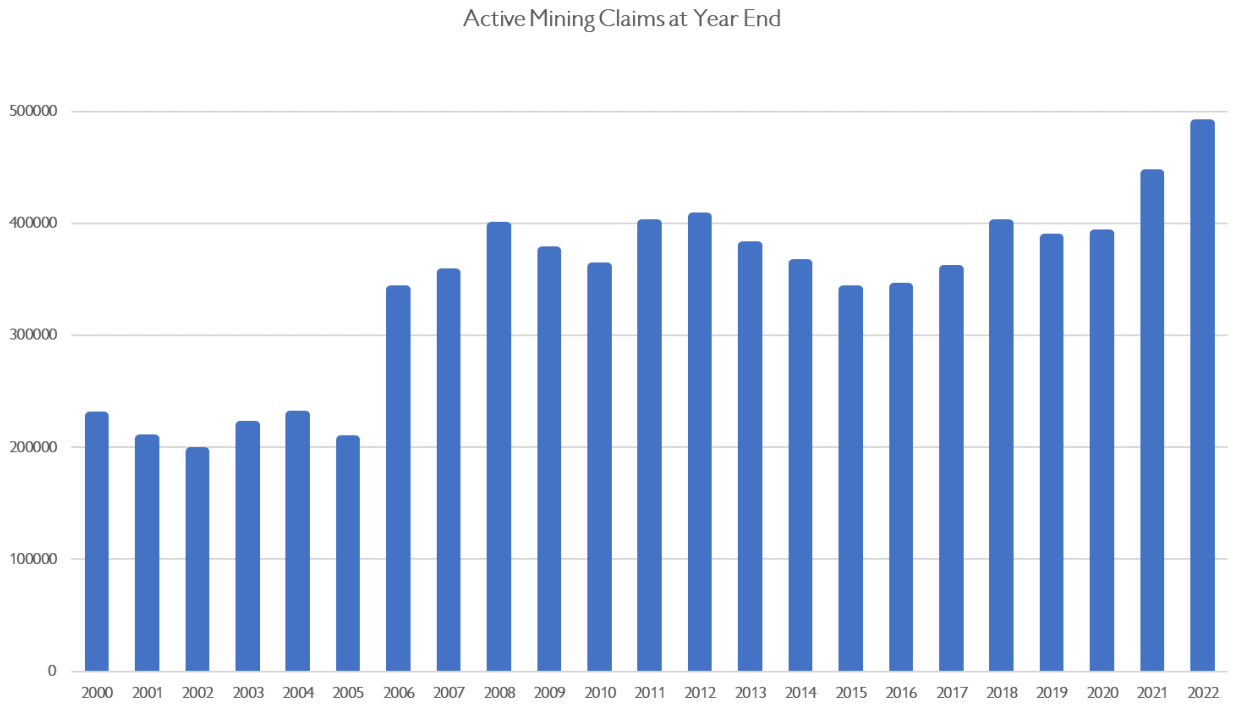

Figure 1. Source: BLM, *Public Land Statistics*, Table 3-22.

Ready and free access to Federally managed lands and the minerals they contain have created jobs and fueled our national economy and continue to do so. Americans mined the iron that became the steel forming the railroads connecting our nation, the bodies of our ships, and the beams framing our skyscrapers. Americans mined the copper that wires our homes and the aluminum that revolutionized flight. Americans mined the uranium that changed the world and lit some of our homes. Americans and American mining have improved the standard of living for hundreds of millions of people. But progress came at a cost.

Prior to the implementation of strong environmental legislation in the second half of the 20th century, many mineral operations improperly disposed of wastes during operations and were simply

[39] Unpatented mining claims are those parcels of Federal lands for which an individual has asserted a right of possession. The rights are restricted to extraction and development of a mineral deposit and uses reasonably incident thereto, and may or may not include exclusive surface rights.

abandoned when no longer profitable, leaving behind a legacy of ongoing pollution with at least 160,000 orphaned and abandoned hardrock mines scattered across 12 western states, though no comprehensive inventory exists.[40] American taxpayers continue to spend millions of dollars each year cleaning up the legacy of these past practices.[41]

B. Impacts on Tribes from Historical Mining Operations

At the birth of the United States, Indigenous Peoples called all of North America home and occupied that vast landscape. Today in the U.S., Tribes and their members reside on only a small fraction of their ancestors' land, often far from their most sacred places. Many Tribes, however, retain strong ties to their ancestral homelands, even when the United States forcibly relocated them to reservations.[42] Treaties between Tribal Nations and the United States may reserve to Tribes and their members the right to off-reservation uses like hunting, fishing, or plant gathering. Federal laws and policies also provide certain procedural rights to consult on Federal actions affecting Tribes.

A large number of Tribal displacements, forced relocations, and other tragedies were driven by mining: from the Georgia gold rush in the 1820s and 1830s that led to the forced removal of the Cherokee and other Tribes from their lands, to the death of an estimated 100,000 American Indians in the first two years of the California gold rush,[43] to the forced negotiations in 1863 that led the Nez Perce Tribe to relinquish 90 percent of its land in what the Tribe refers to as the "Steal Treaty,"[44] to the seizure of the Black Hills in 1877 after the discovery of gold in the region, among numerous other examples.

Tribes continue to be impacted by past and current mining operations, many of which occurred prior to the enactment of modern environmental laws and regulations. A great number of the more than 160,000 known abandoned mines in the Western United States are on or proximate to Native

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[40] U.S. Gov't Accountability Off., GAO-08-574T, Hardrock Mining: Information on Abandoned Mines and Value and Coverage of Financial Assurances on BLM Land, 2018, pp. 13-14 tbl.3, https://www.gao.gov/assets/gao-08-574t.pdf.

[41] *See* U.S. Gov't Accountability Off., GAO-23-105408, Abandoned Hardrock Mines: Land Management Agencies Should Improve Reporting of Total Cleanup Costs 15 (2023), https://www.gao.gov/products/gao-23-105408 ("To clean up contamination at abandoned hardrock mines from fiscal years 2017 through 2021, Interior's and USDA's documents indicate that together they spent an average of approximately $24 million per year. . . .").

[42] "The Indian Removal Era and Section 106 Tribal Consultation: Information Paper," Advisory Council on Historic Preservation, Apr. 2019, pp. 1-3. https://www.achp.gov/sites/default/files/whitepapers/2019-04/RemovalEraInformationPaper20190401final_0.pdf.

[43] Edward D. Castillo, "Short Overview of California Indian History." State of California Native American Heritage Commission. https://nahc.ca.gov/resources/california-indian-history/.

[44] Nez Perce Tribal Executive Committee Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting. (2022).

Lands,[45] such as the Midnite uranium mine on the Spokane Tribe of Indians Reservation in the Selkirk Mountains of eastern Washington; uranium mines on the Laguna Pueblo and Navajo Nation; silver, lead, and zinc mines in the Coeur d' Alene watershed in Idaho; and the Zortman-Landusky mines adjacent to the Fort Belknap Indian Reservation in Montana. It is estimated that more than 600,000 American Indians live within 6 miles (10 km) of an abandoned mine site in the Western U.S.—a proximity that has been linked to a number of health disparities among American Indians.[46]

These legacy environmental and cultural impacts affect Tribes by degrading land, vegetation, waters, and air and harming wildlife and aquatic resources on Tribal reservations and on traditional use areas. Sacred places have been lost or degraded by mining activities. Some impacts of mining on Tribes are described in comment letters submitted by various Tribes in response to the RFI.

> "Historically, the federal government took actions that facilitated mining on or near tribal lands, or on public lands off reservations on which tribes have reserved rights and resources, resulting in hazards that have adversely affected, and continue to affect, some tribal communities." – Comments from Shoshone Bannock Tribes et al. to IWG

While most impacts from abandoned hardrock mines come from chronic ongoing contamination of lands and waters that many Indian Tribes continue to hold sacred, occasionally an event occurs that highlights the issue in a more visible way. For example, in 2015, more than three million gallons of acid mine drainage containing an estimated 540 tons of heavy metals were released from the Gold King Mine in San Juan County, Colorado, into Cement Creek during an EPA removal site evaluation. Highly polluted water flowed from Cement Creek into downstream waters of the Animas River, which flows through the aboriginal lands of the Ute people, including present members of the Southern Ute Tribe and the Ute Mountain Ute Tribe, and into the San Juan River, passing numerous Native communities and along the northern border of the Navajo Nation. This event temporarily impacted the water supply for the Navajo Nation and Southern Ute Tribe.[47]

This long-standing historical legacy makes mining significantly different from other large infrastructure projects, such as transmission lines or highways. As the nation considers expanding domestic mining to produce the minerals that are crucial for our current technology and our transition to clean energy, we must acknowledge historical injustices and their continued impact, recognize the skepticism and

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[45] J. Lewis, J. Hoover, and D. MacKenzie, *Mining and Environmental Health Disparities in Native American Communities*, Curr. Envtl. Health Rpt., Vol. 4, 2017, pp. 130-41, at 130. https://link.springer.com/article/10.1007/s40572-017-0140-5.
[46] *Id.* at 131-33.
[47] M. Lopez, *Tribal Rights: The 1872 Mining Law's Past and Future*, Natural Resources & Envt., Vol. 43, 2020, pp. 53-55. https://www.proquest.com/docview/2369311158?fromopenview=true&pq-origsite=gscholar&parentSessionId=HetzeBmRSZJnHB2NoBpnWKqJJP9NuacnhH%2F7hgML6dU%3D

distrust that they engender, and seek to redouble efforts to listen to, consult on a government-to-government basis with, and, when possible, partner with Tribes on the mines of the future.

We must also recognize that Tribal Nations can and do benefit from mineral activities on their lands. For example, the Navajo Nation is located in a geologically rich mining area with reserves of uranium, coal, oil, and natural gas. Historically, mining has been a major part of the Navajo economy, employing large numbers of Tribal members and infusing much-needed cash into the local community. At the same time, Cold War-era uranium mining on Tribal lands has left a significant legacy of environmental pollution and negative health impacts, some of which continue to this day. As with many development projects, the benefits and impacts from mining are neither equally nor uniformly distributed across individual communities.

In addition, the Southern Ute Tribe, located in southwestern Colorado, has developed one of the most successful Tribal oil and natural gas industries in the country. Revenues from natural resource extraction have allowed the Tribe to develop a prosperous growth fund for community development. While these are examples of Tribal benefits from fossil fuel projects, Tribes can also take economic advantage of their mineral resources that can help power our Nation's clean energy transition. Today, many Tribal Nations face a dilemma: how to balance mineral development on lands within their communities with protection of a landscape they hold dear.

IV. Mining Operations and Management

The term "hardrock minerals" generally includes the critical minerals that are necessary for our national and economic security and the technologies essential to meeting the United States' Nationally Determined Contribution to fight climate change. The Biden-Harris administration is focused on securing supply chains for these minerals—as they are essential to reaching the nation's clean energy goals—while ensuring that it is done in a responsible way that does not compromise environmental standards, Tribal consultation, and community engagement.[48]

Recognizing the near-complete import dependence that the U.S. has on a number of critical minerals, recent legislative and executive actions have attempted to create more domestic capacity for critical mineral mining and processing, as well as promote domestic manufacturing of the products that these critical minerals are used for, such as semiconductors, permanent magnets, and advanced batteries. Critical minerals may be found on Federal lands and on or near Indian lands. One recent study found that 97 percent of our Nation's nickel resources, 89 percent of our copper, 79 percent of our lithium,

[48] "Fact Sheet: Securing a Made in America Supply Chain for Critical Minerals." The White House, Feb. 22, 2022. https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/22/fact-sheet-securing-a-made-in-america-supply-chain-for-critical-minerals/.

and 68 percent of our cobalt are located within 35 miles of Indian reservations.[49] Developing these resources will likely result in additional opportunities for Tribal economic development and partnership, but if not appropriately managed, mining may also result in negative impacts on current Indian lands and ancestral homelands, as well as Tribal Treaty rights and cultural and natural resources.

The IWG reviewed a number of voluntary exploration and mining standards to assess best practices and innovative industry sustainability efforts. The scope and rigor of these standards vary greatly, and a comprehensive discussion or comparison of them is outside the scope of the IWG. In recent years, a number of comparisons of voluntary standards have been published, including those by SAFE,[50] the German Federal Institute for Geosciences and Natural Resources,[51] and the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development (IGF).[52] The downloadable Integrated Assessment Protocol developed by the Mining, Minerals and Metals (M3) Standards Partnership, which allows mine sites to compare their performance against four sustainability standards: IRMA, Responsible Jewellery Council, ResponsibleSteel, and Towards Sustainable Mining (TSM), is a particularly useful comparison tool.[53]

The IWG views the existence of these voluntary standards and the increasing industry use of them as positive developments. This report endorses the adoption of a number of components of voluntary standards—particularly ones from the IRMA standard developed by a multi-stakeholder coalition comprised of the mining industry, end-users, environmental and human rights NGOs, labor organizations, and others—but believes that additional work is required to determine whether adherence to a single voluntary standard can be adequate and appropriate for U.S. government purposes. At a minimum, the IWG believes that third-party review of company or mine performance against selected standards is necessary for achieving public trust and allowing the Federal government to base decisions on the reported level of compliance. Ideally, the third-party assessments would be conducted in accordance with international guidelines and standards for conformity assessment, and the results of these third-party assessments would be made public.

[49] *Supra*., note 8.
[50] SAFE Center for Critical Minerals Strategy, *A Global Race to the Top: Using Transparency to Secure Critical Mineral Supply Chains*, March 2023. https://secureenergy.org/a-global-race-to-the-top/.
[51] BGR, *Sustainability Standard Systems for Mineral Resources a Comparative Overview – 2022*, December 2022. https://www.bgr.bund.de/DE/Themen/Min_rohstoffe/Downloads/studie_sustainability_standard_systems_2022.pdf.
[52] IGF, *State of Sustainability Initiatives Review: Standards and the Extractive Economy*, 2018. https://www.iisd.org/system/files/publications/igf-ssi-review-extractive-economy.pdf.
[53] https://www.m3standardspartnership.org/m3-assessment-tool

A. Modern Mining Operations

The BLM and USFS regulate many different types and sizes of hardrock mining operations on federal lands that those agencies manage. Ores may be mined using underground or surface techniques, or sometimes a combination of both. There is a wide range in the size of mining operations, from small operations that may mine or process at rates of less than 1,000 tons per day to large open pit or block cave mines that operate at higher rates of tens of thousands to 100,000 tons per day or more. Likewise, there is a wide range of mine operational lives: some mines may operate for only a matter of years before closing, while others can operate for many decades.

Current mining operations occur under environmental policies and laws designed to manage the impact of mining on people and the environment. Environmental laws, such as FLPMA, NEPA, the Clean Air Act (CAA), CWA, NHPA, and the Safe Drinking Water Act (SDWA) have been in place for approximately 50 years and have improved environmental practices associated with mining in the United States. Environmental laws have decreased—but not eliminated—the risk of mining impacts on public health and the environment.[54] As a 1999 National Research Council study of mining on Federal lands concluded:

> The Committee did not have sufficient information to evaluate fully the environmental impacts of modern hardrock mining. Regulation of mining will limit and control many of these impacts, but mining will still alter landscapes and environmental resources because regulations generally are not designed to prevent all impacts, because some impacts are not addressed by regulations, and because it is unreasonable to expect there will not be violations or failures of the regulations.[55]

Mining operations include extracting ore from open pits or underground tunnels, facilitated with the use of explosives. During mining operations, topsoil and waste rock are removed in order to gain access to the ore. Waste rock may be redeposited into a previously mined area, but more frequently is placed in unlined piles at the mine site. Mined ore is generally processed at an on-site facility to produce concentrates of the valuable mineral being mined, or the mineral or metal itself may be produced. There are a variety of mine site processing techniques that may be used depending on the nature of the ore and mineral being extracted—crushing, grinding, gravity separation, flotation, and leaching are the most common—some of which require large amounts of water. A variety of chemicals and water are used during mineral processing. Tailings (wastes from mineral processing) are

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[54] *See* R.R. Seal, II et al., "Environmental Considerations Related to Mining of Nonfuel Minerals," *in* U.S. Geological Survey, *Critical Mineral Resources of the United States—Economic and Environmental Geology and Prospects for Future Supply*, K.J. Schulz et al. eds., 2017, pp. B1, B3-5. https://doi.org/10.3133/pp1802B.

[55] Committee on Hardrock Mining on Federal Lands, National Research Council, *Hardrock Mining on Federal Lands*, The National Academies Press, 1999, p. 62. https://doi.org/10.17226/9682.

managed and disposed of in various ways at the mine site. Tailings may be filtered and disposed of in stacks or as a slurry or thickened slurry in an underground mine or in surface impoundments.

Heap leaching is a processing method that involves percolating a leaching solution directly through mined ore on a pad or liner. Tailings are not produced with heap leaching, but the heap leach spent ore and leaching solutions must be properly managed to avoid contamination. In situ extraction, where a leaching solution is injected underground to extract minerals, avoids the generation of waste rock and tailings altogether, but must be carefully managed to ensure that the leachate solution and dissolved metals do not contaminate groundwater.[56] The type of leaching solutions used in in-situ and heap leaching depends on the mineral that is being dissolved. For example, sodium cyanide is commonly used in gold and silver heap leaching. Acids or alkaline chemicals are used for in-situ leaching of uranium.

Exposure of mine workings, spent ore, waste rock, and tailings to precipitation and surface waters can result in the generation of acid, known as acid rock drainage or acid mine drainage, and the leaching of heavy metals and other contaminants. Many thousands of acres of land and surface waters have been negatively impacted by the construction of open pits and mine tunnels, the direct disposal of tailings and waste rock from historic mining operations, and acid mine drainage. Surface waters and groundwater have been further impacted by erosion of wastes and leaching of contaminants from mine sites, which can include arsenic, cadmium, copper, mercury, lead, selenium, uranium, zinc, and other dissolved metals. A U.S. Bureau of Mines researcher estimated in 1990 that "12,000 miles of rivers and streams and 180,000 acres of lakes and reservoirs have been adversely affected" by mining and processing.[57] Impacts to air can occur from fugitive dust and chemical emissions, and, at uranium and rare earth mine sites, radon and other radioactive constituents. Fugitive dust and mercury emissions can redeposit near and far from the mine site, resulting in additional cumulative impacts on lands and waters. In addition, erosion and failures at tailings and waste rock disposal sites can occur over time.

Many mining operations require dewatering during mining to keep mines safe and dry during mining. Dewatering can result in hydrologic changes to groundwater and surface waters, depleting aquifers and degrading or eliminating streams, seeps, and springs. The water removed to facilitate mining must be managed properly and is often used in on-site mineral processing. Any excess water must be treated as needed, used off-site, or discharged to groundwater or surface waters. Operational water

[56] World Nuclear Association, "In Situ Leach Mining of Uranium," uploaded Sept. 2020. https://www.world-nuclear.org/information-library/nuclear-fuel-cycle/mining-of-uranium/in-situ-leach-mining-of-uranium.aspx.

[57] C.F. Wilkinson, *Crossing the Next Meridian: Land, Water, and the Future of the West*. Island Press, 1992, p. 49.

may be reused for processing, used to control fugitive dust emissions, evaporated in a tailings pond, or treated and discharged. Any water seepages may need to be collected and treated.

Proper waste management and water management are critical at mining sites, and evaluating the water balance of a site and how the balance may change over time is imperative to the success of a project. It is important to consider groundwater and surface water conditions, desired water discharge outcomes, anticipated maximum water events (i.e., a 100-year or more extreme event), and anticipated trends for future events, including changing climate conditions. These factors, as well as considerations for end of mine life, should be considered during plan development. Long planning horizons may be necessary given the potential for mine wastes and workings to release contamination well after mine closure. Finally, with the impacts of climate change increasing drought and water scarcity, the needs of mines to access large volumes of fresh or groundwater can exacerbate drought conditions. Water permits and allocations are most often managed by states.

Management measures to protect groundwater and surface waters include the use of well-engineered waste and tailings disposal sites, detoxification of heap leach facilities, water diversion systems to keep clean surface waters away from the mine site, water seepage and runoff collection systems, reuse of contaminated water in processing, and water treatment before discharging mine drainage, process waters, or other mine contact waters to land, surface waters, or groundwater.

Due to the large scale of some mining operations and the potential for the formation of acid rock drainage and metal leaching, tailings ponds and water management structures sometimes need to be maintained over long periods of time, and sometimes in perpetuity. As discussed more in section VI.A, leak detection and water quality monitoring in potential receiving surface- and groundwater sources are important components of all modern mining operations as well as efforts to reclaim abandoned mine lands (AML).

Operators of modern mines in historically mined areas generally make efforts to identify abandoned mine workings and infrastructure, and must carefully manage water and facilities so as not to compound impacts to lands, groundwater, and surface waters. This, too, can require long-term management commitments and protections. Infrastructure associated with mine sites can also result in negative impacts on Indian Tribes due to contamination and access issues.

As expressed in the Rulemaking Petition from Tribes, Tribal Organizations, and NGOs:

> Large-scale mining currently threatens the land base, Sacred Sites, Treaty rights, and invaluable cultural resources of Indigenous communities in every western state, including from uranium mining in New Mexico, Arizona, Utah, and Colorado, gold and

uranium in the Black Hills, gold and copper in Alaska and Montana, copper in Arizona, multiple metals in Idaho, gold and lithium in Nevada and California, and gold and other metals in and along the streams and rivers of the Pacific Northwest – to name just a few.[58]

B. Mining Waste Management Standards

Current mining operations on Federal land must comply with Interior's and USFS's general and specific performance and environmental protection regulatory standards for mining operations. Interior's regulatory performance standards, first promulgated in 1980, were updated in 2000 and 2001 and are more detailed than the performance standards for mining operations on National Forest System lands, which were promulgated in 1974.

Regarding water quality, the BLM and USFS require that operators comply with applicable Federal and State pollution control standards.[59] Pursuant to authority granted to the BLM in FLPMA, the BLM can require mitigation measures to protect land, air, water, wildlife, and cultural and other resources in applicable land use plans.[60] Similarly, the Forest Service can require mitigation measures for compliance with its environmental protection requirements under 36 C.F.R. § 228.8.

As a best practice, the BLM and USFS attempt to include the corresponding State or Federal water quality permitting agency in the review and/or approval process for notices or plans of operations. Both agencies require that an operator receive Section 401 certification under the CWA when applicable.[61] Tribes, States, or the EPA implement the National Pollution Discharge Elimination System (NPDES). Approval of a plan of operations is separate from discharge permit approvals.

States exercise varying degrees of controls and regulation over mine management and reclamation. New Mexico restricts new mining permits from being issued if environmental protection requirements will require perpetual care.[62] Colorado similarly requires that reclamation plans for new mines provide "a reasonably foreseeable end date for any water quality treatment necessary to ensure compliance with applicable water quality standards."[63] As both the BLM and USFS require mines to adhere to all

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[58] *Supra*., note 14.
[59] *See* 43 C.F.R. § 3809.420(b)(5); 36 C.F.R. § 228.8(b).
[60] Bureau of Land Mgmt., H-3809-1, Surface Management Handbook 5-15 § 5.3.5 (2012), https://www.blm.gov/sites/blm.gov/files/H-3809-1.pdf.
[61] U.S. Forest Serv., Forest Service Manual 2800 – Minerals and Geology, § 2817.23a (2007), https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd533980.pdf; 43 C.F.R. § 3809.420(b)(5).
[62] N.M. Stat. Ann. § 69-36-12(B)(4).
[63] Colo. Rev. Stat. Ann. § 34-32-116(7)(g)(II).

applicable State environmental laws, mines permitted by the BLM and USFS in Colorado and New Mexico must comply with those states' restrictions on perpetual treatment.

The IRMA standard generally prohibits long-term or perpetual water treatment unless:[64]

> a) All practicable efforts to implement best practice for water and waste management methods to avoid long-term treatment have been made;
> b) The company funds an engineering and risk assessment that includes consultations with stakeholders and determines that the contaminated water to be treated perpetually poses no significant risk to human health or to the livelihoods of communities if the discharge were to go untreated; and,
> c) The company takes all practicable efforts to minimize the volume of water to be treated.

Industry commenters have opined that extended post-closure water treatment is sometimes an "unavoidable" aspect of mining, and how long such treatment may be needed is not always known with certainty at the time a plan of operation is submitted. The IWG determined that there can be uncertainty in the predictions of closure and post-closure water quality and the relative likelihood of the need for post-reclamation water treatment. Uncertainties may be due to modeling inputs that are too variable or models that are not sophisticated enough, particularly when modeling many decades into the future. Further, the risks associated with long-term treatment vary depending on the site and therefore need to be considered on a site-by-site basis.

Industry commenters also assert that modern Federal and State mine regulations and environmental protection standards are sufficient to protect the environment when water treatment is needed, though this argument goes to the adequacy rather than longevity of water treatment. If long-term treatment is needed, long-term or potentially perpetual funding to operate and maintain treatment systems poses a challenge, in particular for our current bonding and reclamation systems, which can struggle to contemplate costs and impacts many decades into the future. This issue is addressed in more detail in the chapter on financial assurances.

Regarding tailings management, BLM and the USFS mainly rely on State regulations and expertise for tailings management and oversight of tailings dam construction, maintenance, and monitoring. Mine tailings are exempt from the Resource Conservation and Recovery Act (RCRA) Subtitle C hazardous waste regulations.

[64] IRMA Standard v.1.0 – June 2018, Paragraph 2.6.6.1.

Voluntary standards related to tailings management were significantly updated or newly developed after the disastrous failures of modern tailings dams at the Mt. Polley Mine in Canada (2014), Samarco in Brazil (2015), and Brumadinho in Brazil (2019). In response, several U.S. states updated their regulatory requirements for tailings dam operations and closure to be consistent with international standards.[65] While such improvements are encouraged, new standards can be challenging to implement at facilities that are already in operation. The need to reevaluate and monitor sites is key to maintaining safety and environmental compliance. A recent United States Society on Dams white paper identified some gaps in Federal and State dam safety programs and concluded that "[t]echnical guidance for tailings dam closure is limited at the federal level" and "*more* reform at the State level may be needed to align with the industry."[66]

Voluntary standards for mine tailings management for operators come from global voluntary standards bodies, including the ICMM, IRMA, the Mining Association of Canada's Toward Sustainable Mining Program, and the Global International Standard on Tailings Management (GISTM). The GISTM was released in 2020 after being developed by the ICMM, the United Nations Environmental Programme, and Principals for Responsible Investment. The GISTM strives to achieve the goal of zero harm to people and the environment, with zero tolerance for human fatalities.

In general, each of these standards requires the operator to have plans for the design, construction, operation, and monitoring of the tailings facility, some form of conformance assessment, adherence to best practices, an independent engineering review, and emergency preparedness and response plans. IRMA requires emergency and evacuation drills related to catastrophic failure of facilities to be conducted on a regular basis and requires independent, third-party assessments, whereas TSM and GISTM allow for internal audits. A significant portion of the mining industry, including members of the National Mining Association (NMA), has voluntarily adopted and uses the GISTM.

C. Inspection and Enforcement Authorities

Both the BLM and USFS periodically inspect permitted mining and exploration sites for compliance with applicable laws, regulations, and plan requirements.[67] BLM and USFS may inspect operations at

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[65] *See, e.g.* C.F. Cobb, *Update on Mine Tailings Dam Regulation in Alaska and North America.* Alaska Business Monthly, Jan 2017, p. 34-35. https://www.calistacorp.com/wp-content/uploads/2019/10/AlaskaBusiness-MineTailingsDamRegulation-CharlesFCobb.pdf.

[66] P.E. Crouse et al., U.S. Soc'y on Dams Committee on Tailings Dams, *USA Regulations and State of Practice for the Closure of Tailings Dams*, Apr. 2022, p. 26. https://www.ussdams.org/wp-content/uploads/2022/11/USA-REGULATIONS-STATE-OF-PRACTICE-FOR-THE-CLOSURE-OF-TAILINGS-DAMS-White-Paper-Approved-8.25.22.pdf (emphasis added).

[67] *See* 43 C.F.R. § 3802.4-6 (explaining that an authorized BLM officer shall periodically inspect exploration and mining operations); 36 C.F.R. § 228.7(a) (explaining that Forest Service officers shall periodically inspect operations).

any time. BLM policy requires that notice-level operations be inspected once annually, plan-level operations be inspected at least twice annually, and operations using leachate or with significant potential for acid drainage be inspected at least four times per year. The USFS adjusts inspection frequency based on the complexity of the operation, with more complex operations being inspected as often as weekly. Both agencies always conduct inspections once operations have ceased to ensure that the operator has met its reclamation and closure responsibilities.[68]

As long as mining operations continue and there is not a significant change in conditions, the approved plan remains in place.[69] Companies may cease commercial production at a mine when commodity prices or other factors make continued production uneconomic. When production ceases, an interim management plan is required and the company must maintain an adequate financial guarantee to allow for site reclamation.[70] When operations have been inactive for five consecutive years, the BLM will review the operations and determine whether to terminate the plan and direct final reclamation and closure.[71]

The Rulemaking Petition and several RFI commenters asserted that the ability of an operator to retain a site and its plans of operation with minimal maintenance allows mines to postpone closure for decades or longer, regardless of changing environmental or socioeconomic conditions or unanticipated events. The Rulemaking Petition recommended that the BLM and USFS require the termination of a plan of operation if operations have not produced valuable minerals for five consecutive years.[72]

Current Interior regulations do not provide for civil penalties in the event of operator violations, and FLPMA does not explicitly provide that authority. The BLM's surface management regulations at 43 C.F.R. Subpart 3809 govern mining operations to prevent unnecessary or undue degradation. Operators that violate any provision of a notice, plan of operation, or requirement of the 43 C.F.R. subpart 3809 regulations may be issued a noncompliance order. The BLM may order a suspension of operations if the operator fails to timely comply with a noncompliance order for a significant violation, the agency notifies the operator of its intent to issue a suspension order, and BLM provides the operator with the opportunity for an informal hearing before the BLM State Director to object to

[68] 43 C.F.R. §§ 3809.332, 3809.420(b)(3)(iii), and 3809.600.
[69] 43 C.F.R. § 3809.423. Plans of operations or plan approval documents for mining on National Forest System lands will usually have a termination date, subject to any extensions by the authorized officer. *See also* 36 C.F.R. § 228.10 (covering cessation of operations and removal of structures and equipment).
[70] 43 C.F.R. § 3809.424(a)(1).
[71] 43 C.F.R. § 3809.424(a)(4).
[72] *Supra*., note 14, Attachment 7.

the suspension.[73] The BLM may also request that the Attorney General seek injunctive relief and criminal penalties for knowing and willful violations.[74]

BLM's regulations regarding use and occupancy of land under the mining laws are codified in 43 C.F.R. subpart 3715. Under subpart 3715, the BLM may issue an immediate suspension order if use and occupancy is not reasonably incident to prospecting, mining, or processing operations; if the operator is not in compliance with all applicable Federal and State standards, including obtaining all required permits; or an immediate, temporary suspension is necessary to protect health, safety, or the environment.[75] Operators who fail to comply with such an order may be subject to a civil action in the United States District Court.[76] In such an action, the United States can demand monetary compensation for damages. The BLM may also seek cooperative enforcement by a State or other Federal agency that has civil penalty authority. BLM field staff reported to the IWG their impression that operators treated BLM enforcement actions less seriously because of the lack of civil penalties. BLM reports that it has issued 89 suspension orders since 2000 under the current subpart 3809 regulations, and 12 immediate suspension and 10 cessation orders under subpart 3715.

The USFS's locatable mineral regulations, which are codified at 36 C.F.R. 228.7, provide for the issuance of a notice of noncompliance if an operator fails to comply with its operating plan or applicable regulations, and noncompliance is unnecessarily or unreasonably causing injury, loss, or damage to surface resources. The notice will identify the nature of the noncompliance and a time frame in which to correct it, usually not more than 30 days. The operator may appeal the notice. In cases where an operator is conducting operations that are not reasonably incident to mining operations and creating injury, loss, or damage to National Forest System resources, the operator can be charged with violations under the USFS's 36 C.F.R. 261 regulations. If the noncompliance is not resolved, the USFS may pursue civil actions to halt the operations and seek compensation for damages and reclamation of the site. Depending on the nature of the violation and damage, an operator may be charged civilly or criminally by a U.S. Attorney for violations of environmental laws. As with the BLM, the USFS may seek cooperative enforcement with other Federal or State agencies that have authority.

While State enforcement for air and water quality regulations or other delegated programs may be more efficient than BLM or USFS enforcement due to stronger penalties or clearer enforcement authorities, reliance on State enforcement does not guarantee that Federal land management or reclamation objectives can be achieved. Neither the BLM nor the USFS have explicit authority to

[73] 43 C.F.R. § 3809.601.
[74] 43 C.F.R. §§ 3809.605, and 3809.700.
[75] 43 C.F.R. § 3715.7-1(a).
[76] 43 C.F.R. § 3715.7-2.

impose civil or administrative monetary penalties in order to incentivize compliance. The lack of meaningful enforcement authority is a longstanding problem. The 1999 National Research Council, whose members are drawn from the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, issued a report, "Hardrock Mining on Federal Lands," recommending that "Federal land managers in BLM and the USFS should have both (1) authority to issue administrative penalties for violations of their regulatory requirements, subject to appropriate due process, and (2) clear procedures for referring activities to other Federal and State agencies for enforcement."[77] The report stated that more consistent and accessible procedures for deciding when to refer apparent violations to other agencies and the ability to issue reasonable administrative penalties would improve the efficiency of agency operations and enhance the protection of the environment.

D. Reclamation of Mined Lands

Mining operations can impact air quality, surface water, groundwater, vegetation, wildlife, and fish, as well as Tribal resources, historic properties, cultural and paleontological resources, the climate, and more. At the end of a mine's operational life, surface disturbances must be reclaimed,[78] and mining facilities are closed in accordance with approved reclamation plans. Reclamation and closure practices can include backfilling open pits, plugging underground mine openings, re-grading the land surface, covering and revegetating disturbed areas, treating contaminated water, removing structures, and more. The reclamation and closure process may take several years or more, depending on the closure plan and local environmental conditions. After reclamation, some mines will require ongoing long-term maintenance and monitoring of structures, such as tailings dams and/or long-term treatment of water from waste rock and tailings seepages or open pit water discharges.

The development of detailed mine plans, waste rock management plans, water management plans, tailings management plans, and reclamation and closure plans is critical to ensuring that wastes and waters are appropriately managed to prevent adverse impacts. The plans include environmental and operational monitoring and adaptive management since material characterization, process water quality and quantity, and other environmental conditions can change over the life of the operation and through closure.

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[77] *Supra*., note 55 at 102.

[78] Reclamation means taking measures following disturbance of public lands caused by operations to meet applicable performance standards and achieve conditions required by BLM at the conclusion of operations. *See e.g.*, 43 C.F.R. § 3809.5 (BLM's definition of reclamation). Mitigation may not return the land to pre-disturbance conditions. Large excavations may remain, and waste rock disposal sites may not resemble pre-development conditions.

Current mining practices and regulations have reduced mining's impacts on the environment compared to the impacts of historic mining operations. Regulations developed in recent decades have significantly reduced the risk that mines currently in operation will be abandoned by the operator without adequate financial assurances. While significant impacts can and do result from existing mining operations and are discussed elsewhere in this report, we focus here on impacts resulting from historically abandoned mining operations because those lingering impacts are a reminder of what may occur in the absence of strong regulations protecting environmental quality.

The Government Accountability Office (GAO) estimates there are more than 161,000 abandoned mine sites in the Western United States and Alaska,[79] a great number of which are on or proximate to Indian lands.[80] In 2020, GAO reported that of the abandoned hardrock mine features on Federal lands, "about 67,000 pose or may pose physical safety hazards—danger of injury or death—and about 22,500 pose or may pose environmental hazards—risks to human health or wildlife from long-term exposure to harmful substances."[81] These estimates appear to be conservative in nature, as agency officials estimated that there are hundreds of thousands of abandoned hardrock mine features on Federal land that they have not captured in agency databases.[82] The report estimates that:

> with the [BLM's] current abandoned mine budget and staff resources, it could take up to 500 years to confirm the presence of physical safety or environmental hazards at the approximately 66,000 features in its database and the estimated 380,000 features not yet captured in its database.[83]

Since a full survey of abandoned mines has never been conducted, additional sites and features will likely be identified and require reclamation and remediation.

Both technological advances in tailings reprocessing and primary ore economics can change with time, and the reprocessing of AMLs and mine or mill tailings may represent an opportunity to mitigate harm. Advances in reprocessing may be impactful since, increasingly, remining legacy mine wastes may be a faster and more economical pathway to mineral extraction while offering valuable resources in addition to recycling and extraction from high-grade ores.[84] The United Nations' Sustainable

[79] *Supra*., note 40 at 10.
[80] *Supra*., note 45.
[81] *Supra*., note 10
[82] *Id.* at 15.
[83] *Id.* at 36.
[84] *See generally, e.g.*, E. Holley et al., *Critical Minerals and the Legacy Mine Environment: A Proposed Data Collection Program to Help Address the U.S. Critical Minerals Gap*. Colorado School of Mines: Payne Commentary Series, 2022. https://www.mines.edu/global-energy-future/wp-content/uploads/sites/361/2022/10/Payne-Institute-Commentary-Critical-Minerals-and-the-Legacy-Mine-Environment-final.pdf; M. de le Lurdes Dinis et al., *Characterization of a Mine*

Development Goals encourage reuse of residuals, remining, and reprocessing tailings to recover critical minerals.[85]

Public commenters, States, Tribes, and industry stressed the importance of remediating and reclaiming AMLs. Some progress may be made by remining and reprocessing contaminated lands. Additionally, Good Samaritan laws that limit liability for groups that are not linked to prior mining and who seek to rehabilitate contaminated sites offer promise. Although there was not uniform agreement as to the usefulness of Good Samaritan protections for significantly accelerating such reclamation, commenters did agree that Good Samaritan laws are worth pursuing. Commenters also uniformly agreed about the need for more funding to address the problem of abandoned hardrock mines, although there was disagreement about how to source those funds.

V. Mining Law and System Today

As of 1872, all minerals other than coal on Federal public domain lands were open to location of mining claims. As time passed and national interests evolved, Congress set aside national parks and reserved other areas as off-limits to mining. Over time, Congress also removed a number of minerals from the operation of the 1872 Mining Law. The Mineral Leasing Act of 1920 (Mineral Leasing Act)[86] made the disposition of oil, natural gas, coal, oil shale, phosphate, and sodium subject to discretionary Federal leasing decisions, and established a royalty on the value of the minerals that were produced and sold pursuant to that act. Today, however, almost all hardrock minerals, including gold and silver, on Federal lands where the Mining Law applies remain subject to disposition under this Civil War reconstruction era law. The Mining Law also applies to the critical minerals that are needed to support our modern economy and fuel our transition to renewable energy—minerals like graphite, lithium, and cobalt.

Mining on Federal lands is about much more than acquiring access to minerals, which is the primary purpose of the Mining Law. Modern mines are subject to environmental requirements and often look little like their predecessors. The environmental and resource management laws that overlay mineral acquisition and development were enacted at a very different time in our nation's history and under very different imperatives. Laws like the NEPA and NHPA require consideration and disclosure of environmental consequences prior to making decisions. The National Forest Management Act

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Legacy Site: An Approach for Environmental Management and Metals Recovery. 27 Env't Sci. Pollution Rsch. Int'l, Jan. 2020, p. 10103. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7089905/pdf/11356_2019_Article_6987.pdf.

[85] United Nations Department of Economic and Social Affairs, Sustainable Development Goals. https://sdgs.un.org/goals.

[86] 30 U.S.C. § 181 et seq.

(NFMA)[87] and FLPMA,[88] both enacted in 1976, require a systematic inventorying of resources and careful planning and management of the lands and resources charged to the BLM's and USFS's care. NFMA and FLPMA also require the agencies to carefully balance a suite of competing uses. Despite the emphasis on planning that developed a century after the Mining Law's passage, the BLM and USFS may not use land use planning to determine where mining claims can be filed or associated surface disturbances may occur, making it difficult to balance the needs of mining with other multiple uses. And while the Secretary of the Interior has the authority under section 204 of FLPMA to withdraw Federal lands from operation of the Mining Law, such withdrawals are subject to valid existing rights, meaning that valid mining claims predating a withdrawal are unaffected by that withdrawal. Land management planning may, however, include stipulations on where and under what conditions activities related to mine development—like road and utility development or overburden and waste disposal—may occur.

Other laws, such as SDWA, CAA, CWA, and the Toxic Substances Control Act add additional substantive requirements to minimize harm to public health and the environment.

The Biden-Harris administration also recognizes that past actions have disproportionately impacted communities of color, Tribes, and Alaska Native Villages. The Administration is taking a number of restorative actions, such as the establishment in E.O. 14008, "Tackling the Climate Crisis at Home and Abroad," which created a working group to "coordinate the identification and delivery of Federal resources to revitalize the economies of coal, oil and gas, and power plant communities," and the Justice40 Initiative, which aims to direct at least 40 percent of the overall benefits of energy efficiency and environmental remediation programs to disadvantaged communities.[89]

A. Mining Law.

1. Mining Law of 1872, Location System

The General Mining Law[90] authorizes citizens to explore for valuable mineral deposits and stake or "locate" mining claims on certain Federal lands. Mineral deposits that are locatable under the Mining Law include non-metallics (such as gemstones, gypsum, and uncommon varieties of marble, among

[87] 16 U.S.C. § 1600 et seq.
[88] 43 U.S.C. § 1701 et seq.
[89] Exec. Order No. 14,008 §§ 218, 223, 86 Fed. Reg. 7619, 7628, 7831 (Feb. 1, 2021).
[90] 30 U.S.C. § 22 et seq.

others) and metallic minerals (such as copper, gold, lead, molybdenum, nickel, silver, zinc, and many other critical and non-critical minerals).[91]

Lands that are open to exploration and the location of new mining claims under the Mining Law include BLM-managed public domain lands, National Forest System lands reserved from the public domain (managed by the USFS), and certain split-estate lands where the mineral estate is reserved to the United States while the land surface is owned by Tribal, State, or private entities. There are also some mining claims on National Park System and NWRS lands and other lands that are subject to protective designations. Mining claims on protected lands were located at a time when those lands were open to location under the Mining Law, and while the lands were subsequently withdrawn, valid existing rights predating withdrawals may remain. The BLM is responsible for administering mining claims on all Federal lands, regardless of surface ownership or management, while the relevant surface management agency generally oversees mineral exploration, development, and reclamation, as discussed below.

A valid mining claim provides the holder with a possessory interest in the claimed lands and the right to develop the locatable mineral deposits in the mining claim, although legal title to the lands remains with the United States. If a mining claimant makes a "discovery" of a valuable mineral deposit within the boundaries of their mining claim and complies with all applicable requirements regarding the location and maintenance of mining claims, the mining claim is considered a valid property interest that can be asserted against all others, including the Federal government. The Mining Law does not require mining claimants to develop or extract minerals from their mining claims within a certain timeframe; rather, a mining claimant can hold their claim indefinitely without development so long as they comply with all applicable laws and regulations, such as by paying an annual maintenance fee or, in the case of a fee waiver, performing assessment work.

The lack of time limits is seen as a benefit to hardrock mineral developers because it provides operators time to raise capital, identify, explore, develop, and begin producing valuable hardrock deposits, which can easily take more than 20 years, often much longer than for other mineral types such as oil, gas, or coal. This security of tenure also provides flexibility to accommodate advances in technology or changes in commodity prices that can impact the commercial viability of specific deposits.

[91] *See* 43 C.F.R. §§ 3830.11, 3830.12 (describing minerals subject to location under the Mining Law, including certain mineral materials that were located before a certain date or are considered "uncommon" because they possess a distinct and special value). If there is a question about whether the mineral is locatable under the Mining Law, the BLM will conduct a mineral examination before allowing mining operations. *See id.* § 3809.101.

Others, including Tribes, NGOs, and many members of the public, see the potentially indefinite nature of claims as problematic. They fear Federal agencies may be reluctant to invest in site development, interpretation, restoration, or other activities on public lands that are subject to mineral claims because the benefits of those investments could be cut short by future mining activity. Other commenters suggested that the existence of undeveloped claims may complicate renewable energy or fluid mineral development if such development would be incompatible with mining. Still others noted that the existence of undeveloped claims may hinder efforts to develop critical minerals by other miners, especially where prior claims are held for speculative purposes or by an entity lacking the financial resources to proceed to development in a timely manner.

Claimants may also locate mill sites of up to 5 acres on non-mineral land to construct processing facilities or perform other activities "reasonably incident" to mineral development.[92] These are generally referred to as "ancillary activities." There is ongoing litigation over how many mill sites may be located for each mining claim.[93] There has also been litigation in the U.S. Court of Appeals for the Ninth Circuit over whether the Mining Law provides operators the right to conduct ancillary activities, such as processing and tailings disposal, on certain mining claims.[94] DOI's Office of the Solicitor recently addressed this issue by releasing an opinion to clarify options for mine operators seeking to site mine waste or tailings facilities on BLM-managed lands, and withdrew two previous opinions that were found to contain material errors.[95] Due to the rapidly evolving nature of the issue and the active litigation involving similar facts, the IWG is not making regulatory or policy recommendations on mill sites or ancillary uses. The IWG believes these kinds of disputes highlight some of the difficulties in relying on a 150-year-old access law for modern mining operations. Congressional action on these questions would be helpful.

Other practical complications arise at the interface of the Mining Law and FLPMA's withdrawal authorization. One is the requirement to go through a withdrawal process under FLPMA on a periodic basis (usually once every 20 years) in order to keep certain withdrawn lands from automatically reopening to new mining claims. Occasionally, that process is not completed in time, such as at the contaminated abandoned Zortman-Landusky mine site in Montana. During a 48-hour period during October 2020 when the site was not withdrawn, 10 new claims were located, causing outrage among nearby Tribal communities already suffering impacts to their lands and waters from the previous

[92] 30 U.S.C. § 42; 43 C.F.R. § 3832.30 (BLM mill sites); 36 C.F.R. Part 228, subpart A (USFS ancillary uses).
[93] *See generally*, *Earthworks v. U.S. Dep't of Interior*, 496 F.Supp 3d. 472 (D. D.C. 2020), *stay lifted by Earthworks v. U.S. Dep't of Interior*, 2023 U.S. App. LEXIS 1696 (DC. Cir. 2023).
[94] *See generally Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv.*, 33 F.4th 1202 (9th Cir. 2022) (involving the proposed Rosemont Mine).
[95] M-37077, "Use of Mining Claims for Mine Waste Deposition, and Recission of M-37012 and M-37057," U.S. Department of the Interior Office of the Solicitor, May 16, 2023.

mining operations.[96] The new claims and potential for future mine development complicate years of efforts to remediate the abandoned site. At Browns Canyon in Colorado, a gap in the withdrawal period allowed a number of mining claims to be staked within a high-value recreation area along the Arkansas River that was shortly thereafter designated a national monument.[97] Mineral development would complicate, if not compromise, efforts to manage the national monument to protect the resources that led to its designation.

Another issue involves the location of new claims on abandoned or historic mine lands. An increasing number of claims may be located on AML sites because of growing interest in reprocessing mine tailings or developing new mines at AMLs to obtain new supplies of critical minerals. While such claims are a positive development to the extent that such sites can be a new source of minerals and remediated in whole or in part by a new operator, it is also potentially problematic if new claimants hold lands for speculative purposes or lack the capacity to proceed with timely redevelopment. Some mining claimants also object to Federal and State efforts to remediate health or safety hazards on their claims, asserting that remediating these features would complicate future mining efforts or diminish the value of their claim. The existence of such objections can create additional hurdles or dissuade an agency from pursuing a non-time-sensitive reclamation.

One issue that has been temporarily addressed by Congress is the ability of holders of valid mining or mill site claims to obtain fee title or "patent" to the claims.[98] After a mining claimant obtains a patent for a claim, the land encompassed by the claim is transferred out of public ownership and into private hands. Unless otherwise provided by law, exploration and development of the mineral deposits on those lands are no longer subject to Federal regulations governing mining operations under the Mining Law. In 1994, Congress imposed a moratorium on BLM's processing of patent applications, which has been extended each year since.[99] The durability of the moratorium, however, remains uncertain because it depends on continued congressional extensions.

Mining claimants pay no Federal royalties on most hardrock minerals extracted from Federal land.[100] Mining claim holders pay only one-time claim location fees and processing fees (location fee $40,

[96] Amanda Eggert, "New Mining Claims at Zortman Prompt Push for Investigation." Montana Free Press, Oct. 6, 2021. https://montanafreepress.org/2021/10/06/mine-claims-in-zortman-promp-call-for-investigation/.
[97] Notice of Proposed Withdrawal and Opportunity for a Public Meeting; Colorado, 78 Fed. Reg. 20134 (Apr. 3, 2013).
[98] *See* 30 U.S.C. §§ 29, 37, 42; 43 C.F.R. Part 3860.
[99] *See* Department of the Interior and Related Agencies Appropriations Act of 1995, Pub. L. No. 103-332 § 112, 108 Stat. 2499, 2519 (Sept. 30, 1994) (moratorium). *See also* U.S. Gov't Accountability Off., GAO-21-299, Federal Land Management: Key Differences and Stakeholder Views of the Federal Systems Used to Manage Hardrock Mining, 2021, p. 16 (explaining that the moratorium has been extended annually ever since it was first imposed).
[100] In instances where a single site includes minerals subject to disposal under the Materials Act of 1947 or the mineral leasing laws, as well as the Mining Law, the operator must obtain all applicable authorizations and pay any related fees or royalties for the non-locatable minerals removed.

processing fee $20), and claim holders that do not qualify for fee waivers pay annual maintenance fees ($165 per lode claim or site, and $165 for each 20 acres or portion thereof for a placer claim).[101] The use of these fees is discussed in more detail in the chapter on Royalties and Revenues. These fees, however, are small in comparison to the value of the minerals developed, and taxpayers receive little if any compensation for the extraction and development of public goods. Mining claimants are also not required to report to the Federal government what locatable minerals are being extracted from Federal lands or the amount or value of the minerals extracted. The lack of reporting severely complicates assessing the extent to which domestic production is likely to meet present and future needs.

2. Mineral Leasing and Sale Authorities and System

On acquired lands[102] and certain public domain lands,[103] minerals that would otherwise be locatable may be accessed through a leasing system if the areas have been identified by the BLM or USFS as open to mineral activity in a land management plan. Leasing of hardrock minerals on certain acquired lands was authorized by the Act of March 4, 1917,[104] and subsequent laws further adjusted the lands subject to hardrock mineral leasing, and gave the Secretary of the Interior the authority to conduct such leasing on USFS lands.

Although the Secretary of the Interior has authority to issue hardrock permits and leases on acquired National Forest System lands, that authority is subject to consent by the USFS, and mineral exploration and development must proceed in accordance with any conditions specified by the USFS to protect the primary purposes for which the lands were acquired. The USFS may generally deny consent or condition consent for use on the protection of surface resources. The USFS is also responsible for responding to BLM requests for consultation on specific operating plans regarding surface use and reclamation. The BLM administers these mineral leases under Interior's regulations governing leasing of solid minerals other than oil shale and coal at 43 C.F.R. Part 3500.

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[101] These are the current maintenance and location fees. The BLM adjusts the fees at least every five years using the Consumer Price Index published by the Bureau of Labor Statistics of the Department of Labor. The maintenance and location fees were last updated in 2019. *See* Required Fees for Mining Claims or Sites, 84 Fed. Reg. 31219 (July 1, 2019).
[102] Acquired lands are lands or interests in land that the United States obtained via purchase, gift, condemnation, or other legal process. Acquired lands are distinct from the public domain, which was ceded to the Federal government by the Second Continental Congress or acquired by the Federal government via treaties with sovereign governments.
[103] *See, e.g.*, 17 Stat. 465 (1873) (codified as amended at 30 U.S.C. § 48) (excluding Michigan, Wisconsin, and Minnesota); 19 Stat. 52 (1876) (codified as amended at 30 U.S.C. § 49) (excluding Missouri and Kansas). See 43 C.F.R. § 3503.13 for a full list of lands on which hardrock mineral leases may be issued.
[104] 16 U.S.C. § 520.

Prospective miners must follow the steps detailed in Interior's regulations in order to obtain a prospecting permit, exploration license, or lease. The terms of the permit or lease provide the operator with a temporary right of use and occupation. A prospecting permit is effective for an initial term of two years, and the BLM may extend it for up to four more years. An exploration license is in effect for two years. An initial lease may not exceed 20 years but can be renewed for 10 years at the end of the initial term and for subsequent 10-year periods. Operators pay Federal royalties on minerals produced from leased lands and are required to report production data, which includes the minerals being extracted and the amount or value of those minerals. Operators also pay one-time permit or lease fees and annual per-acre rental fees. While hardrock leasing has been available on acquired lands for decades, there are relatively few hardrock leases in practice. As of 2018, 97 percent of the 748 authorized hardrock mining operations on Federal lands were authorized under the location system.[105]

The Materials Act of 1947 (Materials Act),[106] authorizes the disposal of mineral materials such as common varieties of sand, stone, and gravel via direct sale or free use when the disposal: (1) is not otherwise expressly authorized by law, including the U.S. mining laws; (2) is not expressly prohibited by laws of the United States; and (3) would not be detrimental to the public interest. The BLM administers disposal of mineral materials under Interior's regulations at 43 C.F.R. Part 3600. The USFS manages mineral materials under its regulations at 36 C.F.R. Part 228 Subpart C. Notably, the BLM is required to sell mineral material resources for "not less than fair market value,"[107] so even sand, stone, and gravel generate more direct revenue for taxpayers than hardrock minerals such as gold, silver, copper, and critical minerals.

Many NGOs, stakeholders, and a number of Tribes support either the establishment of a nationwide hardrock leasing system to replace the current claim system or comprehensive land-use planning to identify areas that should be made off-limits to mineral exploration and development. For example, one letter from 22 environmental and conservation groups stated:

> A leasing regime paired with modern rules for hardrock minerals would afford many benefits. It would create a framework for land managers to undertake comprehensive planning in a transparent and open public process. A comprehensive planning approach can provide a certain, upfront determination whether or not lands and areas are suitable for hardrock mining. A leasing regime would afford Tribes and local communities early and comprehensive engagement and help identify areas that should be off-limits from mining due to other resources, land uses, or values that are

[105] U.S. Gov't Accountability Off., GAO-21-299, Federal Land Management: Key Differences and Stakeholder Views of the Federal Systems Used to Manage Hardrock Mining, 2021, p. 10. https://www.gao.gov/products/gao-21-299.
[106] 61 Stat. 681 (codified as amended at 30 U.S.C. § 601 et seq.).
[107] 43 C.F.R. § 3601.6(b).

> incompatible with hardrock mining development. A leasing regime, as proposed in H.R. 7580, would reduce, and even avoid some of the conflicts that result under the current law, obtaining better outcomes for Indigenous and mining-affected communities, land managers, and industry. This is because a leasing regime's comprehensive land use planning (and reasonable royalties) will afford mining-affected communities better access to information and opportunities to improve results. It is also necessary for providing a fair return to taxpayers and helping ensure mining lessees earn a social license to operate.[108]

However, the mining industry cautions against adopting a leasing system for hardrock minerals and identified a number of drawbacks to the existing Federal hardrock leasing system. In particular, they point to the small number of mining operations under the hardrock leasing system as evidence that the system has failed. As a mining industry group states:

> The U.S. currently has a process for leasing federal hardrock minerals on acquired lands that does not work. Unrealistic spatial and temporal constraints in the federal leasing system impede exploration, are incompatible with hardrock mining timelines, do not generate substantial federal revenue, and do not provide adequate security of tenure. Consequently, there is very little mining on acquired lands despite their mineral potential.[109]

The IWG notes, however, that most countries and local jurisdictions (including U.S. states for state-owned land) use a leasing system for hardrock minerals. Even those that maintain a claim system for exploration, including Canadian provinces, require transfer to a lease for commercial production.[110] While few, if any, commenters expressed support for the existing U.S. hardrock leasing system, international experience demonstrates that hardrock leasing systems are workable if designed properly.

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[108] Letter from Arizona Mining Reform Coalition et al. to Steven Feldgus, Deputy Asst. Sec., Lands and Minerals Mgmt., Dep't of the Interior, Interagency Working Group, Aug. 30, 2022, p. 2. https://www.biologicaldiversity.org/programs/public_lands/mining/pdfs/Interagency-Working-Group-Mining-Comments-leasing-083022.pdf.

[109] American Exploration & Mining Association Response to Request for Information to Inform the Interagency Working Group on Mining Regulations, Laws and Permitting, Apr 30, 2022, p.11. https://www.miningamerica.org/wp-content/uploads/FINAL-AEMA-Response-to-IWG-RFI-August-08-30-22.pdf.

[110] *Supra*., note 9, pp. 1, 49, and 63.

B. Mining Regulations

- Mining Regulations on BLM-managed public lands

FLPMA, when enacted in 1976, maintained the majority of the Mining Law, but it does require that the Secretary of the Interior, by regulation or otherwise, prevent unnecessary or undue degradation (UUD) of the public lands.[111] FLPMA and Interior's surface management regulations establish procedures and standards to ensure that mining operators and claimants prevent UUD to the public lands, and to provide for maximum coordination with appropriate State agencies.[112] FLPMA does not define UUD but gives the Secretary of the Interior broad latitude in determining what constitutes UUD, which the agency did in the context of hardrock mining through the regulations at 43 C.F.R. subparts 3715, 3802, and 3809. FLPMA, BLM regulations, and policies found in Instruction Memoranda, Manuals, and Handbooks, also guide the BLM in engagement with Tribal Nations and the public during the evaluation of locatable mineral development proposals.

Interior's mining regulations under FLPMA were promulgated in 1980, then comprehensively amended in 2001.[113] The regulations governing mining operations under the Mining Law on BLM-managed public lands are codified at 43 C.F.R. Parts 3715, 3802, and 3809, with detailed guidance to employees on implementing those regulations in BLM Handbooks H-3809-1, "Surface Management" and H-3809-2 "Surface Management Bond Processing."[114]

Whether and how the public is engaged in BLM's permitting process depends on the category of exploration or mining operations. For regulatory purposes, the BLM divides operations into three categories according to the size, type, and location of the operations. The first category is "casual use."[115] Casual use involves no or negligible surface disturbance, generally includes the collection of samples using hand tools, and does not include the use of mechanized earth-moving equipment, occupancy, or operations in areas where the cumulative effects of the activities result in more than negligible disturbance.[116] Casual use requires no notice by the operator to the BLM prior to the initiation of activity.

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[111] 43 U.S.C. § 1732(b). *See also* 43 C.F.R. § 3809.5 (defining "unnecessary or undue degradation").
[112] 43 C.F.R. § 3809.1.
[113] Surface Management of Public Land Under U.S. Mining Laws; Proposed Procedure to Minimize Adverse Environmental Impacts, 45 Fed. Reg. 13956 (Mar. 3, 1980); Mining Claims Under the General Mining Laws; Surface Management, 66 Fed. Reg. 54834 (Oct. 20, 2001).
[114] Bureau of Land Mgmt., H-3809-1, Surface Management Handbook (2012). https://www.blm.gov/sites/blm.gov/files/H-3809-1.pdf.
[115] 43 C.F.R. § 3809.10(a).
[116] 43 C.F.R. § 3809.5.

The second category involves "notice"-level activities. Notice-level activities are exploratory mineral investigations of 5 acres or less of public lands and less than 1,000 tons of bulk sampling. A notice submission is provided to and processed by the local BLM Field Office. The notice contains operator information; a description of activities and measures taken to prevent UUD, including maps and the schedule of operations; a reclamation plan; and a reclamation cost estimate.[117] Upon receipt of the notice, the BLM reviews the notice for completeness, to ensure that implementation of the proposed activities would not cause UUD, and to ensure that the notice conforms to the performance standards in the BLM's regulations. The BLM has 15 days to review the notice (with a potential 15-day extension). If the notice is complete and BLM determines the proposed activities will not cause UUD, the operator may commence the activities set forth in the notice after the operator provides BLM with a financial guarantee for reclamation that meets the applicable requirements.[118] Reclamation of surface disturbance according to the reclamation plan must occur upon completion of exploration or expiration of the notice, and before release of the financial guarantee.[119] The notice is valid for two years, but the operator is allowed to seek subsequent two-year extensions.[120]

When a notice is filed, it is recorded in the BLM's publicly accessible database, LR2000 (https://reports.blm.gov/reports/LR2000). BLM is currently transitioning from LR2000 to the Mineral and Lands Records System (https://reports.blm.gov/reports/MLRS). These systems do not currently contain a searchable map function and require a significant amount of familiarity with mining operations, operators, and the claim system in order to identify specific notices. Field offices may also make notices available in the publicly accessible rooms within those field offices.

BLM only reviews notices for completeness and as an exercise of its enforcement power to protect against UUD and does not formally approve notices. There is no discretionary agency action and therefore no obligation to conduct NEPA analysis, consult under the Endangered Species Act (ESA), or consult under E.O.s on Tribal consultation. Unless the operator voluntarily conducts outreach, the public and Tribes are unlikely to be made aware of impending notice-level operations until activity has commenced. As noted earlier, notice level activities may involve exploratory mineral investigation of up to 5 acres and less than 1,000 tons of bulk sampling.

In areas designated as Wild and Scenic Rivers or areas nominated for addition to the Wild and Scenic Rivers system, controlled or limited use lands in the California Desert Conservation Area, Areas of Critical Environmental Concern, areas designated as closed to off-road use, lands or waters containing listed or proposed Threatened and Endangered species, and National Monuments and National

[117] 43 C.F.R. § 3809.301.
[118] *See* 43 C.F.R. §§ 3809.311-313, 3809.500.
[119] *See* 43 C.F.R. §§ 3809.332, 3809.590.
[120] 43 C.F.R. § 3809.332.

Conservation Areas, any operations above casual use require the submission and approval of a plan of operations.

The third category of mining operations on BLM-managed lands involves mineral exploration or production operations that cause a cumulative surface disturbance of more than five acres, or any activity other than casual use in specially designated conservation areas such as the ones listed directly above. Activities within this category require submission and approval of a plan of operations.[121]

Following receipt of a complete proposed plan of operations and before taking any action on the proposed plan, the BLM publishes a notice of availability of the plan in a local newspaper of general circulation, and accepts public comment for at least 30 days. The BLM often combines this step with the initiation of scoping for an Environmental Assessment (EA) or Environmental Impact Statement (EIS) analyzing the plan, which typically come with 30-day or 45-day comment periods, respectively.[122] The public is only informed and given an opportunity to comment after the complete plan of operation is received and the NEPA process has begun. For EA-level operations, there is no specific requirement governing the timing of public participation, although BLM does sometimes conduct public scoping for EAs for particularly large or complex operations, or ones expected to have a significant level of public interest.

- Forest Service Mining Regulations

The USFS promulgated regulations in 1974 to minimize the surface effects of mining activities on National Forest System lands and these regulations not been significantly revised since then.[123] Mining-related effects that are essentially no greater than what an average forest user would cause require no specific authorization and therefore no review. NEPA analysis and public disclosure are also not applicable because no review or authorization is required. Operators whose mining-related effects might cause a significant disturbance are required to submit a Notice of Intent (NOI) that describes their project to the District Ranger. Within 15 days of receipt of the NOI, the operator will be notified whether a plan of operation is required before operations can begin. A plan of operation is required where a significant disturbance to surface resources is likely, and a reclamation plan and bond will need to be included.

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[121] *See* 43 C.F.R. §§ 3809.411 (explaining what action BLM will take upon receiving a plan of operations), 3809.11 (explaining which types of actions require submission of a plan of operations); *see also* Bureau of Land Mgmt., H-3809-1, Surface Management Handbook 4-36, § 4.4.1.3.6 (2012) (explaining that BLM must solicit public comment on Plans of Operations and may not issue a decision on a Plan before considering all timely submitted public comments).
[122] *See* 40 C.F.R. § 1507.3(f)(4).
[123] *See* 36 C.F.R. Part 228.

The USFS only reviews NOIs to determine if a significant disturbance would occur and does not conduct any NEPA analysis or consultation under the NHPA. If a plan of operations is not required by the USFS and more information is not necessary, then the operations may commence after the 15-day period. There is therefore often only minimal, if any, environmental review, public engagement, or Tribal consultation on an NOI. Unlike BLM's requirements, however, neither a reclamation plan nor a bond is required for notice-level operations.

Mineral operations that will involve significant surface disturbance require the submission of a plan of operation. "Significant surface disturbance" is not defined by statute or regulations, but in Forest Service Manual (FSM) 2810 significant surface disturbance depends on site-specific conditions. When a plan of operation is required, the USFS first reviews the plan for completeness. The USFS does not, by policy, conduct pre-application meetings or meet with applicants prior to the submission of the complete plan of operations. After the USFS accepts a proposed plan of operations as complete, the USFS begins the NEPA process and the project is noted on the Schedule of Proposed Actions (SOPA) (https://www.fs.usda.gov/sopa/). The SOPA site is used by the USFS to inform the public of proposed actions the agency is currently evaluating. The SOPA website contains a simplified searchable map function to ensure the public can access current project-related NEPA information and timelines. Next, the agency follows 36 C.F.R. 228 Subpart A regulations and FSM 2810 direction to review, potentially approve, and administer a proposed operation. As with the BLM process, the public is only informed and given an opportunity to comment after a complete plan of operation is received and the NEPA process has begun.

C. Methods for removing land from operation of the mining law

Not all Federal lands are available for mineral development, and there are several processes that may be used to withdraw Federal lands from location and entry under the 1872 Mining Law. The two most common ways to withdraw lands from mineral location and entry ("withdrawals"), subject to valid existing rights, are either through a congressional act or through a public land order signed by the Secretary of the Interior.[124] A third method, less commonly used, is by Presidential Proclamation pursuant to the Antiquities Act.[125]

Withdrawals implemented through congressional acts are permanent, unless specified otherwise, and can affect large landscapes. Examples of these acts include the Wilderness Act of 1964, which provided a nearly 20-year period where new claims and patents were allowed in national forest wilderness

[124] *See generally, e.g.*, Public Land Order No. 7875 for Emigrant Crevice Mineral Withdrawal; Montana, 83 Fed. Reg. 51701 (Oct. 12, 2018) (withdrawing approximately 30,370 acres of National Forest System lands from location and entry under the United States mining laws).
[125] 54 U.S.C. §§ 320301-03.

areas before those lands were withdrawn from future mineral availability,[126] and the Wild and Scenic Rivers Act of 1968, which withdrew river sections that have "wild" designations.[127]

The administrative withdrawal process allows for applications to the Secretary of the Interior, through the BLM, for Secretarial withdrawals of Federal lands, as authorized by FLPMA. The applicant agency and the BLM work together to prepare environmental analyses and other resource reviews to inform the Secretary of the Interior regarding the withdrawal request. The Secretary of the Interior reviews the application and supporting materials and determines whether to issue a public land order.[128]

Applications for administrative withdrawals are typically submitted for areas that require protection beyond the agency's surface management regulations, or areas needed for administrative sites, the location of facilities, or other proprietary purposes. A mineral potential report is either included with the application or prepared after the application is submitted, which ranks the occurrence and certainty of mineral deposits in the withdrawal application area as low, medium, or high, thereby informing the deciding official of what may be foregone if the withdrawal is implemented. The Secretary of the Interior's withdrawal authority set forth in section 204 of FLPMA includes a requirement to publish notice of a withdrawal proposal or application in the *Federal Register*, which initiates a 90-day public comment period and offers the opportunity for members of the public to request a meeting on the proposal or application. Administrative withdrawals of 5,000 acres or more under FLPMA are limited to 20 years, although they can be extended by the Secretary if warranted by the purpose for which they were first made.

VI. Mine Permitting

While the Mining Law's process for staking a claim to locatable mineral resources has remained largely unchanged over the past century and a half, the process of permitting mines has changed considerably during that time, particularly with the enactment of Federal and State environmental statutes over the past fifty-plus years.[129] NEPA is the bedrock environmental statute for the United States, requiring Federal decision makers to evaluate and consider the potential environmental impacts of proposed agency actions and inform the public of those impacts prior to making a decision.[130] The NEPA process is set out in implementing regulations,[131] and Federal agencies also develop their own agency NEPA

[126] 16 U.S.C. § 1133(d)(3).
[127] 16 U.S.C. § 1280(a)(iii).
[128] 43 C.F.R. Subpart 2310.
[129] *See* NFMA, 16 U.S.C. § 1600 et seq.; FLPMA, 43 U.S.C. § 1701 et seq.; NEPA, 42 U.S.C. § 4321 et seq.
[130] *See* 42 U.S.C. § 4332(2)(C).
[131] *See* 40 C.F.R. § 1500.1 et seq.

procedures.[132] NEPA is applied to mining and exploration activities requiring a plan of operations, although, as noted above, NEPA procedures are not triggered for casual use or notice-level operations because these actions do not involve administrative discretion. In addition to complying with NEPA, proposed mining and exploration operations must also obtain a number of permits under other Federal and State laws. The path to securing the multiple permits and authorizations needed to begin mineral development can be arduous and time-consuming, particularly if minerals occur in sensitive areas.

A. Environmental Review and Permitting Process

NEPA directs Federal agencies to evaluate the potential environmental impacts of "major Federal actions significantly affecting the quality of the human environment,"[133] which may include Federal land management planning and mine permitting (but not the location of claims because claim staking does not involve discretionary Federal action). NEPA's requirements may be satisfied through application of a categorical exclusion or completion of an EA or an EIS, depending on the size, scope, and potential impact of the proposal. A decision is made only after fulfilling NEPA compliance. Following completion of an EA, the agency will conclude either that a more comprehensive EIS is required or that a Finding of No Significant Impact is appropriate. Where an agency completes an EIS, it will prepare a Record of Decision (ROD) approving one of the alternatives considered. The selected alternative may be the No Action Alternative, effectively rejecting the proposed action. Administrative appeals or objections to the decision, consistent with the applicable agency's administrative review procedures, may follow. Litigation may also occur at this point, as a NEPA decision is a final agency action.

The BLM and USFS mine approval process starts with the applicant's submission of a proposed mine plan of operations. The proposed mine plan is reviewed for completeness, and the agency may return incomplete applications to the proponent. According to the GAO, incomplete and vague operating plan submissions and the time required to respond to requests for additional information represent the most common cause of delay when reviewing proposed operating plans.[134] The NEPA process begins following the submission of a complete application. Notably, GAO's third-most-cited cause of operating plan delays is operator-initiated changes to key parts of a proposed mine plan.[135]

Compliance with laws applicable to discretionary federal agency decision-making, including the NHPA and ESA, among others, is conducted concurrently with and as part of the NEPA analysis that supports

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[132] *See, e.g.*, Bureau of Land Mgmt., H-1790-1, National Environment Policy Act Handbook, 2008; U.S. Forest Serv., Forest Service Manual 1900 – Planning, Chapter 1950 – Environmental Policy and Procedures, 2012.
[133] 42 U.S.C. § 4332(2)(C).
[134] *Supra*., note 5.
[135] *Id.*

mining-related BLM and USFS decisions. Federal agencies' statutory obligations under NEPA and NHPA are independent, but integrating the processes can create efficiencies, promote transparency and accountability, and support a broad discussion of effects to the human environment. Section 106 review must be completed prior to the issuance of a federal decision so that a broad range of alternatives may be considered during the planning process. Because the information gathering and consultation done in the Section 106 review should inform the NEPA review and vice versa, the timing of both reviews should be coordinated.[136] Additional mining-related decisions or permits may be required by other Federal or State agencies in accordance with the CAA, CWA, ESA, SDWA, or other statutes as necessary. Common permits include discharger permits under section 402 of the CWA (NPDES permits), and permits to place fill material in wetlands or waters of the United States under section 404 of the CWA. These permits may be standardized nationwide (general) permits or more involved individual permits for a particular project, depending on the size and intensity of the impacts involved. Consultation under section 7 of the ESA will also be required if the proposed operation is likely to impact a listed species or its habitat. The exact permits and consultations required for a mining project are dependent on a number of factors, including location, type of operation, quantity and type of wastes, water, and air emissions generated, and how the wastes and waters are managed or disposed of.

Many of the analytical requirements of these permitting processes overlap. For example, BLM or USFS will evaluate surface uses and impacts and coordinate with other agencies responsible for environmental reviews or decisions during the NEPA process, depending on which agency has jurisdiction or expertise regarding which resource. The USACE is responsible for CWA section 404 permitting in non-delegated states, as well as Rivers and Harbors Act of 1899 sections 10 and 14 permitting. The USACE may prepare its own NEPA documents or adopt documents prepared by or in cooperation with the BLM or USFS.[137] Therefore, efficient federal permitting processes require coordination with the USACE to ensure that EISs are sufficient to support decisions.

Similarly, to ensure compliance with the ESA and other wildlife-related statutes when engaged in discretionary decision-making, the BLM and USFS must coordinate with the FWS and the National Marine Fisheries Service (NMFS), which will review potential impacts on Federally protected wildlife, fish, habitat, and plants. Impacts on species and habitats are often evaluated in coordination not only with agencies like the BLM and the USFS, but also with Tribal and State wildlife management agencies that maintain their own sensitive species lists. These agencies must coordinate and collaborate, even

[136] Council on Environmental Quality and Advisory Council on Historic Preservation, "NEPA and NHPA: A Handbook for Integrating NEPA and 106", 2013. https://www.achp.gov/digital-library-section-106-landing/nepa-and-nhpa-handbook-integrating-nepa-and-section-106.
[137] 40 C.F.R. §§ 1500.4(p), and 1500.5(j).

if their management priorities diverge.[138] Critical agency staff may be unavailable to assist with environmental analyses or permit application review, for example, if they are temporarily reassigned in response to a wildfire or another urgent issue. Limited or ineffective interagency coordination during plan of operation review was identified by the GAO as a potential source of delay, though it occurs roughly half as often as problems with permit applications and is likely to produce less significant delays.[139] In addition, insufficient resources, especially for agencies implementing ESA, can cause delays when there is only one biologist or one resource specialist who can complete the project.

The Nuclear Regulatory Commission may also be involved in mine projects that have on-site processing that requires a source material license, unless a project is located in a State where the BLM State Office has an agreement with the Commission for the permitting of uranium mines.

The EPA is required by statute to review all draft EISs.[140] In addition, EPA may be asked to review permit applications under the SDWA, CWA NPDES program, and CAA where a project would occur in non-delegated states or on Tribal lands. EPA may also conduct oversight and provide technical assistance in delegated states, as needed. EPA frequently reviews CWA 404 permit applications, and the USACE may coordinate with EPA during the CWA 404 permitting process.

In addition, States generally regulate—either with sole jurisdiction or along with the Federal government—mine plans, waste management, groundwater use and impacts, reclamation, surface water use, fish habitat, and tailings dam safety. Most States have primacy over CAA permitting and State NPDES permitting. EPA collaborates with States and Federal agencies to conduct NEPA and permitting analyses (within EPA authorities) concurrently that help in decision-making. States are also responsible for issuing water quality certifications under section 401 of the CWA before permits under section 404 of the CWA can be issued. Several States are also authorized to issue CWA section 404 permits. Most mining wastes are excluded from the definition of hazardous waste, and therefore are exempt from RCRA Subtitle C regulations. EPA has not developed specific requirements for mining waste rock and most mine tailings under RCRA Subtitle D. States have authority under Subtitle D to implement solid waste programs for mining operations.

Some states have State Environmental Policy Act regulations that require a State environmental impact review before decisions are made, in which case a joint Federal and State EIS may be developed.

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[138] The National Park Service, for example, is directed "to conserve the scenery, natural and historic objects, and wild life in the System units and to provide for the enjoyment of the scenery, natural and historic objects, and wild life in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." 54 U.S.C. § 100101(a). The BLM, in contrast, operates under a multiple use and sustained yield mandate that includes (but is not limited to) development of range, timber, and mineral resources. *See* 43 U.S.C. §§ 1732(a) and 1702(c).

[139] *Supra*., note 5, p. 22.

[140] 42 U.S.C. § 7609(a).

Other States do not require environmental policy act reviews before issuing permits. Where NEPA is required, it is imperative that the NEPA lead agencies coordinate with State agencies during the mine review and NEPA process.

Only after the permitting and consultation process concludes may mine construction and operations begin, and mining companies are subject to ongoing environmental and monitoring requirements. One commenter wrote, "Streamlining the process through greater coordination between Federal and State reviews can deliver timely decisions without sacrificing public engagement or environmental analyses."[141] Substantial expansions of or changes to a mining operation, as commonly occurs during the mine life, could trigger additional NEPA review (e.g., a supplemental EIS or revised EA) and supplemental permitting analyses.

B. Application of BLM's and USFS's different standards

FLPMA does not define UUD but gives the Secretary of the Interior broad latitude in determining what constitutes and how to prevent UUD. BLM's regulations define "unnecessary or undue degradation" to mean conditions, activities, or practices that: fail to comply with the performance standards of 43 C.F.R. § 3809.420, the terms and conditions in plans of operation or as described in a notice, or any other Federal and State laws related to environmental protection and protection of cultural resources; that are not "reasonably incident" to prospecting, mining, or processing; or that fail to meet a stated level of protection or reclamation required by specific laws in certain areas designated for conservation.[142] The regulations set out both general and specific performance standards with which operators are required to comply.[143]

The USFS's regulations requiring submission of a plan of operations are triggered by a "significant surface disturbance," and like UUD, this term is not defined by statute. Instead, USFS's implementing policy manual, FSM 2810, indicates that whether a significant surface disturbance occurs is determined based on site-specific conditions. This broad direction can result in inconsistent processing.[144] A report published by the National Research Council highlighted the variability of time to process exploration proposals on BLM and USFS lands and recommended amending USFS regulations to allow notice-level exploration activities similar to the approach on BLM lands.[145]

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[141] Greater Fairbanks Chamber of Commerce Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.
[142] 43 C.F.R. § 3809.5.
[143] 43 C.F.R. § 3809.420.
[144] The term "significant" under the USFS mineral regulations does not have the same meaning as "significant" as defined under the NEPA regulations.
[145] *Supra*., note 55, p. 97.

Industry commenters generally praised BLM's standards as being clear, providing for consistent application for planning purposes, and explaining when a notice or a plan of operation is required. However, industry groups also noted problems with differing practices and inconsistent application of NEPA across BLM state, district, and field offices. Inconsistent application of NEPA—such as differing determinations regarding the level of detail needed in a mine plan or reclamation plan, the level of detail needed for alternatives, the amount and type of baseline data required for the mine plan and alternatives, waste characterization requirements, and environmental modeling—leads to confusion by industry that can delay the environmental analysis and/or permitting process. Some industry comments suggested that the USFS should update its regulations to the extent allowed under its authorities to make those regulations more consistent with BLM's standards and to provide for similar consistent implementation.

Many NGOs, Tribes, and Tribal organizations believe that the current Interior regulations need to be updated. As the group of 40 Tribal and Indigenous Organization and Conservation Group Petitioners stated in their Rulemaking Petition, "BLM's existing hardrock mining rules perpetuate inequities while failing to adequately protect tribal resources and other natural resources. Modernizing BLM's hardrock mining rules would help correct these unacceptable risks and burdens that the current rules all too often permit."[146] Among other specific concerns, the petitioners assert that Interior's regulations implementing and defining UUD are insufficient and must be strengthened to adequately protect public lands, consistent with FLPMA.[147] Many of these commenters advocate for eliminating the BLM's notice-level activities, contending that these activities can harm sensitive resources, bias future decisions, and disenfranchise interested parties who do not receive notice of pending mineral exploration or development.

C. Data on Environmental Review and Permitting Timeframes

Proposals to increase permitting speed are often characterized, rightly or wrongly, as efforts to shortcut environmental reviews or public input. Determining how to improve the environmental review and permitting process requires an accurate understanding of permitting timelines and the multiple interrelated factors that can contribute to delays. Unfortunately, agencies do not always collect the information needed to identify points in the permitting process where delays occur or to identify the causes of those delays. Agencies also do not always collect or maintain information in ways that allow easy comparison across programs, complicating efforts to identify best practices and expand their application. Data may also not allow agencies to determine whether changes produce the desired effect.

[146] *Supra.*, note 14, p. 6.
[147] *Id.* at app. iii.

The most recent and comprehensive mining-specific data the IWG is aware of comes from the 2016 GAO report, "*Hardrock Mining: BLM and Forest Service Have Taken Some Actions to Expedite the Mine Plan Review Process but Could Do More*." The GAO's review considered all mine plan proposals and expansions reviewed by the USFS and BLM during a 4-year period, not distinguishing between the level of NEPA review completed (whether EA or EIS), and found that of the 68 mine permits approved by the BLM and USFS between 2010 and 2014, the average processing time was approximately 2 years, and more than half were processed in less than 18 months.[148] GAO excluded exploration plans and plan modifications, analyzing only new mines and mine expansion proposals.

The IWG also examined the EPA's NEPA records to determine the time typically taken to complete an EIS for new hardrock mining projects (not including mine expansions) reviewed by BLM or the USFS. Since 2000, the USFS and BLM have brought 33 new mine project EISs to a ROD. The time from submittal of a mine plan of operation to ROD and to resolve any subsequent litigation ranged from 1.5–15 years, and from publication of a NEPA NOI to ROD and to resolve any subsequent litigation ranged from 1–15 years. The data indicate that 42% of the EISs were completed in 4 years or less[149] and 55% of the EISs were completed in no more than 5 years. A detailed review of BLM data by the IWG for mining projects approved between Fiscal Year (FY) 2013 and April, 2023, found the average EIS duration to be 3.1 years, with a median of 3 years. Including the entire process—from the first appearance of the example in BLM's records to the authorization of ground disturbing activities, which will include time needed to initiate NEPA and for the operator to provide the required financial assurance, among other steps—the average time was 4.6 years, and the median time was 4.2 years.

The difference between figures may be attributable to GAO's review of a shorter period (4 years vs. 10 or 20 years), GAO's inclusion of projects analyzed under an EA, different ways of accounting for litigation-related delays, and different end dates (ROD issuance vs authorization of ground disturbance). Of the 33 EISs, there were 6 EISs that took more than 10 years to complete to a final ROD. Two of these were due to significant changes in the mine plans that warranted supplemental EISs. Three of these were due to litigation that required supplemental EISs. And one of these was due to both litigation and significant changes in the mine plan. Legal challenges to the adequacy of an EIS, however, occur only after the issuance of a ROD.[150] Including litigation-driven delays in the time required to complete a ROD may therefore incorrectly imply a delayed NEPA process. These outliers may be better understood not as the time required to complete the NEPA process but instead as the time to complete the NEPA process, resolve any subsequent litigation, and then revise NEPA documents as ordered by a court.

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[148] *Supra*., note 5, p. 13.

[149] Measured between time NOI and ROD published.

[150] There may be, in rare instances, pre-decisional legal challenges based on allegations of procedural violations of NEPA.

The IWG also looked at the number of mine-related EAs prepared by the USFS and BLM. For a 10-year period from 2013–2023, the USFS prepared 129 mining EAs, with an average time to completion of 16 months. During a similar period, the BLM prepared 121 mining EAs with an average completion time of 14 months and a median completion time of 9.5 months. Both the BLM and the USFS typically prepare EAs for mine exploration, expansions, or plan extensions, or for new mines for smaller projects.

Under both the IWG/EPA and GAO analyses, the environmental review times for mine permits by BLM and USFS were found to fall close to the average EIS completion time of 4.5 years (from NOI to ROD) and median EIS completion time of 3.5 years for all projects across Federal government agencies.[151] Both the GAO and IWG analyses focused on the mine plan review and approval and EIS processes and did not include timeframes for other Federal or State permits, most of which would be issued after NEPA is completed to support the BLM or USFS decision.

While much can be improved about the U.S. mine permitting process, it should be noted that the total "gestation period"—the length of time between the initiation of exploration for a mineral and the start of commercial production—appears to be roughly 16 years in the U.S., which is fairly consistent with the worldwide average.[152] The International Energy Agency found that the international range of the time from completion of a feasibility study to the start of production took between roughly 4 and 18 years for nickel mines and between roughly 6 and 19 years for lithium mines.[153] Outside of litigation, the U.S. total process time has not been found to be any longer than any other nation's total process time.[154] According to GAO's analysis and EPA's data, the time to complete NEPA and ensure decision-making is informed by environmental impacts is a comparatively small portion of the total mine gestation period. As mentioned earlier, the NEPA process is just one part of what is usually a multi-step process, with permits required not just from the land and mineral managers (BLM and USFS) but also multiple other Federal, State, and local entities.

A large number of industry commenters remarked that mining projects take "7–10 years" to permit in the U.S. but only "2–3 years" in other jurisdictions, such as Canada or Australia. Although widely repeated and buttressed by a number of individual examples of mines that took exceptionally long to

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[151] White House Council on Environmental Quality, "Environmental Impact Statement Timelines (2010-2018)," June 2020. https://ceq.doe.gov/docs/nepa-practice/CEQ_EIS_Timeline_Report_2020-6-12.pdf.

[152] James Otto, "Security of Mineral Tenure: Time-limits," *in International and Comparative Mineral Law and Policy*, Elizabeth Bastida et al., eds., 2005, pp. 353-374. https://eop.on.worldcat.org/oclc/57002390.

[153] "Global EV Outlook 2022." International Energy Agency, May 2022. https://www.iea.org/reports/global-ev-outlook-2022.

[154] U.S. Geological Survey, "The Principal Rare Earth Elements Deposits of the United States – A Summary of Domestic Deposits and a Global Perspective,"2010. http://pubs.usgs.gov/sir/2010/5220/.

permit, no data was provided to support these numbers. The origin of the referenced timeframes appears to be a 2015 report produced for the NMA by SNL Metals and Mining entitled "*Permitting, Economic Value and Mining in the United States*," which stated:

> As a consequence of the country's inefficient permitting system, it takes on average seven to 10 years to secure the permits needed to commence operations in the U.S. To put that into perspective, in Canada and Australia, countries with similarly stringent environmental regulations, the average permitting period is two years.[155]

The SNL Metals and Mining report, however, does not provide the source of its data, and states, "This report is based on information and data provided to SNL Metals & Mining by third parties…SNL Metals & Mining has not independently verified such information and has assumed that information supplied and representations made by respondents are substantially accurate."[156] Also, the Mining Association of Canada reports that the planning and approval process for new mines can take 10–15 years in Canada.[157] The 2022 Fraser Institute Annual Survey of Mining Companies also found that Alaska and Nevada—two states with large percentages of public land—had a higher percentage of respondents than Canada or Australia reporting permitting times of six months or less, and also had the smallest percentage of respondents who said permitting time had lengthened over the past 10 years.[158]

NGOs commented that the NEPA process can, and often is, completed quickly and efficiently, that larger, more complex projects take and deserve more time to review, and that the NEPA process works as designed in identifying potential issues that might otherwise have been overlooked, allowing for reassessment of options and alternatives. A comment letter from a western law school stated, "…the NEPA review process is indeed working as designed, identifying potential issues that would have otherwise escaped consideration and driving a reassessment of options and impacts before an irretrievable commitment of resources occurs. …."[159]

Further, it is often unclear where to place responsibility for delays that occur during the environmental review and permitting processes. The most common cause of delay identified by the GAO involved

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[155] SNL Metals & Mining, "Permitting, Economic Value and Mining in the United States," June 2015. http://mineralsmakelife.org/assets/images/content/resources/SNL_Permitting_Delay_Report-Online.pdf

[156] *Id.*

[157] Mining Association of Canada, "Project Permitting in Canada and the Mining Industry," November 16, 2022. https://mining.ca/resources/reports/project-permitting-in-canada-and-the-mining-industry/.

[158] J. Mejía and E. Aliakbari, Fraser Institute Annual Survey of Mining Companies 2022, 2023. https://www.fraserinstitute.org/studies/annual-survey-of-mining-companies-2022.

[159] Wallace Stegner Center for Land, Resources, & the Environment, at University of Utah's S.J. Quinney College of Law Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

"mine plans of operation [that] were incomplete or vague, which required a request for additional information before the review process could continue."[160] These concerns were also noted by the Department of Commerce in a recent study, which indicated that:

> mining permit applications often lack sufficient quality or key information needed for regulators to make a decision on an application. Insufficient information in the mining application can significantly delay the permitting process as it may require multiple application iterations until the application is of sufficient quality to allow the permitting agencies to make a decision.[161]

The second-most-cited challenge reported by the GAO is the lack of qualified staff and resources to review environmental and permitting documents.[162] This is not unique to mining. Agencies often lack the resources to review materials, process permit applications, and conduct consultations as quickly and efficiently as applicants would like. There are technical challenges associated with making environmental predictions in EISs for mining operations, which can lengthen the time needed to prepare EISs. Environmental modeling and impact predictions require adequate data and take expertise and time to conduct and review, particularly in areas with complex geology, wide seasonal variations, or areas where there are sensitive species or other important resources.

The third most common cause of delay identified by GAO is when changes are made to key portions of a mine plan after the initial submission and those changes necessitate new or revised analysis.[163] This has resulted in delays for projects such as the Kensington Mine and the Idaho Cobalt Project Mine, among others. Site complexity, which, as noted in above, can result in an unusually high number of environmental issues that are difficult to mitigate, ranked fourth, followed by low quality of work produced by contractors hired to prepare required NEPA documents.

Many of these challenges are largely outside of agency control, although the GAO did not assess the reasons for some of the challenges. For example, incomplete, vague, or changing mine plans could be a result of applicant inexperience. Poor application materials could also be a result of a lack of specific written regulations, guidance, or agency direction regarding what constitutes a complete mine plan or the amount and type of baseline data needed to effectively analyze the environmental effects of the proposal. In some situations, NEPA lead and cooperating agencies negotiate baseline data and NEPA analysis needs, which can take time to resolve. It is clear that better tracking of permitting schedules,

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[160] *Supra*., note 5.

[161] U.S. Department of Commerce, "A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals," June 2019. https://www.commerce.gov/data-and-reports/reports/2019/06/federal-strategy-ensure-secure-and-reliable-supplies-critical-minerals

[162] *Supra*., note 5.

[163] *Id.*

along with transparency and accountability for schedule changes, is needed so that there is a common understanding of the causes of delay and an ability to target these areas for improvement.

D. Best Practices

Numerous experts have offered their views on how to coordinate and streamline the environmental permitting process, including identifying certain best practices. Such practices include the development of programmatic EISs, conservation plans under the ESA, and programmatic agreements for the NHPA. This paper does not evaluate or repeat the recommendations and practices addressed elsewhere that are generally applicable to those statutes. Significant policy instructions and best practice manuals already exist and only need to be effectively implemented.[164] However, effective implementation requires that compliance agencies be provided with sufficient financial and human resources.

While many general permitting best practices are applicable to mining, the IWG notes that mine permitting has unique characteristics that require specific solutions. As the industry correctly points out, mineral deposits "are where they are," which curtails the ability of an applicant to adjust the location of proposed operations. Fossil fuel development is similar in a certain respect: the resources are where they are. However, fossil fuels are developed on Federal lands via leasing, which allows the public the opportunity to engage in the consideration of potential impacts from fossil fuel development through the review of specific parcels being proposed for leasing, allowing site-specific concerns to be identified before individual development proposals are put forward. This same opportunity does not currently exist for most hardrock mineral development, where claims are located at the initiative of the claimant, and the public may not be aware the location is being considered for development until the NEPA process on the mining proposal begins. Another distinguishing factor is the scale and long-term impact of many mining projects, which can be much greater than for most other infrastructure projects. For example, even under the most stringent standards, there will be cases where backfilling a mining pit is infeasible or impossible, likely leaving a pit lake as a perpetual feature of the landscape. As a result, improving mine permitting requires unique solutions, preferably one that have already been demonstrated to be effective in the U.S.

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[164] See Federal Permitting Improvement Steering Council, "FY 2022 Recommended Best Practices Report," Oct. 2022. https://www.permits.performance.gov/tools/fy-2018-recommended-best-practices-report; U.S. Department of Transportation, "D2015 Red Book: Synchronizing Environmental Reviews for Transportation and other Infrastructure Projects," Sept. 2015. https://www.transportation.gov/sites/dot.gov/files/docs/mission/transportation-policy/permittingcenter/286606/redbook2015.pdf; White House Council on Environmental Quality, "Improving the Process for Preparing Efficient and Timely Environmental Reviews Under the National Environmental Policy Act." https://ceq.doe.gov/docs/ceq-regulations-and-guidance/Improving_NEPA_Efficiencies_06Mar2012.pdf.

One promising set of procedures has been developed by BLM's Nevada state and district offices, which have the heaviest mining workloads of any BLM offices in the nation. The protocol, titled "Statewide Project Management Process for EISs and EAs," allows for consistency and coordination between the project proponent and applicable Federal and State agencies and Tribes, and was originally developed for mining projects but is applicable to other Federal actions as well. The most recent version of the protocol was issued as part of policy guidance by the BLM Nevada state office,[165] and establishes an 8-step process for coordinated NEPA analysis:

- Steps 1–3: Ensure that there is effective communication within BLM and with the applicant for planning purposes and resource allocation.
- Step 4: Baseline kick-off meeting with the proponent and affected Federal, State, local, and Tribal government representatives. At this meeting a standardized form is used to document the identified baseline data needed for the NEPA process. As baseline reports are received, evaluated, and approved, those reports are shared with relevant local and State agencies.
- Steps 5 and 6: Preparation and submission of the plan of operations. BLM strongly encourages applicants to ensure that all baseline studies are complete before submission.
- Step 7: Following submission of a complete application, BLM determines the level of NEPA analysis that will be required.
- Step 8: Pre-NEPA kick-off meeting with BLM, the applicant, NEPA contractor, local, State and Federal agencies, and Tribal government representatives.

BLM Nevada has an MOU with the EPA Region 9 to coordinate the evaluation and development of EISs for mining operations in Nevada, as well as an MOU with the USFS and State of Nevada to facilitate coordination and the establishment of reclamation cost estimates. The first MOU establishes the EPA as a cooperating agency by default for all mining EISs, setting out the minimal points of contact required for sharing of information and documents between BLM and the EPA, as well as the timeframe for review of documents by EPA. While this unique MOU between EPA and BLM-Nevada has significantly enhanced coordination between the BLM and EPA, implementation could still be improved. EPA reported that they are not consistently invited to baseline kick-off meetings, or invitations are provided on short notice, and that they are not consistently given the opportunity to review and provide input on draft baseline data that is shared with the State and local agencies beyond those documents set out in the MOU. Lack of ability to be engaged early in the review of baseline

[165] Bureau of Land Management Nevada State Office, Instruction Memorandum No. NV-2023-003, Change 1, "Updated Process for Department of the Interior (DOI) and Bureau of Land Management (BLM) Directorate Briefings and Reviews of National Environmental Policy Act (NEPA) Documents and BLM Nevada Protocol for Streamlined Project Management for Environmental Impact Statements and Environmental Assessments." See Attachment 2 at https://www.blm.gov/policy/nv-im-2023-003-change-1.

documents can result in EPA first identifying issues during its required draft EIS review instead of at earlier stages in the process.

Discussions with agency personnel and comments from industry groups and individual companies indicate that these MOUs, coupled with the Nevada statewide project management process, have significantly improved the permitting process on public lands in Nevada, providing increased certainty and consistency and allowing EISs to be completed in an expedited manner. Outside of Nevada, BLM and the USFS often develop project-specific MOUs or cooperating agency plans that establish cooperating agency roles and coordination during the NEPA process or address cooperative efforts regarding reclamation cost estimates and other financial assurance details.

There have been other recent attempts to speed the permitting process nationwide without any loss of environmental protection or opportunity for public input, such as section 41 of the Fixing America's Surface Transportation Act,[166] better known as FAST-41. FAST-41 created a new governance structure, set of procedures, and funding authorities designed to improve the timeliness, predictability, and transparency of the Federal environmental review and authorization process for "covered" infrastructure projects.[167] According to the Federal Permitting Improvement Steering Council, which oversees the FAST-41 process:

> FAST-41 coverage entitles project sponsors to a comprehensive, integrated Federal permitting timetable that is publicly posted on the Permitting Dashboard and which contains all Federal environmental reviews and authorizations needed to begin construction of the project. FAST-41 requires that agencies collaboratively establish and maintain these permitting timetables and consult with the project sponsor on any proposed permitting timetable changes.[168]

Mining projects are eligible for inclusion on the Permitting Dashboard, but only two projects are currently listed on the dashboard: the Stibnite Gold Project in Idaho, which is not a covered project under FAST-41, and the South32 Hermosa Critical Minerals project, which is a covered project.[169] Several mining companies endorsed the underlying principles of the FAST-41 process, particularly interagency coordination and timelines, in comments to the IWG.

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[166] Pub. L. No. 114-94 (2015).

[167] Covered projects are infrastructure projects requiring federal authorization and NEPA review that is likely to require a total investment of more than $200 million; or which in the opinion of the Federal Permitting Improvement Steering Committee would likely "benefit from enhanced oversight and coordination. 42 U.S.C. § 4370m(6)(A).

[168] Federal Permitting Improvement Steering Council, "The Federal Permitting Improvement Steering Council, Sept., 2022. https://www.permits.performance.gov/sites/permits.dot.gov/files/2022-09/FPISC_090922.pdf.

[169] Federal Permitting Improvement Steering Council, "Permitting Council Announces First-Ever Critical Minerals Mining Project to Gain FAST-41 Coverage," May 8, 2023. https://www.permits.performance.gov/fpisc-content/permitting-council-announces-first-ever-critical-minerals-mining-project-gain-fast-41.

Industry commenters also voiced frustration over the time required for DOI to publish *Federal Register* notices related to EISs associated with the analysis of a proposed plan of operations. A project undergoing review in an EIS begins its formal NEPA process with the publication in the *Federal Register* of a NOI to prepare an EIS. A Notice of Availability for every draft EIS must be published by EPA in the *Federal Register*, initiating a comment process on the draft environmental analysis. BLM chooses to publish its own Notices of Availability for the draft and final EISs in addition to the notices published by EPA. According to industry comments responding to the IWG's Request for Information, the time required to approve *Federal Register* notices for BLM EISs related to mine plan proposals has increased significantly over the last two decades and now can take up to 6–9 months before each notice is published.

The Energy Act of 2020 addressed this concern, requiring the Secretaries of Agriculture and the Interior to ensure that *Federal Register* notices "associated with the issuance of a critical mineral exploration or mine permit shall be delegated to the organizational level within the agency responsible for issuing the critical mineral exploration or mine permit," and "published in final form in the *Federal Register* no later than 45 days after the date of initial preparation of the notice."[170] A review of DOI and BLM policies and practices noted that DOI has established a Departmental clearance process for all EISs that includes steps to reduce the time necessary to review *Federal Register* notices, further streamlining the review process.[171] Lastly, a review of the process found that work on plans of operations does not come to a halt during the *Federal Register* review process.

One best practice in other permitting regimes is the ability to take operator compliance history into account during permitting, and to "debar" operators that have violated environmental laws or regulations. One example is the Applicant Violator System under the Surface Mining Control and Reclamation Act. Some commenters proposed that the hardrock mine permitting process require that applicants disclose any unresolved violations and that applicants should be barred from receiving a permit unless corrective action is already being undertaken to address any violations.

Industry opposes the establishment and application of such a system to mining permits, stating that it is overreach and would bar operators for even minor violations by the company itself or any of its affiliates. Industry also asserts that comprehensive audits to ensure compliance prior to submitting plans of operations would cause a substantial increase in costs and delays.

[170] 30 U.S.C. § 1606(f).
[171] U.S. Department of the Interior, "Department Clearance Process for Environmental Impact Statements," June 2022. https://doi.gov/sites/doi.gov/files/erm10-11-eis-review-process-june28-2022.pdf.

VII. Public Engagement

A. Current Process

The only practical opportunities for public comment on BLM and USFS mine plans of operation are during the NEPA process. Review of a notice is not a major federal action requiring compliance with NEPA because the BLM does not take a discretionary action based on the notice.[172] Both the BLM and the USFS usually only provide opportunities for public comment at the prescribed NEPA process points, with no requirement for public engagement prior to or outside of designated portions of the NEPA process. For EISs, there are several legally required opportunities for public comment, including scoping periods (initial project development) and draft EIS comment periods. Forest Service regulations require scoping on all USFS proposed actions, including those analyzed in a categorical exclusion or EA, and EAs applicable to administrative review have to offer some type of public comment period, either through scoping or another instance where there is an opportunity to submit written comments.[173] The BLM does not consistently publish EAs for public comment or review, but many field offices offer the public a chance to comment on EAs.

Public comment periods provide an opportunity for agencies, the applicant, and the public to discuss the proposed project, alternatives to the project, potential impacts and mitigation, and the process for mining approval. Public comment periods can involve a variety of tools for conveying information about the project: open houses, online meetings, one-on-one meetings, newspaper publications, social media, Federal Register notices, and agency websites. The form of public comment can be structured in multiple ways, including open discussion, solicitation of written comments, listening sessions, and more. The agency's Responsible Official (BLM) or Authorized Officer (USFS) has the discretion to implement whichever form(s) are most appropriate for the proposed project based on public interest and potential environmental impacts. It should also be noted that Tribal consultation, discussed in more detail in a separate chapter, is typically conducted concurrently with BLM's and USFS's mine review process and can occur before, during, and after public comment periods.

Once the BLM or the USFS receive a proposed plan of operations, the plan is reviewed for completeness according to agency regulations to ensure that it contains all the information necessary to conduct an environmental analysis under NEPA.[174] During this completeness review period, the agencies may reach out to other agencies and stakeholders, but the reviewing agency generally exercises caution when distributing a draft version of a proposed plan. Public engagement may be required and conducted by other Federal, State, and local agencies. This engagement may focus on a

[172] *Sierra Club v. Penfold*, 857 F.2d 1307 (9th Cir. 1988).
[173] *See* 36 C.F.R. § 220.4; and 36 C.F.R. § 218.
[174] *See* 43 C.F.R. § 3809; and 36 C.F.R. § 228.

specific aspect or component of a project proposal, such as a draft water discharge permit or draft air permit issued by a State environmental agency, a CWA Section 404 or Rivers and Harbors Act Section 10 permit application being reviewed by the USACE, or others.

These public comment periods and process are not consistent across agencies, however. Some State permit application review procedures do not require public comment periods, such as the issuance of a tailings dam approval or the establishment of financial assurance for reclamation. Public engagement and comment periods by other agencies may occur before, during, or after the BLM and USFS plan of operations review and NEPA process. In addition, public engagement focused on individual permits is less likely to foster discussion or resolution of broader issues, as the permitting agency will tend to focus predominantly on the issues and concerns under its jurisdiction. When other Federal and State agencies are cooperating agencies in the BLM and USFS NEPA processes, the land management agency may have a general awareness of other agencies' engagement and comment periods, and coordination frequently occurs to avoid overlapping comment periods and optimize engagement during the NEPA process.

Following receipt of a complete plan of operations, the BLM lists the EA or EIS on BLM's National NEPA Register to inform the public (https://eplanning.blm.gov/eplanning-ui/home). The BLM's ePlanning site has a searchable map function and has been described as more user-friendly than other publicly-available agency databases. The USFS posts project-related NEPA information on timelines on its SOPA site (https://www.fs.usda.gov/sopa/). This website contains a simplified searchable map function and is updated quarterly to ensure the public has current project-related NEPA information and timelines. As with the BLM process, the public is only informed and given an opportunity to comment after a complete plan of operation is received and the NEPA process is initiated.

Public engagement is not required but can occur during the operational stage of mining, depending on new information or changed conditions. Typically, public engagement during operations is selective based on identified stakeholders and entities with relevant technical expertise. Some examples of public engagement during the administration of the plan include the sharing and review of monitoring data or other information, assistance with potential adaptive management, and potential coordination of reclamation actions.

Public comment is not the equivalent of public engagement, however, and some commenters suggested both agencies can do more to inform and include the public about mining operations on Federal land before, during, and after the exploration and mine plan review process. A number of commenters recommended that the BLM and the USFS provide more information on their websites, including exploration and mine plan of operations themselves as well as environmental monitoring

and operator compliance data. The Petition for Rulemaking recommended that all documents submitted by operators be done so in electronic format and posted on a website.[175]

Much of the work that occurs by companies before the submission of an exploration plan or proposed mine plan of operations is not readily apparent to potentially affected communities. The amount of effort that has been expended before communities have an opportunity to engage may leave groups and individuals with the sense that they have little meaningful voice in decisions impacting them. One NGO representative described the mine permitting process as a "fait accompli." This perception can undermine trust, engender confrontation, and complicate environmental analyses. A perception that the public and outside parties cannot influence mineral development decisions through environmental analyses and the permitting process may force those parties to turn to litigation.

Public commenters noted the lack of community education about mining and engagement with local communities, especially Tribal Nations and communities with environmental justice concerns. They recommended that the BLM and the USFS improve outreach to communities potentially impacted by mining proposals by using multiple mechanisms to inform the public and ensure meaningful public participation, while educating the public on the objective benefits and harms from mining operations.

Numerous Tribes and NGOs requested that information on mines continue to be shared following the completion of the NEPA process, such as operational changes, final mine and reclamation plans, financial assurance levels, the mining operation's compliance performance, and the location and stability of tailings dams upstream from mining communities.

B. Best Practices

While many of these best practices use the term "stakeholders," and the IWG uses that term throughout this report, many communities expressed their belief that limited definitions of stakeholder are used to exclude them from participation. The IWG believes that any best practice regarding "stakeholders" should be read to include (a) communities with environmental justice concerns; (b) Justice40 and other disadvantaged communities; (c) area residents; and (d) those who rely on or use the potentially impacted resources, regardless of residence. As mentioned in Section VIII, Tribes are sovereign governments and not stakeholders, although communities of Native Americans, whether living on or off Tribal land, will often fall into one or more of these categories of stakeholders.

[175] *Supra*., note 14.

Mining industry organizations and groups such as IRMA consider community outreach and stakeholder engagement to be central and essential parts of modern mining practices. For example, the NMA commented:

> The mining industry supports extensive engagement of communities throughout the mineral development sequence – from pre-feasibility through reclamation. We recognize that relationships built upon trust, transparency and mutual benefits are fundamental for mining companies to secure social license and access to land during exploration and attain regulatory approvals throughout the mining life cycle. Furthermore, the NMA recognizes the importance of respecting the rights, cultures, customs and values of people and communities, affected by companies' activities, and of continually engaging and maintaining an open dialogue with key communities.[176]

ICMM Mining Principle #10, "Stakeholder Engagement," states that companies should "[p]roactively engage key stakeholders on sustainable development challenges and opportunities in an open and transparent manner" and recommends that companies "report annually on economic, social and environmental performance[.]"[177]

Early engagement is also recognized as providing benefits beyond communities or stakeholders. Industry has found early engagement can improve projects, reduce impacts, and identify additional ways to benefit local communities. This, in turn, can reduce the risk of litigation and associated delays. As IRMA states in their IRMA-Ready Draft Standard:

> There is widespread acknowledgement from extractive industries that efforts spent on building respectful relationships, responding to community and indigenous peoples' concerns, and minimizing project-related impacts can be beneficial to both companies and affected communities.[178]

The Australian Government, in their *Guide to Leading Practice Sustainable Development in Mining*, explains, "The conduct of an operator in the pre-development (exploration/feasibility) stage is critical

[176] NMA Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.
[177] ICMM, "Mining Principles: Performance Expectations," June 2022. https://www.icmm.com/en-gb/our-principles/mining-principles/mining-principles.
[178] Initiative for Responsible Mining Assurance, "Draft IRMA Standard for Responsible Mineral Exploration and Development," Dec. 2021. https://responsiblemining.net/wp-content/uploads/2021/12/IRMA-Ready-Draft-1.0-December2021-All-Stages.pdf.

to maximising future shareholder value. If the operator cannot establish and maintain the trust of the community and government, the potential value of a resource is unlikely to be realised."[179]

Industry also acknowledges the importance of engaging as early as possible and that proactive and meaningful communication must occur well before such engagement is required under current U.S. permitting practices. In its comments, the company Anglo Gold Ashanti wrote, "Engagement must begin at the earliest possible stage; starting at a reconnaissance stage, through to exploration and mining and finishing with the closure of the project."[180] And Nevada Gold Mines, LLC / Barrick Gold Corp. in their combined comments wrote, "In a greenfield exploration program, perhaps the best start for a dialogue is when a notice is filed, or at least at the exploration plan of operations stage."[181]

Many mining companies do conduct community outreach and stakeholder engagement early in the mine development process, often long before a mine plan is submitted. However, early engagement is not required, nor is it common among smaller exploration companies who often develop prospects with the intent of selling them to larger mining companies. The breadth of comments from NGOs and Tribal governments also indicates that engagement may not be occurring at times or in ways that stakeholders believe offer meaningful opportunities to influence exploration or mining decisions. These entities frequently want to hear from government regulators as well as from mining companies.

While the mining industry on the whole supports early engagement, several industry commenters opposed making early engagement and outreach mandatory. The American Exploration and Mining Association commented:

> there are several reasons why mandating early community involvement may not be that helpful to one or more stakeholders… It also may not be an appropriate expenditure of time and resources for a short-term or speculative exploration program that could conclude that there is not good mineral potential. It also is not a practice that is appropriate to mandate (by law or regulation), even assuming that the federal government had the authority to do so (which it does not).[182]

There are numerous guides and handbooks available for companies that provide best practices for

[179] Australian Government, Department of Industry, Science and Resources, "A Guide to Leading Practice Sustainable Development in Mining," 2011. https://www.industry.gov.au/sites/default/files/2019-04/lpsdp-a-guide-to-leading-practice-sustainable-development-in-mining-handbook-english.pdf.

[180] Anglo Gold Ashanti Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

[181] Nevada Gold Mines, LLC and Barrick Gold Corp Response to Request for Information Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

[182] *Supra*., note 109.

early community engagement, including ones from the International Finance Corporation,[183] OECD,[184] ICMM,[185] the Prospectors & Developers Association of Canada (PDAC),[186] and IRMA.[187]

As an example of early public engagement in a different jurisdiction, Canada initiates public engagement early in the impact assessment process. Canada holds a public comment period on the initial mine project description before determining whether an impact statement is required. In addition, Canada requires the development of a public participation plan for the impact assessment process, which is also subject to public comment before the impact assessment is conducted. The public comment period on the initial mine plan and public participation plan is managed by the Impact Assessment Agency of Canada or by a Canadian province if the province also requires an environmental impact statement. Public comment on the public participation plan and initial project description helps to introduce the public to the project and impact assessment process and obtain early input on the mine plan and on how the public would like to be engaged, all before the public impact statement scoping comment period.

Early engagement should be complemented by continued engagement and transparency throughout the permitting, operational, closure, and post-closure phases of a mining project. The IRMA Standard requires companies to "encourage and facilitate stakeholder participation" in the implementation of environmental monitoring,[188] and to make all monitoring data and methodologies publicly available.[189] Some operating U.S. mines have even engaged citizens and community groups in the collection and analysis of environmental data, such as the Sibanye-Stillwater Mine in Montana, which signed a Good

[183] World Bank Group, "A Strategic Approach to Early Stakeholder Engagement: A Good Practice Handbook for Junior Companies in the Extractive Industries," 2014. http://documents.worldbank.org/curated/en/784051524469298172/A-strategic-approach-to-early-stakeholder-engagement-a-good-practice-handbook-for-junior-companies-in-the-extractive-industries.

[184] OECD, "OECD Due Diligence Guidance for Meaningful Stakeholder Engagement in the Extractive Sector," Feb. 2017. https://www.oecd.org/development/oecd-due-diligence-guidance-for-meaningful-stakeholder-engagement-in-the-extractive-sector-9789264252462-en.htm.

[185] See International Council on Mining & Metals, "Community Development Toolkit," July 2012. https://www.icmm.com/en-gb/guidance/social-performance/2012/community-development-toolkit; International Council on Mining & Metals, "Indigenous Peoples and Mining: Good Practice Guide," Oct. 2015. https://www.icmm.com/en-gb/guidance/social-performance/2015/indigenous-peoples-mining.

[186] Prospectors & Developers Association of Canada, "Principles and Guidance Notes'" 2014. https://www.pdac.ca/docs/default-source/priorities/responsible-exploration/e3-plus---principles/e3-plus-principles-amp-guidance-notes---update-2014.pdf?sfvrsn=8cabd698_2.

[187] Initiative for Responsible Mining Assurance, "IRMA Standard for Responsible Mining IRMA-STD-001," June 2018. https://responsiblemining.net › wp-content › uploads › 2018/07 › IRMA_STANDARD_v.1.0_FINAL_2018-1.pdf.

[188] *Id.* at 45.

[189] *Id.* at 46.

Neighbor Agreement with three local conservation NGOs in 2000,[190] and the Eagle Mine in Michigan, which funds a Community Environmental Monitoring Program run by community organizations.[191]

Some mining companies have policies to establish formal and informal advisory groups to regularly meet with community or Tribal members to address concerns about proposed or operating mines. British Columbia currently assumes that mining proponents will establish Community Advisory Committees, while Quebec requires monitoring committees to be established for all mines.[192] Eureka County, Nevada, commented that it uses community NEPA committees during the permitting process as a way to receive advice in its role as a cooperating agency.[193]

British Columbia is an example of a jurisdiction increasing transparency around mining operations and has a website at https://mines.nrs.gov.bc.ca/ that includes a map showing every mine in the province, including mines undergoing permitting, active mines, and closed mines. The website provides information for each mine, including a summary of the mine, mine plans and authorizations, compliance oversight (including inspection reports for environment, health and safety, and geotechnical stability), and agency points of contact.

VIII. Tribal Consultation and Engagement

The Federal Government has a unique relationship with Federally recognized Tribes derived from the Constitution of the United States, treaties, Supreme Court doctrine, and Federal statutes. This relationship is deeply rooted in American history, dating back to the earliest contact in which colonial governments engaged Tribes as sovereign nations. This relationship has been defined and clarified over time in legislation, Executive Orders, Presidential directives, and by the Supreme Court. The relationship between the United States and federally recognized Tribes was reaffirmed in the President's Memorandum on "Government to Government Relations with Native American Tribal Governments" (April 29, 1994). The memorandum directs Federal agencies to operate "within a government-to-government relationship with federally recognized Tribal governments." It also directs agencies to consult with Tribes prior to making decisions that affect Tribal governments and to ensure that all components of the agency are aware of the requirements of the memorandum. In addition,

[190] Stillwater Mining Company-Northern Plains Resource Council, Cottonwood Resource Council, & Stillwater Protective Association, Good Neighbor Agreement, May 8, 2000. https://northernplains.org/wp-content/uploads/2022/07/FinalCopy_GNA_2016_12_9.pdf.

[191] Eagle Mine LLC & Superior Watershed Partnership, "Community Environmental Monitoring Program Agreement," Dec. 2019. https://swpcemp.org/wp-content/uploads/2022/09/Agreement-2020-2025-Signed.pdf.

[192] Olthuis Kleer Townshend LLP, "A Comparative Review of Canadian Mining Law and Responsible Mining Standards," January 2020. https://www.oktlaw.com/raising-the-stakes/.

[193] Eureka County Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" (Nov. 6, 2000), directs Federal agencies to consult with Tribal governments regarding issues that "significantly or uniquely affect their communities." On November 30, 2022, President Biden signed a Presidential Memorandum titled "*Uniform Standards for Tribal Consultation*,"[194] which is described in more detail in Section VIII.B. In addition, the U.S. Government has also committed to protecting Tribal Treaty rights, signing an interagency MOU in 2016 and issuing guidance to agencies in 2022 to implement this work.

Tribes have been the inhabitants, possessors, and stewards of the land since time immemorial. Indigenous knowledge and connections to the land have been passed down for generations, and today, Tribes have deeply embedded cultural and spiritual connections to the natural environment with ties to places and cultural landscapes. The connections to place may not always be readily apparent. Today, many American Indians occupy reservation lands to which their ancestors were forcibly relocated a century or more ago and that are far from the Tribe's ancestral homeland. There are States in which there are currently no Indian reservations, yet within those States there are ancestral lands for which many Tribes maintain cultural relationships or ascribe religious and cultural importance to locations, places, and sites.[195] Tribes may also hold cultural affiliations to lands in neighboring states.

Mining may affect or adversely impact burial sites, human remains, and funerary objects of certain groups of people, including but not limited to Tribes, other Indigenous Peoples, Native Hawaiians, and enslaved Africans and their descendants, have a higher probability of being unmarked and undocumented and thus more likely to be affected by development projects, including mining.[196] While American Indian graves, remains, and funerary objects are protected by Federal law, careful and proactive planning promotes avoidance over mitigation of unintended impacts.

A. Treaty Rights

Tribal governments are sovereign governments. The United States Constitution recognizes treaties between the United States and Tribal Nations as "the supreme Law of the Land"—and that treaties are of equal importance to other Federal laws and obligations.[197] Federal agencies give effect to treaty language and ensure that Federal agency actions do not conflict with Tribal treaty and reserved rights. From 1778 to 1871, the United States' relations with Tribal Nations were defined and conducted

[194] "Memorandum on Uniform Standards for Tribal Consultation," Nov. 2022. https://www.whitehouse.gov/briefing-room/presidential-actions/2022/11/30/memorandum-on-uniform-standards-for-tribal-consultation/.
[195] *Supra*., note 42
[196] Advisory Council on Historic Preservation, "Advisory Council on Historic Preservation Policy Statement on Burial Sites, Human Remains, and Funerary Objects," 2023. https://www.achp.gov/sites/default/files/policies/2023-03/PolicyStatementonBurialSitesHumanRemainsandFuneraryObjects20230301_1.pdf.
[197] U.S. Const. art. VI, cl. 2.

largely through treaty-making.[198] In these treaties, Tribes typically ceded rights, title, and interest in their aboriginal lands to the United States while retaining—or reserving—certain rights. The United States Supreme Court, in interpreting the scope of reserved fishing rights, affirmed the principle that Tribes' reserved rights are "not a grant of rights to the Indians, but a grant of rights from them – a reservation of those not granted."[199] As the Forest County Potawatomi Community commented:

> The [Forest County Potawatomi Community] and Tribal nations generally, are place based and cannot relocate. The very nature of treaty rights, and a line of cases reinforcing treaty rights, makes clear that those rights are continuous, and the federal government is responsible for ensuring the sustainability of those rights, including hunting, fishing, clean water and environmental availability.[200]

Tribal Nations retain significant legal rights to determine whether, and if so, how, to develop minerals on reservation and Tribal fee land.[201] Those same Tribes, however, have far fewer legal rights or tools with respect to ceded lands that are located outside of their reservation borders. Some Tribes, like those of the Pacific Northwest and Great Lakes regions, retain an explicit treaty-based right to hunt and fish on lands beyond reservation boundaries,[202] which, under certain circumstances, could impact the permitting of mining facilities that have the potential to impact access to treaty-reserved resources or the treaty-reserved resources themselves.

When a Federal agency is engaging in regulatory or other decision-making processes, the agency engages, through consultation, with Tribal governments to determine whether Tribal treaty or reserved rights may be impacted by the proposed Federal action.[203] In consultation, agencies are expected to carefully consider Tribal views on the nature and scope of the treaty and reserved rights, consider Tribal views on the likelihood and level of impact on those rights by the proposed agency action, and determine how to best incorporate Tribal rights consistent with applicable law. Further, with the Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights, Federal agencies affirmed their commitment to

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[198] After 1871, other forms of Federal government decision-making continued to be utilized by the various branches of government to recognize Tribal rights, including, but not limited to: executive orders, military decrees, federal legislation, and judicial decisions.

[199] *United States v. Winans*, 198 U.S. 371, 381 (1905); see also, *Winters v. United States*, 207 U.S. 564, 577 (1908) (holding that Tribes retained the right to access and use surface water even if not expressly reserved in the applicable treaty between the Tribe and the United States).

[200] Forest County Potawatomi Community Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting. 2022.

[201] *See, e.g.*, 25 U.S.C. § 396a; *United States v. Shoshone Tribe of Indians*, 304 U.S. 111 (1938).

[202] Cohen's Handbook of Federal Indian Law § 18.04, Nell Jessup Newton ed. (2017).

[203] Advisory Council on Historic Preservation, "Tribal Treaty Rights in the Section 106 Process," 2018. https://www.achp.gov/sites/default/files/whitepapers/2018-09/TribalTreatyRightsintheSection106Process20180920.pdf.

protect Tribal treaty rights, reserved rights, and similar Tribal rights to natural and cultural resources.[204] However, comments from a number of Tribes and Tribal organizations expressed the view that treaty rights are not sufficiently considered in Federal decisions for mining projects on Federal lands. The Nez Perce Tribal Executive Committee wrote:

> Federal agencies should not approve mining on lands to which tribal reserved rights attach without the free, prior, and informed consent of the affected tribe or tribes…Plans must be denied that violate tribal treaty-reserved rights, interfere with the subsistence practices such rights facilitate, or unduly interfere with other environmental, recreational, or tribal traditional cultural properties or tribal sacred sites.[205]

The Oglala Sioux Tribe commented:

> The United States should honor its treaty and trust obligations to the Oglala Sioux Tribe and all Indian tribes. The Secretaries of the Departments of the Interior and Agriculture signed the Biden Administration's November 2021 Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights. That MOU affirmed the Departments' commitment to protect tribal treaty rights, reserved rights and similar tribal rights to natural and cultural resources and to demonstrate that commitment through early consideration of treaty and reserved rights in agency decision-making. The Departments must honor these commitments.[206]

B. Government-to-Government Consultation

Tribes' ability to influence mining decisions and the mining impacts those decisions have on Tribal communities depends largely upon where a proposed development would occur. While Tribes control activities on their own lands, Tribes seeking to influence mining or other activities beyond their reservation and trust land boundaries have fewer tools. Federal laws impose procedural protections for culturally significant land and the resources and sacred sites those lands contain, but few of these laws are well suited to addressing the challenges posed by mining operations. In addition to Executive Orders and Departmental policies requiring consultation with Tribes, the NHPA requires Federal

[204] Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty Rights and Reserved Rights, 2021. https://www.doi.gov/sites/doi.gov/files/interagency-mou-protecting-tribal-treaty-and-reserved-rights-11-15-2021.pdf.

[205] Nez Perce Response to Request for Information to Inform the Interagency Working Group on Mining Regulations, Laws and Permitting, 2022.

[206] Oglala Sioux Tribe Response to Request for Information to Inform the Interagency Working Group on Mining Regulations, Laws and Permitting, 2022.

agencies to "take into account the effects of their actions on historic properties,"[207] including properties of religious and cultural significance to Tribes.[208] However, the NHPA does not displace Federal agencies' statutory missions or guarantee that Tribal comments will be reflected in agency decisions, and the NHPA covers a subset of issues that are of concern to Tribes. Tribal Nations and their citizens, like all other Americans, have the right to engage during the environmental review conducted pursuant to NEPA[209] and during other public comment periods on permits, and as a NEPA cooperating agency, but Federal agencies generally retain full discretion over the contents of their decisions.

The Executive Branch has emphasized the requirement to establish regular and meaningful government-to-government consultation and collaboration with Tribes and Alaska Native Villages in the development of Federal policies that have Tribal implications in order to strengthen the Federal government-to-government relationships with Tribal Nations.[210] BLM and USFS conduct Tribal consultation once a mine plan of operation is received and complete such consultation by the time the NEPA process has concluded.

On January 26, 2021, as one of his first executive actions, President Biden issued a Memorandum for the Heads of Executive Departments and Agencies on Tribal Consultation and Strengthening Nation-to-Nation Relationships. In it, President Biden made respect for Tribal sovereignty and self-governance, a commitment to fulfilling Federal trust and treaty responsibilities to Tribal Nations, and regular, meaningful, and robust consultation with Tribal Nations cornerstones of Federal Indian policy. Regular, meaningful, and robust consultation is an expression of respect for Tribal sovereignty and self-governance and is both necessitated by and integral to fulfilling Federal trust and treaty responsibilities to Tribal Nations.[211]

On November 30, 2022, President Biden signed a Presidential Memorandum titled "*Uniform Standards for Tribal Consultation*,"[212] which builds on existing executive orders to provide specific minimum standards for Federal agencies regarding consultation procedures and training for agency staff on Tribal consultation, Tribal sovereignty, and the Nation-to-Nation relationship with Tribal Nations. Around the same time, the DOI and other agencies released updated Tribal consultation policies that

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[207] 54 U.S.C. § 306108; 36 C.F.R. § 800.2.
[208] 54 U.S.C. § 302706.
[209] 42 U.S.C. § 4332; Executive Order 13352, 69 Fed. Reg. 52989 (Aug. 26, 2004).
[210] Executive Order 13175, 65 Fed. Reg. 67249 (Nov. 6, 2000).
[211] Federal agencies may also find it useful to develop their own statements on their trust responsibility to Tribes, for example see: Advisory Council on Historic Preservation, "The Advisory Council on Historic Preservation's Statement on Its Trust Responsibility," July 21, 2004. https://www.achp.gov/sites/default/files/2018-06/TheACHPsStatementOnItsTrustResponsibility.pdf
[212] *Supra*., note 194

encourage consideration of Tribes that have been displaced from their original homelands, provide additional direction on the appropriate agency staff to be involved in consultation, and provide additional details on how consultation meetings should be conducted. The White House Office of Science and Technology Policy (OSTP) and CEQ also released on November 30, 2022, a memo titled "Guidance for Federal Departments and Agencies on Indigenous Knowledge," which provides information and best practices for including Indigenous Knowledge (IK) into federal research, policies, management, and decision-making.[213] The ACHP has also developed an information paper on how Indigenous Knowledge and expertise can support federal agencies in meeting their obligations under Section 106 of the NHPA to consult with Tribal Nations to identify and avoid, minimize, or mitigate the adverse effects of federal undertakings, including mining permits, on historic properties.[214]

Numerous Tribal commenters and some Industry commenters suggested codifying Federal government-to-government consultation obligations in more detail in law or regulation. As the Reno-Sparks Indian Colony commented:

> [F]ederal agencies' consultation obligations need to be more specifically defined in the regulations. The regulations need to be revised to unequivocally require federal agencies to engage in a deliberate and intentional step-by-step consultation process...regulations should be revised to require federal agencies to adhere to the best practices described in agency handbooks, manuals, and policy documents.[215]

In discussing two pieces of proposed legislation that would establish Tribal consultation requirements,[216] the American Exploration and Mining Association commented:

> [S]ome of their respective provisions, if coordinated well with other required evaluation processes (such as NEPA or NHPA Section 106), could provide some certainty for all concerned by establishing objective minimum standards, and to provide guidance and a floor for consultation.[217]

Another industry comment letter suggested:

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[213] White House Office of Science and Technology Policy and Council on Environmental Quality, "Guidance for Federal Departments or Agencies on Indigenous Knowledge," Nov. 30, 2022. https://www.whitehouse.gov/wp-content/uploads/2022/12/OSTP-CEQ-IK-Guidance.pdf.

[214] Advisory Council on Historic Preservation, "Traditional Knowledge and the Section 106 Process: Information for Federal Agencies and Other Participants," 2021. https://www.achp.gov/sites/default/files/2021-05/TraditionalKnowledgePaper5-3-21.pdf.

[215] Reno-Sparks Indian Colony Response to Request for Information to Inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

[216] H.R. 7580 (117th Cong. 2022) and H.R. 3587 (117th Cong. 2022).

[217] *Supra*., note 109

> Having a predictable, minimum process would help industry, federal agencies and Tribes understand exactly what is required. Providing an option for federal agencies and Tribes to further define their relationship through an MOU—as is sometimes used in NHPA Section 106 consultation—would provide the flexibility that could benefit specific Tribes' ability to meaningfully participate based on their specific needs and preferences with regard to particular lands or particular projects.[218]

C. Challenges

Some of the mining-related obstacles facing Tribes arise from the Mining Law's principle of self-initiation, which means that citizens who locate claims on Federal lands under the Mining Law may do so without undertaking community engagement or environmental planning. As discussed above, some mineral exploration and mining on Federal lands does not require BLM or USFS approval, thereby avoiding environmental review or public notification requirements under NEPA or Tribal consultation requirements under NHPA or E.O. 13175. It is often the case that only after years of effort and significant investment will a company submit a plan of operations to the appropriate land manager—either the BLM or USFS—at which point Tribes and stakeholders are made aware and resource conflicts are flagged. By that point, Tribes are at a significant disadvantage if they wish to see changes to the plan of operations. As two practitioners note, "NEPA and NHPA are procedural statutes that do not ensure protection of sites of importance to tribes, which often breeds distrust, confusion, and misunderstandings."[219]

The NHPA directs the BLM and USFS to consider the impacts of undertakings they carry out, license, or assist on historic properties, including those with religious and cultural significance to Tribes and Native Hawaiian Organization, but the NHPA does not prescribe an outcome. Section 106 of the NHPA's implementing regulations states that agency officials "shall ensure that the Section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking. Collaboration during the pre-application information gathering stage, or prior to initiating the Section 106 process can be essential to an agency's ability to consider alternatives for the proposed project's location in order to avoid or minimize impacts to historic properties in the Section 106 process.[220]

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[218] NGM & Barrick Gold Corp Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

[219] Dennis J. Donohue & Daniel P. Ettinger, *Navigating Tribal Opposition to Permits for Great Lakes Mining Projects*, 35-SUM Nat. Resources & Envt. 41, 43 (2020).

[220] Advisory Council on Historic Preservation, "Early Coordination with Indian Tribes during Pre-Application Processes: A Handbook," 2019. https://www.achp.gov/sites/default/files/documents/2019-10/EarlyCoordinationHandbook_102819_highRes.pdf.

While laws like NEPA and NHPA direct the BLM and USFS to identify alternatives to a proposed action, seek ways to avoid potential impacts, minimize and otherwise mitigate unavoidable impacts, the ability to do so is often constrained by the actions that have previously occurred. Federal agencies pursue Tribal consultation and government-to-government relations at that point, but there are at least three significant challenges.

First, significant resources would typically have been committed by the mining company, and there may have been pre-submittal discussions between the mining company and land management agencies before Tribal engagement occurs. Approaching Tribal governments with carefully developed and highly detailed exploration or mining plans before significant attention has been paid to deeply held Tribal interests and concerns can make Tribes feel like their engagement is an afterthought and unlikely to offer the possibility of any significant changes in the plan. In short, for Tribal engagement efforts to be meaningful, those efforts must occur much earlier, ideally before mining interests expend significant resources on exploration, and then continue through the entire exploration and mine development process.

Second, just as history dictates which locations hold sacred meaning and practical considerations preclude the movement of sacred sites, geology dictates where a mine may be developed. The type of mine, mine method, and related siting, layout, and infrastructure are all directly dependent upon the type, location, and grade of the mineral deposit. Further, Federal agencies have limited decision-making space within which to act. Under the Mining Law's self-initiation principle, the BLM and USFS must act on the proposed plan of operations submitted by the operator. The land managers cannot move mining projects to other locations, and while projects have to conform to existing laws, they may have limited options for minimizing and otherwise mitigating impacts. Land management agencies are often left with a near-polar decision to either approve or deny a plan, often under intense political pressure.

Third, Tribal governments may lack the capacity or technical expertise to fully evaluate highly technical mine plans and environmental studies. Even where Tribal governments have sufficient expertise, they may need additional time to review and consider the body of information presented to them, especially if they are reliant on outside consultants for technical assistance. A Tribe's need for time may be in direct conflict with significant pressure to move expediently through the environmental review and permitting process that is being brought to bear on both the proponent and the agency.

A conscientious mining company may seek to identify potentially conflicting land uses and sensitive resources at the outset of their exploration activities. Such companies will likely consider the cost of development and permitting complexity, incorporating those considerations into their decision-making

framework. The conscientious mining company may also want to identify and avoid sites and landscapes that are sacred to Indian Tribes, but that information may not be readily available. Tribes may be reluctant to share sensitive cultural information or IK. Applicants, including mining companies, should seek consent from Tribes to access sensitive information and, upon receiving consent, determine with the Tribes how to safeguard sensitive information. Applicants should develop data sharing agreements with Tribes to guide accessing and including sensitive information and procedures to maintain confidentiality.[221]

And while cultural sensitivity and proactive planning likely make business sense, neither are required by law. Despite good intentions, mining companies that do seek to engage with Indian Tribes may be reluctant to share sensitive business information about potential future projects, and there may be a high level of uncertainty regarding whether an exploration project will be able to be developed into a mining project. There simply may not be enough shared information to foster meaningful dialogue, and the discussions that do occur too often happen only after positions have finalized. In addition, without prior engagement, Tribes may not have confidence in mining companies' claims or data and may desire to have early engagement with Federal agencies in addition to mining companies. Mining companies and organizations themselves have recognized that earlier Tribal engagement is warranted.

D. Best Practices

Early engagement with and consideration of impacts on Indigenous Peoples is widely accepted to be an industry best practice, is encouraged by a wide range of international organizations (such as the OECD[222] and IFC[223,224]), industry organizations (such as ICMM[225] and PDAC[226]), foreign governments (such as Australia and Canada), and voluntary standards setting organizations, such as IRMA, and is consistent with standards from the International Organization for Standardization and the Responsible Minerals Initiative.

Numerous mining industry participants also expressed their views to the IWG that early engagement is essential. The NMA commented:

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[221] *Id.*
[222] *Supra.*, note184
[223] *Supra.*, note 183
[224] International Finance Corp., "IFC Performance Standards on Environmental and Social Sustainability," 2012. https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_pps.
[225] ICMM, "Indigenous Peoples and Mining Position Statement," 2013. https://www.icmm.com/en-gb/our-principles/position-statements/indigenous-peoples.
[226] Prospectors & Developers Ass'n. of Canada, "Excellence in Social Responsibility e-toolkit Version-01," 2009.https://www.pdac.ca/priorities/responsible-exploration/e3-plus/toolkits/social-responsibility.

> The mining industry has found that the most effective engagement processes start with a concerted effort by mining companies to establish proactive and meaningful communication with communities and Tribal neighbors well before any exploration activities begin.[227]

The United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), adopted by the U.N. General Assembly in September 2007, established a comprehensive framework of minimum standards for the survival, dignity, and well-being of Indigenous Peoples globally. Among other things, the UNDRIP states that countries should obtain the free, prior, and informed consent (FPIC) from Indigenous peoples before approving "any project affecting their lands or territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources."[228]

In a 2015 summary of extractive industry positions on FPIC, Oxfam defined FPIC as "the principle that indigenous peoples and local communities must be adequately informed about projects that affect their lands in a timely manner, free of coercion and manipulation, and should be given the opportunity to approve or reject a project prior to the commencement of all activities."[229] In the announcement of support for the principle of UNDRIP in January 2011, the U.S. stated that it "recognizes the significance of the Declaration's provisions on free, prior and informed consent, which the United States understands to call for a process of meaningful consultation with tribal leaders, but not necessarily the agreement of those leaders, before the actions addressed in those consultations are taken."[230]

Tribal Nations and many NGOs strongly support implementation of FPIC for U.S. mining projects and mineral sourcing, with 175 Tribal Nations, Tribal organizations, and conservation, environmental, religious, and human rights groups in two separate comment letters urging the United States to make the principle a requirement. One letter stated, "[s]ecuring the free, prior and informed consent of Indigenous Peoples early in the process should be a requirement for project or agency decisions that would impact their resources, and permitting agencies must adopt provisions reflecting this principle," and added that "FPIC also should apply to any re-mining of waste materials or other projects or

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[227] *Supra.*, note 176

[228] United Nations, "United Nations Declaration on the Rights of Indigenous Peoples," Sept, 2007. https://www.un.org/development/desa/indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf.

[229] Oxfam, "Oxfam Community Consent Index 2015," July 2015. https://www.oxfam.org/en/research/community-consent-index-2015.

[230] U.S Department of State, "Announcement of U.S. Support for the United Nations Declaration on the Rights of Indigenous Peoples," Jan.,2011. https://2009-2017.state.gov/s/srgia/154553.htm.

Federal policies meant to support a circular economy."[231] The second letter encouraged a broader application of FPIC, saying that it should apply "for any government actions in the mineral supply chain that may impact their community, lands, or cultural resources."[232] Other input stated that FPIC should be a requirement of the U.S. government for any mineral sourcing or support for mining projects under the Defense Production Act, BIL, or other programs. FPIC is also the subject of an entire chapter of the IRMA Mining Standard.

A number of international mining companies have announced their commitment to FPIC. Oxfam reported 14 companies with publicly stated FPIC commitments as of 2015, and the ICMM's Mining Principle 3.7 states, "Work to obtain the free, prior and informed consent of Indigenous Peoples where significant adverse impacts are likely to occur, as a result of relocation, disturbance of lands and territories or of critical cultural heritage, and capture the outcomes of engagement and consent processes in agreements." In individual comment letters, the mining industry pointed out that it views FPIC as a "process and an outcome", but that FPIC "should neither confer veto rights to individuals or sub-groups nor require unanimous support from potentially impacted Indigenous Peoples."[233] One comment letter quoted a 2008 U.N. document that stated,

> It should be noted that the FPIC process may include the option of withholding consent. It should also be noted that, in most countries, neither indigenous peoples nor any other population group actually have the right to veto development projects that affect them. The concept of free, prior and informed consent is therefore a goal to be pursued, and a principle to be respected to the greatest degree possible in development planning and implementation.[234]

There are some jurisdictions that have enacted legislation that formally adopts the standards of UNDRIP and requires FPIC before projects can proceed, such as Australia and the province of British Columbia, although some of the jurisdictions are still developing policies and procedures to fully operationalize the principle.

Other best practices involve engagement with Indigenous Peoples and consideration and management of the positive and negative socioeconomic impacts on them. These measures are intended to be taken by mining proponents and are endorsed by the OECD, IFC, ICMM, PDAC, and IGF, among

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[231] Chickaloon Village Traditional Council et al., Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.
[232] Accelerate Neighborhood Climate Action et al. Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.
[233] *Supra*., note 176
[234] "United Nations Resource Kit on Indigenous Peoples' Issues." United Nations, 2008. https://unsdg.un.org/resources/resource-kit-indigenous-peoples-issues.

other organizations, and are requirements of certain jurisdictions, IRMA, and other voluntary standards.

One measure involves the development of a Stakeholder Engagement Plan, and while Tribal Nations are sovereign nations and not stakeholders, an analogous plan can also be developed for engagement with Tribal communities. A Tribal Engagement Plan would generally include the following:

(a) Identifying Tribes that may be impacted by the company's activities;
(b) Engaging with Tribes to design appropriate engagement processes;
(c) Developing a Tribal Engagement Plan appropriate for the risks at the stage of development (exploration, feasibility, construction, operation, closure, post-closure, etc.), and updating that plan as development progresses;
(d) Documenting engagement processes and activities and making such documentation public;
(e) Providing to Tribes non-confidential information requested in a timely manner;
(f) Providing a way to protect confidential information provided by Tribes;
(g) Involving Tribes in the development of social and environmental impact assessments;
(h) Developing a grievance mechanism consistent with Chapter 1.4 of the IRMA Standard (June 2018);
(i) Reporting back to Tribes on issues raised during engagement processes or through such grievance mechanisms; and
(j) If necessary, offering financial assistance to Tribes to allow them to take part effectively in the Tribal Engagement Plan.

Another measure involves the development of a Social Impact Assessment (SIA). Although socioeconomic impacts are often analyzed in NEPA documents, the level of analysis and detail is often considerably lower than a full-fledged SIA and generally does not cover the full sweep of social impacts considered by SIA practitioners.[235] Some agencies, including the USDA, have issued guidance specifically for performing SIAs as part of the NEPA process,[236] but the DOI has not. Furthermore, while there will generally be ongoing monitoring of environmental outcomes and the effectiveness of environmental mitigation measures during mining operations, and the USFS handbook requires monitoring for social impacts, the IWG did not receive evidence regarding the existence or effectiveness of any formal programs to monitor and mitigate the social impacts of mining by industry or regulators in the United States.

The mining industry understands the benefits of SIAs. The 2002 final report from the industry-led Mining, Minerals and Sustainable Development Project—the forerunner of today's ICMM—noted that

[235] *Supra*., note 27
[236] Forest Service Handbook 1909.17 Chapter 30.

an SIA "provides an opportunity to plan how a minerals development project can best support sustainable development and the community's vision of the future[.]"[237]

The Advisory Council on Historic Preservation has also issued a handbook, *Early Coordination with Indian Tribes During the Pre-Application Process,* that outlines proactive steps federal agencies, Tribes, and applicants can take to improve the consideration and protection of historic properties, including those of religious and cultural significance, during infrastructure project planning by federal agencies and applicants for federal approvals or funding. The guidance highlights early, pre-decisional coordination and the importance of federal agencies assisting applicants in coordinating with Tribes during pre-application stages to improve outcomes for agencies, Tribes, and applicants throughout the process.[238]

The IWG believes it is important to stress that not all impacts on affected communities are negative. Indigenous Peoples can benefit from mining operations through jobs, economic development, new or upgraded infrastructure, educational scholarships and opportunities, and direct investment by a mining company in the community. Community benefit agreements (CBAs)—also referred to as community development agreements or impact-benefit agreements—can help ensure that such benefits reflect actual community needs, include input from the affected community, are well-planned, and last beyond the conclusion of mining operations.[239] CBAs can include local hiring preferences, the purchase of services and supplies from local vendors, infrastructure investments, resources to allow the community to hire independent consultants to engage in monitoring and regulatory processes, payments into a transition fund that could only be accessed upon a mine shutdown, and much more. The development of CBAs is included in the 2018 IRMA Standard, which requires companies to ensure that CBAs are developed transparently, with local participation, and with equitable inclusion of different social groups, particularly women.[240] The Mining Association of Canada indicates that such agreements have become a common practice in Canada and identifies over 500 agreements in place.[241]

The First Nations Major Projects Coalition (FNMPC), a Canadian collective of 90+ Indigenous Nations that works to "promote economic benefits maximization and minimize negative effects on [First Nations'] lands and resources," has developed a Major Project Assessment Standard to "'raise the bar'

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[237] "Breaking New Ground: The Report of the Mining, Minerals, and Sustainable Development Project." Mining, Minerals and Sustainable Development Project, 2002, p. 226. https://www.iied.org/9084iied.
[238] *Supra*., note 220
[239] World Bank, "Mining Community Development Agreements Source Book," 2012, p. 10. https://www.sfu.ca/rem/planning/research/IBA/Database.html.
[240] IRMA Standard, Chapter 2.3. (2018).
[241] The Mining Association of Canada, "Mining-Indigenous Relationship Agreements," https://mining.ca/our-focus/indigenous-affairs/mining-indigenous-relationship-agreements/.

for the meaningful inclusion of Canadian indigenous groups in major project assessment."[242] The FNMPC Standard is consistent with the comments of Tribal Nations to the IWG, including endorsement of full implementation of UNDRIP and FPIC. One of the principles of the FNMPC Standard is the development of a socio-economic impact assessment that "must be conducted either collaboratively [with] or be community-led by"[243] the impacted Tribal Nation, and that the impacted Nation must be "meaningfully involved in the development and implementation of an agreeable Human Environmental Monitoring Program / Socio-economic Monitoring Plan."[244] Another requirement of the FNMPC Standard is that First Nations must "be meaningfully involved in development and implementation of environmental management and monitoring plans, through the life of the Project until reclamation and restoration efforts are completed to their satisfaction."[245]

Another best practice is providing financial or technical assistance to Tribal Nations to support them to meaningfully participate in consultations and discussions with industry, or to allow for independent review of technical reports and mineral exploration or development proposals that have the potential to impact Tribal resources, whether during the permitting process or during mine operations, reclamation, and closure. The Government of Canada recently initiated the Indigenous Natural Resource Partnerships Program, which will distribute $80 million in grants over 5 years to Indigenous communities, Tribal Councils, Indigenous organizations, and others to increase Indigenous community capacity "to engage in, benefit from, actively participate in and/or capitalize on economic development opportunities in the natural resource sectors," among other purposes.[246] The Oglala Sioux Tribe commented in its letter to the IWG, "Tribes must be provided with adequate funding for capacity building and to ensure full and effective participation throughout the process. Tribes should be remunerated for costs associated with consultations, such as providing ready access to technical expertise, attending consultations, conducting studies, and producing reports."

Multiple industry commenters also endorsed providing such assistance to Tribal Nations; for example, one letter commented, "The federal government should provide funding and support training for Tribes in NEPA, NHPA, FLPMA, NFMA and other relevant laws and processes to create capacity for the Tribes to be able to effectively respond to the consultation requests."[247] One organization

[242] First Nation Major Projects Coalition, "FNMPC Major Project Assessment Standard." 2021, p. 7. https://fnmpc.ca/wp-content/uploads/2021/04/FNMPCMPASFINAL.pdf.
[243] First Nation Major Projects Coalition, "Guidance Appendices to the Major Projects Assessment Standard," 2021, p. 6. https://fnmpc.ca/wp-content/uploads/2021/04/FNMPCMPASGuidanceappendices-FINALJanuary2020.pdf.
[244] *Supra*., note 242 at 56.
[245] *Id.* at 17.
[246] Government of Canada, "Indigenous Natural Resource Partnerships," no date. https://www.nrcan.gc.ca/our-natural-resources/indigenous-natural-resources/indigenous-natural-resource-partnerships/22197.
[247] NGM/Barrick Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

suggested broader uses for financial assistance: "We recommend that the federal government make funding for voluntary land and natural resource use planning available to Tribes, NGOs, and others in areas with the potential for development of critical minerals."[248] On December 1, 2022, the Federal Permitting Improvement Steering Committee (FPISC) announced $5 million to be made available to Tribes in order to enhance Tribal engagement in NHPA, NEPA and permitting processes, but this is only applicable to projects that are covered under FAST-41.

IX. Royalties & Revenues

A. Background

As explained in section V. A. above, no royalties are due on locatable minerals extracted from Federal lands. At this time, Federal revenue derived from hardrock mineral production on Federal lands is limited to the location and initial maintenance fees thereafter.[249] For decades, the DOI and others have been analyzing amending the 1872 Mining Law to impose royalties on hardrock mineral production on Federal lands, similar to the longstanding royalties assessed on oil, natural gas, coal, sodium, potassium, and other minerals on Federal lands that are disposed of via leasing. The analyses generally assess what a royalty system should look like, how the royalty would be assessed (e.g., net, net smelter return, or gross), how the product would be valued for royalty computation purposes, what deductions should be allowed, the appropriate royalty rate, and other details. This section will not attempt to restate that substantial body of work, but instead will provide a succinct summary of the issue and present ideas for additional revenue to help provide a fair return to American taxpayers for the extraction of valuable minerals from Federal lands and cover the cost of administering the hardrock minerals program.

The USFS authority is limited to managing the surface use of National Forest System lands. The USFS does not currently receive any funds collected from the mining claim fee program and does not currently charge any fees to administer the surface use of national forest lands under the locatable minerals program.

B. Royalty Analysis

The GAO recently studied mineral governance structures in different jurisdictions, including western states—all of which use leasing systems and charge royalties on hardrock mining on State lands. In the

[248] RESOLVE Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.
[249] Mining companies also pay Federal taxes on income derived from mining operations, in addition to state and local taxes.

same report, the GAO also studied mineral governance in Australia, Canada, and Chile, which are top mineral-producing countries, perceived to have good mining governance, and are considered attractive to investors. All three countries primarily use leasing, or agreements that are similar to a lease, to manage exploration for hardrock minerals and mine development. Some Canadian provinces also allow mineral exploration using a location system similar to the U.S., but all provinces generally require conversion to a lease for production.

Under the President's Reorganization Plan No. 3 of 1946, hardrock minerals found on acquired lands can be disposed of through a lease. Because the BLM is responsible for the Federal mineral estate, they manage the leasing process, including production verification, of Federal minerals. The Office of Natural Resources Revenue (ONRR), as the agency responsible for royalty management functions, collects royalty revenue from hardrock mining on acquired lands. ONRR ensures timely and accurate reporting and payment of royalty obligations by conducting audits, compliance reviews, and other investigation and enforcement tools. Currently, the BLM administers 54 active hardrock leases covering 41,188 acres,[250] with 16 leases located in the Missouri lead belt currently producing minerals with a 5 percent gross royalty via three mining operations. Below is a table of the revenue generated from those leases between 2017-2021, as reported by ONRR.[251]

Table 1: Royalties and Rent from Federal Hardrock Leases

Year	2017	2018	2019	2020	2021
Royalties and Rent	$8,659,434	$9,827,510	$7,801,115	$6,648,396	$8,973,460

In 2021, the BLM estimated the gross value of mineral production for gold, silver, copper, molybdenum, lead, and zinc on all Federal lands in the west at approximately $4.9 billion during 2019.[252] Based on that 2019 estimate, the table below estimates the revenue that would have been generated if those leases contained certain different royalty terms. For purposes of this analysis, all valued minerals were assumed to be in active production and eligible for royalty taxation.

[250] Bureau of Land Management, "Public Land Statistics 2021," 2022. https://www.blm.gov/sites/default/files/docs/2022-07/Public_Land_Statistics_2021_508.pdf.
[251] U.S. Dept. of the Interior, Natural Resources Revenue Data. https://revenuedata.doi.gov/query-data.
[252] U.S. Geological Survey, "Mineral Commodity Summaries," 2021. https://www.usgs.gov/centers/national-minerals-information-center/mineral-commodity-summaries.

Table 2: Comparison of Royalty Rates to Estimated Value of Locatable Minerals Produced from Western Federal Lands

	Estimated Federal Mineral Valuation Tax Base, 2019	2%	5%	8%
Gross Revenue	$4,896,704,954	$97,934,099	$244,835,248	$391,736,396
Net Smelter Return	$1,224,176,239	$24,483,525	$61,208,812	$97,934,099

Gross revenue royalties are typically assessed as a percentage of the value of the mineral extracted and do not allow for deductions of mining costs. Net smelter return royalties are assessed as a percentage of the value of the mineral, with deductions allowed for the costs of transporting and processing the mineral (mill, smelter, or treatment costs), but no deductions allowed for extraction costs. Costs in the above table are estimated at 75 percent of the 2019 Gross Revenue. This assumption is in lieu of available information to estimate "at mine" and "at smelter" costs, which vary by mine based on the mineral, ore grade, stripping ratio, geography, and commodity prices.

Not included in the above table due to a lack of relevant data are royalties based on net proceeds, which are assessed as a percentage of the net proceeds (or profit) of the sale of the mineral with deductions for various mining costs and therefore would be lower than net smelter return royalties. GAO refers to these as "functional royalties."[253] Royalty revenue from State lands in Alaska, Arizona, California, Idaho, New Mexico, and Utah is partially based on net proceeds, which deduct operating and overhead expenses from the tax base. The NMA has indicated support for a 2 percent net royalty.[254]

The IWG calculated estimated revenues looking at royalties of 8 percent, 5 percent, and 2 percent, a range that is comparable to existing hardrock mineral leases on acquired lands and in other jurisdictions. Industry has noted that setting a fixed royalty rate for all mines does not account for the diversity of hardrock minerals and the different geological conditions and costs associated with processing the minerals. Industry has also argued that imposing a royalty system on existing mines could trigger a Fifth Amendment takings issue. The Congressional Budget Office (CBO) considered this contention and concluded that, in its view, "imposing payments on mine operators with existing claims is an exercise of the government's sovereign power to levy compulsory fees."[255] CBO estimated that an 8 percent gross royalty on existing claims and operations would raise an average of $394

[253] U.S. Gov't Accountability Off., GAO-08-849R, Hardrock Mining: Information on State Royalties and Trends in Mineral Imports and Exports (2008), https://www.gao.gov/products/gao-08-849r.
[254] National Mining Ass'n., Principles for Royalty from Hardrock Mineral Production on Federal Lands, 2021.
[255] Congressional Budget Office, "Cost Estimate for H.R. 2579, Hardrock Leasing and Reclamation Act of 2019," 2020. https://www.cbo.gov/system/files/2020-07/hr2579.pdf.

million per year, but that royalties on new operations would not be appreciable for at least ten years due to the time it takes to bring new discoveries into production.

Imposing a royalty on minerals extracted from claims or leases would require additional staff for production verification and auditing. Any statutory changes would also likely require ONRR to revise its regulations governing product valuation for royalty computation purposes, appropriate deductions and allowances, the collection and disbursement of any royalty revenue generated from hardrock mining production, and ONRR's ability to perform audits, compliance reviews, and other investigations to verify the timely and accurate payment of revenue due. Changes to ONRR's reporting systems might also be required.

C. Claim Maintenance Fee Analysis

A processing fee of $20, location fee of $40, and initial maintenance fee of $165 for lode claims and sites and $165 per 20 acres of a placer claim or portion thereof are required to be paid when first recording a claim, with payment of a maintenance fee of $165 per lode claim or site and $165 per 20 acres of a placer claim or portion thereof required each year thereafter.[256] Maintenance and location fees are adjusted at least every 5 years. An exception to the annual maintenance fee requirement is provided by the Small Miner Waiver (SMW). Mining claimants that, along with all related parties, hold or control no more than a total of 10 mining claims or sites nationwide and that spend a minimum of $100 in labor on improvements for each claim, may obtain the SMW.

Over the last several years, the BLM's location fees and claim maintenance fees have generated average annual revenue of approximately $70-79 million, although in FY 2021, BLM collected over $100 million. In the annual budget and appropriations process, the BLM typically requests and Congress appropriates approximately $40 million for Mining Law Administration program operations. This appropriation of $40 million from the General Fund is then reduced by amounts collected by BLM and credited to its Management of Lands and Resources appropriations account from mining claim maintenance and location fees. Fees collected in excess of the $40 million appropriation are deposited in the General Fund of the Treasury and offset other government spending. The USFS does not receive any portion of claim maintenance fees to run its mineral program.

Increasing claim maintenance fees would have certain advantages, such as administrative simplicity and the ability to establish a graduated fee structure that could incentivize claim holders to diligently explore and develop their claims. A graduated and increasing claim maintenance fee schedule would disincentivize the holding of mining claims without bringing minerals into timely production, thereby

[256] 43 C.F.R. § 3830.21

encouraging the development of critical minerals. The table below estimates the revenue that would have been generated from different claim maintenance fee levels in 2022.

Table 3: Revenue from Different Claim Maintenance Fee Levels

	2022 non-SMW Federal Land Claims	$165 Flat Rate	$300 Flat Rate	$500 Flat Rate
Active claims[257]	471,800[258]	$77.8 million	$141.5 million	$235.9 million

D. Small Miner Waiver

As mentioned in the previous section, mining claimants that, along with all related parties, hold or control no more than a total of 10 mining claims or sites nationwide and that spend a minimum of $100 in labor on improvements for each claim, may obtain the SMW. The SMW was the subject of a 2018 DOI Office of Inspector General Report, which found that the program was "essentially an honor system" and recommended that the BLM "perform a cost-benefit analysis of the administrative cost and the burden of managing the maintenance fee waiver for small miners."[259] The BLM's cost-benefit analysis found that there were significant administrative costs associated with the program, including processing administrative appeals and combating fraud, but only "anecdotal observations of possible benefits."[260]

Multiple groups, including one consisting of a large number of former BLM employees,[261] recommend eliminating the SMW entirely. These groups argue that eliminating the SMW would disincentivize unnecessary ground disturbance while reducing administrative costs. Eliminating the SMW would also avoid the need to adjust waiver requirements and maintenance fees in tandem. Small mining interests counter that the SMW remains an important tool for small claimants who are diligently pursuing development and should be retained.

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[257] "Active claims" are those claims which have a title that is actively maintained, and is not a reflection of production. The annual claim fee scenarios do not account for price sensitivity. That is, the quantity of claims is static across all fee scenarios, whereas in reality some percent of claims would likely leave the market, or conduct assessments in lieu of claim fees, as claim fees increased. The amounts in Table 3 are therefore an upper bound.

[258] Approximate number as of September 30, 2022, based on total number of active claims, minus the estimated number of SMW claims in 2022. Source: BLM.

[259] Department of the Interior, Office of Inspector General, "Bureau of Land Management Maintenance Fee Waivers for Small Miners," Dec. 2018. https://www.doioig.gov/reports/inspection/bureau-land-management-maintenance-fee-waivers-small-miners.

[260] *Id.*

[261] Public Lands Foundation Response to Request for Information to inform Interagency Working Group on Mining Regulations, Laws, and Permitting, 2022.

The table below includes estimates for revenue at different claim maintenance fees if the SMW were eliminated. The second row assumes all claimants currently holding the SMW pay the claim fee.[262] The third row assumes that 20 percent of the SMW holders would relinquish their claims instead of paying the fee.

Table 4: Revenue from Different Claim Maintenance Fee Levels and SMW Scenarios ($ in millions)

	2022 Federal Land Claims	$165 Flat Rate	$300 Flat Rate	$500 Flat Rate
Active claims paying fee	471,800	$77.8	$141.5	$235.9
Active claims, w/o SMW	489,099	$80.7	$146.7	$244.5
Active claims w/o SMW (net)	485,640	$80.1	$145.7	$242.8

X. Financial Assurances and Bonds

The BLM and USFS hold billions of dollars in financial assurances, such as bonds, for hardrock mining operations on Federal land. These financial assurances are designed to prevent taxpayers from assuming the financial burden of mine site reclamation if an operator is unable or unwilling to perform the reclamation themselves. Reclamation may include removing roads and structures, regrading, reseeding, and otherwise returning the surface to as near a natural condition as possible, or another approved safe and productive condition. Reclamation does not include responding to releases or threatened releases of hazardous substances from mining operations. The USFS and BLM also hold financial assurance for long-term maintenance and operations, such as perpetual post-closure water treatment required to protect surface and groundwater resources. Currently, there is no mechanism to collect any form of revenue or financial assurance to cover unplanned or unpredicted conditions. Nor is there a mechanism to collect any form of revenue or financial assurance to cover responding to releases or threatened releases of hazardous substances from mining operations. USFS and Interior regulations do not require public review or disclosure of financial assurance amounts.

A. BLM Financial Assurance Requirements

When, in 1980, the BLM first began administering Interior's regulation of mining operations under the Mining Law, the Surface Management regulations at 43 C.F.R. § 3809 included a provision providing the authorized officer with discretion to require a financial assurance for plans of operations.[263] There was no bonding requirement for notice and casual use-level operations.

[262] SMW numbers for 2022 are estimated assuming a consistent percentage of SMWs (3.5%) from previous years.
[263] 45 Fed. Reg. 78913 (Nov. 26, 1980).

In 2001, Interior amended the surface management regulations, and those amended regulations remain in effect today. The regulations now include a financial assurance requirement for all notice and plan-level activities. The current regulations also place the burden of bond determination calculations on the operator, with the BLM reviewing those calculations to ensure bond sufficiency. Currently, the BLM allows surety bonds, cash, irrevocable letters of credit, certificates of deposit, trusts, and insurance, but corporate guarantees are not accepted.

Based on BLM's program experience, the IWG's view is that insurance policies perform poorly as a form of assurance in the mining context. The premium-to-coverage period relationship and related cancellation policies of most insurance companies undermine long-term protection of Federal interests and provide little to no warning of a stoppage of premium payment and subsequent policy cancellation. Further, if a mine operator becomes insolvent and files for bankruptcy, the court may freeze payments to creditors, including insurance companies, during the pendency of bankruptcy proceedings. Absent policy payments, policies may lapse, and taxpayers may assume eventual liability.

The BLM is allowed to enter into agreements with States to establish financial assurance amounts, as it has with Nevada. Under such agreements, the State can be the holding agency for financial assurances, as long as those assurances adequately cover BLM's performance standards and the Secretary of the Interior has access to the funds. Also, the BLM may require an operator to provide a long-term financial mechanism (i.e., trust funds) to ensure the continuation of post-mining maintenance of any treatment facilities and infrastructure.

In 2019, GAO reviewed the amount of financial assurances held by the BLM and USFS for hardrock mines and reported that as of the end of FY 2017, BLM held $3.047 billion in financial assurances, a shortfall of approximately $11 million in estimated total reclamation costs.[264] As of the end of FY 2022, the BLM held $3.67 billion in bonding for notice and plan level operations, with a shortfall of $18.9 million.[265] For all operations where a shortfall in bonding is identified, BLM prepares a corrective action plan.

[264] U.S. Gov't Accountability Off., GAO-19-436R, Hardrock Mining: BLM and Forest Service Hold Billions in Financial Assurances, but More Readily Available Information Could Assist with Monitoring (2019), https://www.gao.gov/products/gao-19-436r.

[265] BLM Memorandum, Fiscal Year 2022 – 3809 State Director Bond Review Certification.

B. USFS Financial Assurance Requirements

The USFS promulgated regulations for locatable operations in 1974, which included provisions for reclamation[266] and bonding.[267] The regulations state that the authorized officer has the discretion to require a bond or other listed form of acceptable financial guarantee from any operator required to file a plan of operations. The regulations also state that the amount of the bond should be based on the estimated cost of stabilizing, rehabilitating, and reclaiming the area. Forest Service regulations at 36 C.F.R. § 228.4(a)(3) require an operator to submit a plan of operations if the proposed operations will likely cause a significant disturbance of surface resources.

FSM 2840, last updated in 1990, directs the authorized officer to require a bond or other acceptable form of financial guarantee for any proposal that requires a plan of operations, and that the guarantees should be sufficient to cover the full cost of reclamation. The 2004 "Training Guide for Reclamation Bond Estimation and Administration for Mineral Plans of Operation Authorized and Administered under 36 C.F.R. 228 A" further clarifies that the full cost of reclamation includes the cost as if the government were to hire third-party contractors to complete the work.[268] Currently, the Forest Service accepts a corporate surety bond, cash in the amount equal to the required dollar amount deposited into a Federal depository, or negotiable securities of the U.S. having market value at the time of the deposit not less than the required dollar amount of the bond[269]; or an irrevocable letter of credit, assignment of savings, or CD; or, in the instance of long-term post-closure obligations, a trust fund as financial guarantee instruments.[270] However, due to the language at 36 C.F.R. § 228.13, trust fund investment options are limited to negotiable securities of the U.S.

USFS policy encourages the authorized officer to avoid duplicative bonding between the agency and other partner Federal or State agencies by entering into cooperative agreements. While not explicitly stated in regulation or policy guidance, the Forest Service does not recommend entering into any agreement that would prevent the authorized officer from accessing the full dollar amount required to reclaim USFS lands or held in an instrument that is not allowed by the agency. Forest Service policy requires units to periodically review reclamation cost estimates and financial guarantees for adequacy, with a recommended period of one-year reviews. As of October 2022, the Forest Service currently holds approximately $275M in financial guarantees for 603 hardrock operations.[271]

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[266] 36 C.F.R. § 228.8.
[267] 36 C.F.R. § 228.13.
[268] U.S. Department of Agriculture Forest Service, "Training Guide for Reclamation Bond Estimation and Administration," April 2004, https://www.fs.usda.gov/geology/bond_guide_042004.pdf.
[269] 36 C.F.R. § 228.13(a).
[270] FSM 6560.
[271] Includes all approved plans of operation, from small scale placer operations to larger producing mines.

C. EPA CERCLA Section 108(b) hardrock mining review

Section 108(b) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), also known as "Superfund," directs the EPA to develop regulations that require classes of facilities to establish and maintain evidence of financial responsibility consistent with the degree and duration of risk associated with the production, transportation, treatment, storage, or disposal of hazardous substances.[272] Between 2007 and 2017, EPA conducted several analyses related to hardrock mining financial responsibility for its proposed and final rulemakings under CERCLA Section 108(b). Analyses described in background documents for the proposed rule include, among other things, an overview of practices at hardrock mining facilities, a review of damage cases at hardrock mines, instrument specification and provider qualification reports by financial responsibility instrument type, financial responsibility requirements of State and Federal agencies, and a market capacity study that assessed the capacity of third-party markets to underwrite financial responsibility instruments required by the CERCLA 108(b) rulemaking.

EPA did not finalize the proposed requirements, instead determining in 2018 that final regulations were not appropriate. This decision was based on an interpretation of the CERCLA statute and an analysis of the record developed for the rulemaking. EPA found that, in the context of CERCLA Section 108(b), the degree and duration of risk associated with the modern production, transportation, treatment, storage, or disposal of hazardous substances by the hardrock mining industry does not present a level of risk of taxpayer-funded response actions that warrants the imposition of financial responsibility requirements by EPA for this sector.[273] In relation to the IWG's specific focus on Federal lands, EPA's final rule referenced statements from BLM and USFS that stated that no modern mines permitted since 1990 by either BLM or the Forest Service have been added to the CERCLA National Priorities List. This decision does not affect the environmental requirements, the process for site-specific risk determinations, or enforcement authorities that already exist under environmental statutes such as CERCLA, RCRA, CWA, CAA, and NEPA.

[272] 42 U.S.C. § 9608(b).
[273] 83 Fed. Reg. 7556 (Feb. 21, 2018).

XI. Additional Issues and Needs Raised to Revitalize Domestic Mining

A. U.S. Bureau of Mines

At the end of the 20th century, the U.S. lost its position as the global leader in mining, both in terms of total production and the development of cutting-edge mining technology. Our mineral needs are increasingly met by foreign entities that provide needed minerals at a lower cost, often because of cheaper labor and less stringent environmental and workplace safety standards. The infrastructure necessary to restart the domestic mining industry has atrophied with the increased offshoring of mining. Our educational system also scaled back mining programs, and the number of graduates every year is a fraction of those of other major mining nations. The shrinking educational pipeline threatens the United States' ability to train and develop the regulators and skilled workforce required to strengthen the domestic mineral supply chain.

In order to cultivate an environment conducive to rebuilding the U.S. mining sector, the Federal government needs to promote a stream of consistent and widely available geologic data, technology, and support infrastructure, as well as dedicated funding for mining science, metallurgy, and mining education. In recognition of the need for additional data, technology, research, and consistency, several commenters recommended that the U.S. Bureau of Mines (USBM), or a similar single agency, be re-established.

The USBM was the primary Federal agency conducting scientific research and disseminating information on the extraction, processing, use, and conservation of mineral resources from 1910 through 1996, when it was defunded by Congress. Although originally founded to deal with a wave of catastrophic mine disasters, including an alarming number of fatal explosions and fires in U.S. underground coal mines, the mission of the USBM expanded over the years to include the following functions:[274, 275]

- conducting scientific and technologic investigations concerning mining, and the preparation, treatment, and utilization of mineral substances with a view to improving health conditions, increasing safety, efficiency, economic development, and conserving resources through the prevention of waste in the mining, quarrying, metallurgical, and other mineral industries;
- inquiring into the economic conditions affecting these industries;
- investigating explosives and peat;

[274] 30 U.S.C. § 3.
[275] National Park Service, "History of the Bureau of Mines Project," Apr. 2015. https://www.nps.gov/miss/learn/management/bomhist.htm.

- investigating the mineral fuels and unfinished mineral products belonging to, or for the use of, the United States, with a view to their most efficient mining, preparation, treatment, and use; and
- disseminating information concerning these subjects.

These functions were further refined to include research to develop the scientific basis for technology to help meet the Nation's mineral and material needs and mitigate associated economic, human, and environmental costs. The USBM sought improvements for almost every aspect of the materials production cycle, from removing minerals from the earth to enhancing the performance of materials to pursuing waste management technologies and resource conservation. The health and safety of the workers in the Nation's mines and mineral processing plants and the environmental impact of mining and mineral processing were major USBM concerns.

When Congress closed the USBM on September 30, 1996, almost $100 million, or 66 percent, of its programs ceased, and approximately 1,000 of its employees were dismissed. Part of the functions of the USBM were transferred to other Federal agencies, including BLM, USGS, the Bureau of Reclamation, and the Office of Surface Mining Reclamation and Enforcement (OSMRE) within the Department of the Interior, as well as DOE and the Department of Health and Human Services.[276]

B. Access to Data

The importance of timely processing of mineral exploration proposals is emphasized by the industry's assertion that by 2019, only about 5 percent of the U.S. had been explored and mapped using high-resolution geophysical technologies.[277] Furthermore, in the U.S., companies are not required to share or report on their own mineral surveys or analyses. The closure of the USBM resulted in the loss of a central Federal steward of USBM research and mining data repositories and inconsistent preservation and transfer of USBM data, maps, reports, and information (mostly in hardcopy or microfiche formats) to various successor agencies and the National Archives.[278] The extent to which USBM data, maps, reports, and information have been preserved is unknown, which poses challenges to accessing USBM information. The USGS and a few other libraries are in the process of digitizing and placing online some historic USBM publications, most of which are not otherwise available except

[276] U.S. Department of the Interior Bureau of Mines, "The History of the U.S. Bureau of Mines," 1994, p. 32. https://babel.hathitrust.org/cgi/pt?id=uc1.31210024859777&view=1up&seq=13; and JN Murphy, "Update on the Continuing Functions of the Former US Bureau of Mines," Min. Eng. 1997 Jan, pp. 87-89.
[277] Drenth, B. J., V. J. S. Grauch (2019), *Finding the gaps in America's magnetic maps*, Eos, 100. https://doi.org/10.1029/2019EO120449.
[278] National Archives, Records of the U.S. Bureau of Mines, no date, https://www.archives.gov/research/guide-fed-records/groups/070.html.

in physical copies and are at risk of being lost. Some States have conducted and developed open-source data repositories from research conducted by the State and academia, or voluntarily shared by landowners or companies.

Many other countries require that companies report data on mineral exploration and extraction. Both Canada and Australia have built comprehensive geoscience databases that collect and provide public access to exploration and extraction data, with certain protections for proprietary information.[279] Canada and Australia also invest significantly in geologic mapping in addition to collecting information from mining companies.

According to the Association of American State Geologists, the United States lacks an effective process for gathering, organizing, compiling, or publicly sharing geologic data that would help in the identification of valuable mineral deposits.[280] Part of this shortcoming occurs because mining companies are not required to share mining and exploration data with Federal or State governments. The USGS and State geological surveys have been collaborating on a series of efforts to conduct new geophysical and geochemical surveys and geologic mapping through the USGS Mineral Resources Program's Earth Mapping Resources Initiative (Earth MRI) and to preserve and provide access to legacy geological, geophysical, and geochemical data relevant to domestic mineral resources through the USGS National Geological and Geophysical Data Preservation Program. These efforts are generally restricted to providing and preserving public domain data and do not collect or serve non-public data, with a few exceptions in which States have entered into a data sharing agreement with the data owners. State geologic surveys may also not be allowed to enter mining claims for the purpose of gathering data for geologic mapping, exacerbating the problem and forcing the creation of incomplete maps. Having a Federal protocol for data collection, organization, compilation, and public dissemination could improve identification and development of critical minerals while also helping to identify and avoid sensitive resources that may be adversely affected by exploration or mining. Informational improvements such as these could greatly enhance land and resource management, environmental reviews, public engagement, and, where appropriate, the permitting of mining projects.

While the 1872 Mining Law does not bar a mining company from proposing mining activities in areas that may include or impact sensitive resources, competing resource values can complicate development and permitting efforts, delaying development, increasing costs, and inviting litigation. Mining operators may have incomplete information about competing values that exist on a tract of

[279] See Canadian Mining and Mineral Data, including interactive maps and mineral commodity flows at: https://www.nrcan.gc.ca/maps-tools-and-publications/maps/mining-minerals/16878; and Australia's Mineral Potential Mapper at https://www.ga.gov.au/scientific-topics/minerals/mineral-potential-mapper.

[280] IWG Informational Meeting with AASG, May, 2022.

land and therefore insufficient information to evaluate the extent to which conflicts between exploration and development and cultural and environmental stewardship may impact the environmental review process and/or permitting. Integrating geologic, environmental, and cultural data into a common platform may increase the capacity to avoid adverse impacts, minimize impacts that cannot be avoided, and further mitigate impacts that remain.

C. Research, Science & Technology

Today's critical mineral list is significantly different from one that would have been developed in the early 20th century, or the late 20th century, and we should fully expect that lists will continue to evolve. New technologies can make previously uneconomic ore deposits profitable while increasing the importance of previously unimportant minerals. The growing demand for EV batteries, for example, has put tremendous pressure on the market for lithium, cobalt, nickel, graphite, and manganese.

The public perception of mining is often framed by images or experiences with mining landscapes that were developed prior to modern regulations, technologies, and practices. It is fair to state that current mines do not look like those of the pre-regulatory past, and the next generation of mines may not look like those of the present, both in scope and in terms of environmental impact. This could mean expanded processing of by-product critical minerals, new methods for tailings management, autonomous operations, and increased use of electric haul trucks and other mining equipment. Additional areas for innovation may include the next generation of digital operations, smart sensors, and new biology-based separation and concentration technologies.

There are numerous science and technology needs related to the mining life cycle, from extraction to post-remediation. Some of these science and technology needs were outlined in a 2002 National Research Council study,[281] as well as in more recent publications.[282] Mining research and development can lead to new technologies that reduce production costs, enhance the quality of existing mineral commodities, reduce the environmental impacts of mining them, and create entirely new mineral commodities.

Additional data and research are needed on how mines and mining impact surface and groundwater quality and flows, as well as other factors that complicate environmental analysis and permitting, and

[281] National Research Council, "Evolutionary and Revolutionary Technologies for Mining," 2002. https://nap.nationalacademies.org/catalog/10318/evolutionary-and-revolutionary-technologies-for-mining.

[282] U.S. Geological Survey, "Critical Mineral Resources of the United States—Economic and Environmental Geology and Prospects for Future Supply," 2017, p. 797. http://doi.org/10.3133/pp1802. U.S. Geological Survey, "A resource lifecycle approach," 2013, p.37. https://doi.org/10.3133/cir1383D.

existing data needs to be housed in a single repository, making it easier to access. Such research would help agencies and the public understand and improve the accuracy of impact predictions in EISs and the effectiveness of management and mitigation measures. The USGS, other research agencies, and Federal land managers are working to improve our understanding of these processes and their impacts. Additional research is needed to improve practices for re-processing, water treatment, and management and reclamation of tailings, waste rock, and overburden, as well as to continually improve characterizing the potential for acid rock drainage and metal leaching. Better predictive models are needed for understanding the geochemistry of waste rock, ore, and tailings and associated leachate production, as well as site-specific precipitation patterns to inform capacity design and water balance calculations. NGOs and industry both encourage the Federal government in their comments to the IWG to provide additional support for development of new technologies that can reduce overall mining costs, improve production and efficiency, and avoid, reduce, or minimize environmental impacts.

> The costs of mine closure and reclamation of the site now constitute a significant portion of mining cost. Hence, ore bodies that can be mined in a way that produces virtually no waste and that leaves a small surface 'footprint' may have distinct economic and environmental advantages over ore bodies that produce large amounts of waste and create large land disturbances. Until recently, these criteria have generally not figured significantly in decisions about mineral exploration. Exploration geologists are now developing new ore-deposit models to improve the chances of finding such 'environmentally friendly' ore bodies.[283]

As a next step in the process of mineral deposit modeling, scientists at the USGS have developed geology-based geoenvironmental models for diverse mineral deposit types. "[T]he need for and use of geoenvironmental models are immediate and varied; these range from environmental prediction and mitigation, and baseline characterization, to grass-roots mineral exploration, and assessment of abandoned mine lands and mine-site remediation."[284]

[283] *Supra*., note 281

[284] U.S. Geological Survey, "Geoenvironmental Models of Mineral Deposits--Fundamentals and Applications," 1995, p. 272. https://pubs.usgs.gov/of/1995/ofr-95-0831/.

D. Training and Education

The 1970 Mining and Minerals Policy Act;[285] the 1980 National Materials and Minerals Policy, Research and Development Act;[286] the Energy Act of 2020;[287] and the 2021 Infrastructure Investment and Jobs Act[288] all contain language directing Federal departments to develop recommendations to ensure adequate staffing and training of personnel responsible for reviewing, permitting, and monitoring mineral-related activities on Federal land and for mapping, characterizing, and assessing domestic mineral resources. Industry has also supported providing additional funding to the BLM and USFS for appropriate staffing and has noted their own need to increase the trained labor force for mining development and oversight. However, a lack of educational programs for building expertise in mining and mining oversight and a lack of interest in mining among the cohort of students who will become the managers of tomorrow compound a shortage of properly trained workers.

The mining industry is having difficulty attracting young professionals and building a workforce. One major obstacle appears to be the negative public perception of the industry, in addition to limited resources and support for educational programs. As the National Research Council frames the issue:

> [A] by-product of investment in research and development is its beneficial effect on education. Research funds flowing to universities support students at both the undergraduate and graduate levels and provide opportunities for students to work closely with professors. In a synergistic way research and development funds help ensure that a supply of well-trained scientists and engineers will be available in the future, including individuals who will be working in the fields of exploration, extraction, processing, health and safety, and environmental protection, as well as researchers, educators, and regulators.[289]

[285] 30 U.S.C. § 21a.
[286] Pub. L. No. 96-479.
[287] Pub. L. No. 116-260, Division Z.
[288] H.R.7516 - Clean Energy Innovation and Deployment Act of 2020.
[289] *Supra*., note 281

XII. RECOMMENDATIONS

The IWG's recommendations are a synthesis of input from all levels of government, from career technical experts to agency leadership, with a wide range of technical backgrounds and diverse perspectives drawn from dozens of departments, agencies, and offices, heavily informed by input from an even broader array of stakeholders, scientists, legal experts, and Tribal, State, and local government officials. Due to the breadth of topics being analyzed, the IWG formed subgroups that provided additional analysis and expertise to the full IWG. This report and the recommendations that follow are the product of input from all of these sources, as well as from an interagency comment process and a deputies-level working group.[290]

The departments and agencies represented on the IWG have concluded that the current configuration of our mining laws—where access is provided by the 150-year-old Mining Law of 1872 while standards for environmental performance, public engagement, and protection of Tribal rights and resources are included through a patchwork of Federal and State laws—fails to meet the needs of communities, developers, Tribes, or the environment. In particular, there is no mechanism to focus development on areas with high mineral values and low resource conflicts. To strengthen the domestic mineral supply chain while increasing environmental protection and stakeholder engagement, we would need to overhaul how we approach mining on Federal lands. The IWG believes it would be failing at its mission if it did not outline a comprehensive vision of future management that pushes for high-value, low-conflict outcomes.

The IWG believes that positive outcomes would be maximized if Congress established a leasing system for hardrock minerals that is built upon a robust land use planning framework. Such a system should drive development to low-conflict, high-mineral-value areas early in the process, providing more certainty for developers and more protections for sensitive areas and potentially impacted Indian Tribes and communities. New revenue from royalties and updated claim maintenance fees would be coupled with revenue sharing provisions to assure that all impacted Indian Tribes, communities, and landscapes benefit from the economic development of these resources and that sufficient revenue is raised to fully address all remaining legacy mining impacts, while protective standards would prevent new long-term mining impacts before they arise. Specific permitting requirements that consider hardrock mining's particular impacts would provide additional certainty and clarity for operators and permitting agencies alike. These efforts would be accompanied by a sustained effort to accelerate

[290] As noted in Footnote 6, this report is not a budget document and does not imply support or approval of any specific action or investment. All activities and recommendations included in the report are subject to the Administration's annual budget formulation process, including resource constraint and policy priority considerations, as well as the availability of appropriations provided by Congress.

mining for critical minerals in appropriate areas through financial incentives for responsible production and permitting prioritization.

One way to implement this vision would be through the development of a joint DOI-USDA programmatic EIS with associated land use management plan updates and detailed resource assessments covering the eleven contiguous Western states and Alaska. This programmatic review would classify lands into one of three categories:

- Priority I lands would have undergone previous mineral exploration or development that resulted in significant site degradation, contamination, or ongoing pollution discharges, and where reprocessing could provide additional valuable minerals while remediating or redressing prior or ongoing resource damage;
- Priority II lands would have high mineral resource development potential and lack significant known resource development conflicts. Priority II areas would be identified only after the agency or agencies complete early and meaningful engagement with Tribes, other agencies with expertise on the lands and resources they contain, and stakeholders who may be impacted by development; and
- Priority III lands would be those lands not believed to have high mineral development potential, or where the programmatic review determines that mineral development would likely involve significant resource conflicts.

With appropriate congressional authority and direction, DOI and USDA could then establish financial, procedural, and substantive incentives consistent with the recommendations contained in this report to prioritize development in Priority I and II areas. Such a programmatic assessment could also alert prospective mineral developers to the heightened permitting challenges that are likely to accompany efforts to develop in Priority III areas, and include additional management stipulations to proactively address avoidance and mitigation needs. National parks, wilderness areas, wildlife refuges, military lands, or other withdrawn lands, designated critical habitat for species listed as threatened or endangered under the ESA, sites listed on or eligible for the National Register of Historic Places, areas subject to treaty reserved uses by Indian Tribes, drinking water source areas, and other similar areas would be considered for exclusion from availability for mineral claims or leases.

The IWG recommends that Congress work closely with the mining industry, Tribes, mining communities, environmental NGOs, labor, and the Administration to craft a planning and leasing system that creates certainty and stability for industry, strengthens domestic mineral supply chains, advances environmental sustainability, and fosters early and meaningful community engagement. Although thoughtful concerns were raised by the mining industry regarding the existing hardrock leasing system that is used on certain Federal lands, the IWG notes that hardrock leasing is the

predominant method of mineral access used by other major mining nations,[291] and the IWG did not receive any arguments as to why a properly designed leasing system could not be equally successful in this nation, with a careful and appropriate transition to ensure that current exploration and development is not adversely affected and that the system enhances, not hinders, future development. The IWG also believes that careful consideration should be given to allowing prospectors to continue to stake mineral claims during this transition to a leasing system and that a fair process should be established for the conversion of claims to leases or other legal instruments established by Congress. Once a leasing system is in place, mineral claimants should be required to convert claims to leases as a condition of mine plan approval. This approach would continue to give mining interests broad latitude to investigate potentially valuable mineral deposits while providing Federal agencies with additional tools to tailor operational requirements to individual circumstances.

While the focus of this report is mainly on extraction and permitting on Federal lands, that is only one component of the necessary government-wide effort to secure mineral supplies, which must also include building a robust circular economy, working closely with our international partners on new sources of supply, and driving higher performance standards worldwide. This work is occurring in other forums.

The IWG recommends the following policy measures, regulatory changes, and legislative actions to reduce permitting timelines for exploration and development of domestic minerals on Federal land without sacrificing environmental protection. The IWG believes these reforms can increase consideration of impacts and engagement with Tribes and local communities. Some of these reforms address aspirational goals and system-wide changes, and many also address permitting, community engagement, environmental protection, and other needs, improving the clarity of expectations for both operators and communities. The IWG strongly recommends that, to the maximum extent possible and consistent with agency statutory mandates, Federal agencies coordinate these efforts. The IWG believes that, wherever possible, BLM, USFS, EPA, USACE, FWS, and other Federal agencies should issue joint regulations and guidance. Consistent requirements and guidance promote clarity for permit applicants, better applicant submissions, and decisions that are more durable and timelier.

IWG recommendations that would require legislative action by Congress are identified with an (L); recommendations that would require Federal agencies to promulgate or amend regulations are identified with an (R); and other recommendations that may be achieved by updating Federal or agency policies are identified with a (P). In some cases, a recommendation may fall into more than one category; for example, a change to policy that would be more effective if made enforceable through regulation is identified by multiple letters, e.g., (P, R).

[291] *Supra*., note 9.

The IWG stresses that a key to success for many of the recommendations in this report is providing appropriate resources to the entities that would implement them, whether they are Tribal governments, Federal agencies, or State or local governments.

A. Access to and Use of Federal Lands

The IWG concluded that a properly designed and implemented leasing system would best provide access to minerals on Federal lands. However, the IWG also believes that the transition to such a system could be complex administratively and complicate new exploration and development efforts. These effects may, in turn, cause short-term delays in efforts to meet clean energy and climate goals. Amending land use plans to better address hardrock mining and ancillary uses would likewise take significant resources to complete. The IWG believes there are a number of improvements that can reduce resource conflicts, incentivize development in low-conflict areas, avoid damage to special areas, promote the use of best practices, and foster early and meaningful engagement with Tribal Nations and traditionally underrepresented communities. These improvements do not displace the benefits of transitioning to a leasing system or addressing mining and ancillary uses in land use planning and can be taken independently of or during the time required to implement more comprehensive reforms. Background on access and use of Federal lands is found in Section V.A.

1. Amend the 1872 General Mining Law to permanently end patenting of Federal lands. (L)

Congress should codify the moratorium currently included in annual appropriations bills to permanently end patenting of Federal lands under the Mining Law. This change would promote stability and predictability and has had bipartisan support for over three decades.

2. Congress should develop a leasing system to provide access to hardrock minerals on public lands (L).

As previously discussed, the IWG recommends that Congress work closely with the mining industry, Tribes, mining communities, environmental NGOs, labor, and the Administration to craft a planning and leasing system that creates certainty and stability for industry, strengthens domestic mineral supply chains, advances environmental sustainability, and fosters early and meaningful community engagement. The IWG also believes that Congress should develop a fair process for converting claims into leases or other legal instruments. Transitioning to a leasing system, while recognizing valid existing mineral claims and requiring conversion of those claims to leases prior to development, would enhance comprehensive resource management and allow American taxpayers to capture a share of the revenue generated by the production of publicly owned resources.

3. Once a leasing system is established, prepare a programmatic Environmental Impact Statement to incorporate mining into land use planning processes (L)

The IWG believes that for a leasing system to be most effective, Federal land management plans need to identify areas where hardrock mining is presumptively appropriate and areas where hardrock mining is presumptively inappropriate because of significant or irreconcilable impacts on other resources. The IWG recognizes that amending individual land use plans to address hardrock mining would be administratively onerous and therefore encourages Congress to direct and resource the BLM and USFS to prepare a programmatic EIS, similar to those prepared for solar and wind development on Federal lands, to guide agency leasing decisions. The BLM, USFS, and their partner agencies could then tier to the programmatic EIS's tentative suitability determination in completing subsequent NEPA analyses, reducing the time required for subsequent environmental reviews and permitting determinations. Determinations made in the programmatic EIS should be treated as presumptively valid unless site-specific information unavailable in the programmatic EIS identifies significant new resource development conflicts.

The IWG believes that while a programmatic EIS could provide benefits independent of a leasing system by, for example, alerting potential mineral developers to challenges they are likely to encounter if they seek to develop in uniquely sensitive areas, a programmatic EIS would be far more useful if completed in conjunction with the transition to a leasing system. The IWG therefore encourages Congress to adopt a phased approach, transitioning to a leasing system and defining the requirements for hardrock mineral leasing before directing and resourcing the BLM and USFS to initiate work on a programmatic assessment of mineral development suitability.

4. Conduct one or more pilot projects exploring innovating ways to integrate mining into land use planning processes. (P)

A pilot program would allow the agencies to test novel land use planning strategies that are not part of standard FLPMA or NFMA procedures. If resources become available, then these strategies could be implemented across the agencies' land base to reduce conflicts and drive mineral development to high-value, low-impact areas.

For example, the Arctic Executive Steering Committee recently launched an initiative on the sustainable development of critical minerals in Alaska, with DOI partnering with the State of Alaska and other academic, Tribal, and local partners. The Committee aims to improve understanding of Alaska's critical mineral resources, the community and environmental sustainability concerns about developing those resources, and to develop and demonstrate a community-led approach to

inform decisions on developing those resources. One potential outcome of the initiative would be to identify areas for potential mine development, expansion, or mine waste reprocessing where development would be less controversial and more supported because the decision-making process reflects community, economic, and environmental values. The IWG encourages the BLM and USFS to partner with the USGS, which is currently leading efforts to improve understanding of critical mineral resources, to understand community and sustainability concerns, and to pilot community-led decision processes. These agencies should also partner with other Federal agencies, Tribes, States, communities, NGOs, and the mining industry to identify other locations where similar initiatives or other innovative approaches could provide access to new mineral resources while incorporating community, Tribal, and environmental concerns from the very beginning.

5. Amend Interior and USFS regulations and policy to provide for consistent implementation of the Mining Law and access to minerals. (R)

The BLM and USFS should cooperatively amend their respective departmental regulations to foster consistency in access to Federal lands containing potentially valuable minerals deposits, while acknowledging the differences in each agency's authorities. The U.S. Forest Service has not updated or meaningfully amended its mining regulations since 1974. At a minimum, amended regulations should include consistent requirements and processes for obtaining access to Federal land and mineral resources, and for obtaining approval to explore or operate on those lands.

6. Provide the BLM and USFS with authority to debar an operator based on past poor performance. (L)

The IWG encourages Congress to authorize the BLM and USFS to prohibit the issuance or reissuance of any permit or approval for mineral exploration or production to any entity where the applicant, the operator, or the owner—or any persons or entities directly controlled by the applicant, operator, or owner, or any persons or entities that directly control the applicant, operator, or owner—is in substantial violation of the terms of another mining-related permit or in substantial violation of any environmental law or regulation or has not achieved cleanup standards established prior to mining at a mining operation in the United States. The State of Montana adopted such a law, which may provide a useful template. This requirement would prevent mining operators that are out of compliance with mining or environmental laws or regulations from reorganizing and obtaining additional approvals to operate without first resolving ongoing deficiencies. This requirement would also incentivize prompt action to address noncompliance issues and limit government liabilities from bad operators using a shell game to avoid closure and remediation requirements.

7. Create a new administrative withdrawal process that allows for conditional development. (L)

The IWG believes Congress should establish a new type of administrative withdrawal process, to be applied consistently to allow both the Secretary of the Interior and the Secretary of Agriculture to withdraw lands from availability for the location of new mining claims unless the claimant commits to heightened environmental and cultural resource protection standards. These limited withdrawal areas could be identified programmatically, as part of periodic individual land use plan revisions, or as targeted amendments to existing plans. This is different from the current system, where lands are either open or closed to location and entry under the mining laws, and would better alert prospective mineral developers to the sensitive nature of certain areas as well as heightened impact avoidance, minimization, and mitigation requirements. Prospective mineral developers could then more accurately assess the complexity of the environmental review and permitting process and develop their exploration and development plans in light of that complexity.

Congress already tailors withdrawals to provide specific resource protections. For example, the Central Idaho Wilderness Act of 1980 allowed prospecting, exploration, and development of cobalt to continue in a portion of the River of No Return Wilderness, but with a provision that the Secretary of Agriculture "may take all reasonable measures" to ensure that mining or processing of cobalt "does not significantly impair" bighorn sheep habitat.[292]

8. Reemphasize the importance of mineral potential reports in land use planning decisions. (P)

One opportunity to expedite permitting without compromising environmental protection involves a land use planning process that identifies areas with resource conflicts and either incentivizes avoidance of those areas or encourages voluntary commitments to achieve more stringent environmental standards. A number of commenters endorsed including mining and ancillary uses in the land use planning process to provide additional protections for special or sensitive areas and to allow companies to know in advance what areas may be uniquely difficult to mine. These endorsements are consistent with the IWG's recommendation that Congress authorize the BLM to transition to a leasing system and to integrate leasing and planning.

The IWG encourages the BLM and USFS to more fully consider mineral potential reports and reasonably foreseeable development scenarios at the outset of land management planning process (e.g., Forest Plans, and Resource Management Plans). Lands that possess low mineral potential,

[292] Pub. L. No. 96-312, 94 Stat. 948 (1980). The wilderness area was subsequently renamed the Frank Church River of No Return Wilderness by Congress.

where development is not reasonably foreseeable, or where other competing resource values are incompatible with mineral development should be evaluated for potential withdrawal from location and entry under the mining laws to prevent the location of claims that are unlikely to result in mineral production and that may complicate efforts to manage for the full suite of multiple uses. Where mineral potential is high and commercial development is reasonably foreseeable, management plans should place greater emphasis on impact avoidance, minimization, and other mitigation. Fuller consideration of mineral development in the planning process also provides an opportunity to address ancillary land uses.

9. Ancillary uses and mill sites (L)

As previously mentioned in Section V.A.., the IWG is not making specific policy or regulatory recommendations regarding ancillary uses or mill sites, but encourages Congress to consider legislation that would amend the Mining Law to resolve longstanding controversies on these issues. We also note that addressing ancillary uses through the land management planning process may provide more certainty to operators who seek to obtain either a permit, lease, right-of-way authorization, or land exchange in order to secure the right to use Federal lands for ancillary uses.[293]

B. Fair Return and Diligent Development

The IWG recommends the following revisions to the 1872 Mining Law and the current claim system fee structure to promote a fair return to the public for use of Federal lands and the extraction of publicly owned minerals from those lands. Background relevant to these recommendations can be found in Section IX of this Report. In the following recommendations, the IWG is providing a menu of revenue-raising options for Congress to consider, but wants to emphasize that the primary objective is raising sufficient revenue from the hardrock mining industry to provide a fair return to taxpayers, address legacy and current hardrock mining impacts on affected communities and the environment, and to fund efforts to improve the mine permitting process. How that revenue is raised is of secondary importance. Any one of these options by itself, if structured properly, could raise the necessary amount of revenue, and multiple ones could be enacted to provide different incentives or accomplish additional policy goals, such as discouraging speculative claims.

[293] *See* Opinion of the Solicitor, Dept. of the Interior, M-37077 Use of Mining Claims for Mine Waste Deposition, and Rescission of M-37012 and M-37057, May 16, 2023.

1. Place a royalty on commercial production from mines on Federal lands. (L)

The IWG recommends that Congress enact a royalty for hardrock mineral production from Federal lands. The IWG is not taking a position on whether such royalties should be placed only on new mines, on expansions to existing mines, or on all new and existing mines and mining operations. The IWG does note that there may be significantly more revenue available to improve permitting, address legacy sites, and share with Tribes, States, counties, and others when this royalty recommendation is applied to all mines. For administrative simplicity, the IWG recommends adopting a royalty on net proceeds with a floor of 4 percent and a ceiling of 8 percent, which is within the range of existing State and international hardrock royalty rates. The IWG recommends that royalties not be fixed at a single value for all minerals but rather be specific to particular commodities (and possibly the ore grade). Mineral-specific royalties would facilitate consideration of supply and demand, development costs, and potentially regional differences between resources, and allow for tailoring incentives to national interests.

2. Congress should increase claim maintenance fees. (L)

The IWG recognizes a serious and pervasive shortfall in resources available for Federal agencies to conduct the analysis and permitting associated with mineral exploration and development and to cover legacy mine reclamation needs. The IWG strongly believes that additional support is needed to improve permitting efficiency and efficacy; to identify, monitor, and remediate legacy pollution, including acid mine drainage; to support meaningful Tribal and community engagement; and to address other important mining related needs. We believe that a portion of the revenue generated by the extraction of minerals from Federal lands should be dedicated to addressing environmental analysis and permitting expenses, as well as community impacts.

The IWG also recognizes that any revenue from a royalty system, particularly if only applied to new mines, would take time before becoming significant. Claim maintenance fees, however, are already being collected and generating revenue to fund the BLM Mining Law Administration program. As noted earlier, increasing claim maintenance fees would provide multiple benefits. Administering increased claim maintenance fees would be administratively simple, as the mechanism for collecting those fees already exists. The IWG therefore strongly encourages Congress to authorize the DOI to adjust claim maintenance fees in order to incentivize timely claim development, stabilize funding to support timely and efficient reviews and permitting, and minimize financial obligations for the American taxpayer.

3. Create a BLM system whereby claim maintenance fees escalate if no exploration or production occurs on a claim after a certain period of time. (L)

To further disincentivize the holding of mining claims for speculative purposes and to incentivize timely development of mineral resources found on Federal lands, the IWG recommends that Congress provide authority to establish an escalating fee structure that would increase claim maintenance fees over time unless claimants either conduct notice-level operations or submit an exploration or mining plan on their claims within a reasonable amount of time following the initial filing of a claim (e.g., 10–15 years). Any new fee system should be indexed to inflation to prevent erosion of incentives and agency funding.

4. Congress should create a reclamation fee to generate additional revenue for abandoned hardrock mine remediation. (L)

The IWG recognizes the urgent need for additional resource support to address hardrock AML sites, particularly those that impact Tribes and environmental justice communities. Unlike for coal, where companies pay up to 22.4 cents per ton of coal mined to fund unreclaimed legacy coal mine sites, there is no similar system for hardrock mining. The Obama administration proposed a fee of 7 cents per ton of material displaced from hardrock mining, which it estimated would raise $200 million per year for abandoned hardrock mine reclamation. The IWG encourages Congress to strongly consider adopting a similar fee on material displaced from hardrock mining. This fee could be applied in conjunction with other means of funding AML reclamation.

5. Designate uses for additional revenue generated from the above recommendations. (L)

The IWG recommends that Congress redirect receipts from claim maintenance fees in excess of what BLM uses to fund its Mining Law Administration program, which currently goes into the Treasury's General Fund, to support the abandoned hardrock mine land program authorized by Section 40704 of the Bipartisan Infrastructure Law, which includes grants to States and Tribes. In addition to funding generated by claim maintenance and/or reclamation fees, the IWG also recommends that Congress dedicate a portion of revenues from any future royalty system to the abandoned hardrock mine land program.

If additional revenue is raised through the implementation of claim maintenance fees, royalties, or other recommendations contained in this report, the IWG recommends that Congress also consider funding the following programs with that revenue:

- Administration of the USFS Mining Law program;

- Grants for Tribes and communities to obtain technical assistance, or support technical reviews during permitting, engagement, and consultations;
- Impact mitigation for Tribes and communities;
- Environmental mitigation efforts;
- State and Tribal historic preservation offices to allow for timely and thorough cultural resource surveys;
- Federal permit review costs borne by EPA, FWS, NPS, ACHP, and other agencies involved in proposal and plan reviews;
- Establishment of a permanent fund to address future environmental impacts including unanticipated events not covered by current financial assurance such as tailings dam failures; and
- Workforce development grants.

6. Create a Revenue Sharing Program to Help States and Local Governments Address the Impacts that Result from Hardrock Mineral Development on Federal Lands. (L)

Many Tribes, State, and local governments expressed concern that they often lack the financial resources to build or expand schools, hospitals, water treatment facilities, and other critical infrastructure needed to support large mining operations and mine employees. These groups also identified challenges in hiring and retaining the teachers and other civil servants needed to support rapidly changing communities. The IWG recognizes the community impacts that can occur when industrial-scale development comes to an area, in particular rural areas, and recommends that a share of any revenue received from hardrock mining on Federal lands be returned to the States, counties, and communities where the revenue was generated in order to fund necessary programs and infrastructure in communities impacted by mining. The IWG believes that distribution to States and local governments should occur only after the resource needs noted above are addressed.

7. Reform the Small Miner Waiver (SMW) program. (L, R)

The DOI OIG, BLM's cost-benefit analysis, and comments to the IWG all identified significant administrative costs and uncertain, if any, benefits to the discretionary SMW program. The Secretary has the discretion to eliminate the SMW altogether, and the IWG recommends that she either direct BLM to promulgate regulations to that effect or that Congress reform the program to lower administrative costs and eliminate unintended incentives. The legislative language establishing the SMW option does not provide the Secretary with discretion to establish lower claim maintenance fees with no annual assessment work requirement; should Congress wish to allow for lower claim maintenance fees—for example, a $100 claim maintenance fee in place of the $100 assessment work requirement—for miners with fewer than a certain number of claims,

it would need to amend the Mining Law. While a lower claim maintenance fee would not eliminate the administrative burden, as BLM would still need to confirm that claimholders held fewer than the maximum number of claims allowed under a reduced-fee program, it would raise additional revenue and cut down on fraudulent assertions of assessment work.

C. Permitting Process Recommendations

The IWG provides the following recommendations to improve coordination and efficiency during the NEPA and permitting processes for mineral exploration and mining operations on Federal lands. Relevant background is in Section VI of this Report.

1. Update and adopt the BLM-NV permitting process model as standard operating procedure nationwide. (P)

The IWG recommends that the project management process utilized by the BLM Nevada state office and described in the Mine Permitting chapter be updated consistent with the public engagement and interagency coordination recommendations made later in this chapter, and that the updated policy should be made standard operating procedure nationwide for both BLM and USFS, with modifications made as necessary to ensure consistency with individual State laws and regulations. The IWG believes that the process should remain voluntary for applicants except for required pre-application meetings (see below), but that BLM and USFS should strongly encourage its use.

2. Require BLM and USFS to share baseline reports with EPA, other applicable Federal cooperating agencies, and Tribal governments when implementing recommendation 1. (P)

Front-end loading of baseline data acquisition and review saves time during the NEPA process by fostering common understandings and expectations. These, in turn, can support coordinated actions leading to more efficient and durable decisions. Front-end loading, however, can diminish the ability of EPA, other NEPA cooperating agencies, and Tribes to provide input into the decision-making process if all agencies that are likely to have permitting equities are not engaged. The process would therefore benefit from having more meaningful early engagement with agencies such as the EPA, FWS, and USACE, as well as Tribes. Front-end loading should address shared needs for baseline information, technical studies, and management or operating plan submissions that are key information used to develop an EIS and that support permits that rely on or tier to that document. For example, the BLM-NV process includes providing baseline reports to local and State agencies for review but does not necessarily share them with other Federal agencies or Tribal governments. This can be problematic where another Federal agency wishes to adopt or

tier to the lead agency's EIS (such as the USACE in issuing permits under section 404 of the CWA, or the FWS in consulting under the ESA) but encounters insufficient information in the EIS. The IWG recommends including EPA, FWS, USACE, other potential cooperating agencies and Tribal governments in the baseline, technical studies, and management plan review steps to allow early input on these draft documents that are critical to tiered NEPA analyses.

3. Develop and publicly share and track project schedules. (P)

Schedule transparency can help promote accountability among cooperating or participating agencies and project proponent, raise awareness of issues that may result in schedule changes, and reduce conflicts related to unavoidable delays. Schedule transparency can also inform the public well in advance of potential comment periods, leading to more carefully and clearly drafted comments. The IWG recommends developing procedures to establish coordinated and transparent environmental review and permitting schedules. Improved coordination will enhance NEPA and permitting schedule discipline in situations where the FAST-41 Dashboard is not utilized. During their review of a mine plan of operations, the BLM and USFS should establish and publish schedules on their websites. The schedules should identify intermediate process steps and target dates for each project. BLM and USFS should establish the timeline for NEPA review and other tiered or related permitting analyses in close coordination with the project applicant and with any cooperating, consulting, and permitting agencies.

The IWG recognizes that new information or changed conditions may necessitate revisions to project schedules and that, in many cases, these changes are outside of agency control. When schedule changes are necessary, the reasons for the changes should be discussed with the project applicant, cooperating agencies, and consulting Tribes. If a schedule is adjusted, changes should be posted to the website, and an explanation should be provided. This updating already occurs under the FAST-41 Dashboard and could improve environmental analysis and permitting efficiency if utilized more broadly.

4. Develop consistent policy and regulations regarding application information requirements. (R, P)

The IWG recommends that BLM and USFS update and standardize, to the maximum extent practicable, their guidance and regulations. Harmonized regulations should more clearly state the information that must be included in exploration plans, mine plans, and related permit applications and NEPA submissions. Updated regulations should aim for consistency between USFS and BLM requirements and capture the full suite of information needed to expeditiously review plans for completeness and prepare for the NEPA and permitting processes.

The IWG recommends development of guidance documents or checklists that include the components and anticipated level of detail needed to support the environmental review and permitting analysis for an exploration plan or mine plan of operations. These documents should include the reclamation plan and supporting waste rock, tailings, and water management plans; likely baseline environmental data needs; the types of environmental modeling that should be used to support predictions of resource changes, including impacts due to climate change; and information to support alternatives analysis. Ideally, one guidance or checklist document could be developed describing the information needed to support NEPA analysis for mineral exploration and mining projects on Federal land for both the USFS and BLM as well as the informational needs of agencies that will tier their analyses to the NEPA analysis. Such guidance would provide early information to applicants as they are developing exploration and mine plans and collecting baseline data, reducing uncertainty for the regulated community. Guidance documents could serve as a foundation for project-specific guidance following the pre-application meeting process.

The IWG recommends that BLM and USFS require that exploration and mining plans do more to identify environmental and cultural values that may be impacted and detail steps to be taken to avoid, minimize, and otherwise mitigate impacts that are unavoidable. Clearer and more consistent requirements for applications, including the potential use of standardized application forms, would reduce the burden on industry and agencies, reduce errors and omissions in applications, and make the review process more efficient. Earlier identification of issues will also facilitate efforts to avoid, minimize, and otherwise mitigate impacts and reduce timelines, since issues identified later will invariably require additional evaluation and consultation.

5. Require pre-application meetings. (R)

The GAO identified incomplete and vague plan proposals as the single most significant challenge negatively impacting the time required to review mine plans and permit applications. Although the IWG recommends that the BLM Nevada process discussed above remain voluntary for applicants, we believe that at least one step of that process, pre-application meetings between the applicant and relevant entities, should be required for all plan submittals. The IWG encourages BLM and USFS to revise their regulations to require pre-application meetings for certain types of applications.

Review of a mining proposal and associated permitting and NEPA documents is usually an iterative process. The level of detail needed in an exploration plan or plan of operations is relative to the complexity of the proposed operation. The first submission by the operator often gives rise to a need for more information to clarify or explain details. These additional details become apparent as the operation becomes more defined. Required pre-application meetings as well as a review of

a draft proposal will minimize delays in processing the proposal. Improving the quality of mine and permit application submissions through pre-application meetings and consistent updated policy and regulations per Recommendation C.4 therefore presents a unique opportunity to accelerate permitting.

6. Include USACE and EPA in pre-application meetings. (P)

Building on recommendation C.2, which encourages the sharing of baseline data with other Federal agencies, the IWG recommends that USFS and BLM consistently invite the EPA and USACE to pre-application meetings, particularly for any project where the BLM or USFS will require a CWA 404 permit. The USACE frequently has a permitting and NEPA role on mining projects, and the EPA reviews all Federal agency EISs while exercising regulatory jurisdiction under the CAA, CWA, and other relevant laws when that jurisdiction has not been delegated to Tribes and States. Early engagement with EPA and USACE can therefore help facilitate the permit and environmental review processes. Early engagement can also foster early identification and resolution of issues that might be more difficult to resolve at later stages of the NEPA or permitting process.

Furthermore, the USACE has an important review responsibility to ensure compliance with the CWA 404(b)(1) Guidelines, ensuring that the proposed project is the least environmentally damaging practicable alternative to the aquatic ecosystem. The USACE often uses NEPA documents prepared by BLM or USFS to support its CWA 404(b)(1) analysis. EPA also frequently relies on the NEPA document to inform its CAA and CWA 404 permit application comments. Therefore, early meetings with USACE and EPA to determine mine plan and baseline data and analysis needs are particularly important for projects on Federal land that will require permits that tier to or adopt analysis contained in an EIS.

7. Prioritize plans that maximize best environmental and social practices. (L, R, P)

To the extent allowable by law, the BLM and USFS should prioritize processing applications for mineral exploration and mining operations that minimize resource impacts, demonstrate compliance with recognized and accepted voluntary standards and best practices to protect human health as well as cultural and environmental resources, strive to achieve beneficial reuse of impacted resources, and demonstrate early and meaningful engagement with Tribes and potentially affected communities. Engagement could include a demonstrated effort on the part of the mining company to obtain FPIC from an affected Tribal Nation, providing funding for Tribal Nations or impacted communities to hire their own technical experts to assist in evaluating exploration and development plans, commitments to make baseline and environmental

monitoring data public, demonstrating a certain level of compliance with an existing voluntary standards framework—such as IRMA, TSM, or another—or adopting other best practices mentioned in this report.

These kinds of practices help to identify and address potential conflicts early on and build local community support, reducing the risk of litigation. Prioritizing projects that have developed robust local support and impact mitigation prior to initiating NEPA or permitting efforts may also reduce the resources the Federal government needs to expend managing public input.

Other agencies, whether through policy or regulation, should also explore opportunities to incentivize these kinds of practices. For example, FPISC may want to consider requiring agreed-upon performance standards as a condition of entry into the FAST-41 process, or the Department of Defense could condition financial support under the Defense Production Act on adherence to specified voluntary standards, or DOE could do the same with loan authority. Conditioning Federal procurement on adherence to best practices, as is done for other products, should also be explored, as recommended in the E.O. 14017 100-Day Reports.

The IWG encourages Federal agencies involved in international engagement to explore opportunities to incentivize these kinds of voluntary practices when developing and administering programs involving international mineral development. Similarly, the United States should use bilateral and multilateral forums to explore opportunities to encourage foreign nations to incentivize these kinds of practices (such as through the State Department's Minerals Security Partnership).

As mentioned in Section IV, the IWG did not assess which of the available voluntary standards frameworks best meets the needs for these purposes. The IWG generally supports the adoption of a standard that is most effective in protecting the entire suite of resources charged to the care of Federal land and resource managers. At a minimum, third-party assessment of company or mine performance against selected standards is essential for achieving public trust and allowing the Federal government to base decisions on the reported level of compliance, with such assessments being conducted in accordance with international guides and standards for conformity assessment and being made available to the public.

The IWG also recommends that Congress consider legislation to support agencies to take the steps discussed above, as well as legislative incentives for companies to engage in these best permitting, environmental, social, and labor practices.

8. Incentivize or require social impact and community benefit planning documents. (R, P)

The IWG agrees with commenters who stated that the socioeconomic and community impacts of mining in the United States are often inadequately analyzed, mitigated, and managed. Consideration of impacts on and benefits to Tribal Nations and potentially impacted communities is generally limited to NEPA and NHPA compliance efforts. Engagement on a plan of operations through either statute is often both too little—in that BLM and the USFS have fewer established tools for mitigation of social impacts—and too late, in that NEPA analysis generally occurs fairly late in the mine development cycle, after significant resources have been committed and when significant changes to operations may be more difficult to implement. The NEPA process is not triggered by the staking of claims or by many exploration-level activities. By the time the mine plan of operation has been submitted, multiple opportunities to collect baseline social information and Indigenous knowledge, maximize benefits, and minimize adverse impacts on Tribes and local communities may have been lost. Extensive pre-NEPA activity that does not include Tribes and communities may also artificially restrict the range of viable alternatives. These kinds of lost opportunities can undermine trust in the proponent, the government, and the regulatory process while increasing the likelihood that projects are litigated.

The IWG therefore recommends that, as a corollary to the previous recommendation, the BLM and USFS should provide incentives or require the development of a Stakeholder or Tribal Engagement Plan, a Social Impact Monitoring and Mitigation Plan, and a Community or Tribal Benefits Agreement.

9. Require the development of a Climate Change Adaptation Plan. (R)

Environmental conditions at a mine site may change considerably during the operational life of the mine. Climate change may make these changes more significant. If not appropriately accounted for, climate change can result in drastic changes to a mine's water balance, which can adversely impact operations and waste and water management infrastructure, including tailings impoundments and water treatment facilities. As stated in one comment letter:

> As part of revised regulations for waste, tailings, and processing facilities, the agencies need to require that proposed operations fully account for future conditions that may result from climate change… Climate change exacerbates the risks and uncertainties associated with hardrock mining. The increasing frequency of extreme weather events, changing temperatures,

and precipitation patterns affect the safety and stability of mining operations and infrastructure.[294]

The IWG agrees and, as such, recommends that the BLM and USFS amend their regulations to require the submission of a climate change adaptation plan as part of a plan of operations. The climate change adaptation plan should detail the resilience of the mine project to climate change and how the operation is prepared to monitor and adapt to foreseeable future climate conditions at the site—including drought and changes in surface and groundwater levels, changes in the frequency and intensity of storm events, and extreme heat and cold events—during operations, reclamation, and post-closure monitoring.

In addition, the IWG recommends that the BLM and USFS evaluate updating risk factors and assumptions in light of the increasing variability and intensity of storm related events and the potential for mining-related facilities remain on the landscape for decades, if not centuries. Planning for a 100-year storm event may, for example, no longer be appropriate in light of increasingly intense storm events.

10. Improve use of cooperating agencies. (P)

The IWG encourages BLM and USFS to take full advantage of NEPA authorities for using cooperating agencies. Agencies should invite and encourage potential cooperating agencies, including States and Tribes, and agencies with regulatory jurisdiction over or special expertise regarding mining, potential environmental impacts, or other aspects of the mining process, to attend pre-application meetings. Cooperating agency meetings and cooperating agency input on preliminary EIS documents, data, and analysis should continue during the NEPA process to encourage information sharing, early issue identification and resolution, coordination across parties, and coordination during concurrent or overlapping analyses and permitting processes.

11. Provide more specific procedures for engaging with communities with environmental justice (EJ) concerns during and outside of the plan approval and NEPA process. (P)

Consistent with E.O. 14096, "Revitalizing Our Nation's Commitment to Environmental Justice for All," which was signed by President Biden on April 21, 2023, the IWG recommends that the BLM and the USFS review their EJ policies and identify additional specific measures not only for implementation during the NEPA process but also to expand these EJ procedures to apply before and outside the NEPA process, including during related permitting actions. Agency guidance should provide instructions for how meaningful involvement will be accommodated at each step of the

[294] *Supra*., note 231

pre-NEPA/planning, NEPA/permitting, approval, and mine administration (operations and closure) processes.

The agencies should develop metrics to define the desired outcomes of meaningful engagement with communities with EJ concerns for mining on Federal lands as well as methods to track progress towards implementation of this goal. Policies should also ensure the ongoing involvement of communities with EJ concerns, where applicable, after a mine starts operations.

These policies can include requirements for operators to identify methods for outreach to local communities in all appropriate languages, to develop plans for regular communications with local communities throughout approval and operations, and to work with local communities to identify and address their concerns.

12. Develop more inclusive policies for stakeholder engagement. (P)

As discussed under section VII.B, many communities expressed their belief that narrow definitions of the term "stakeholder" are used to exclude them from participation. The IWG recommends that the agencies develop policies to ensure the inclusion of diverse communities during stakeholder outreach and engagement, including: (a) environmental justice communities; (b) Justice40 and underserved communities; (c) area residents; and (d) those who rely on or use the potentially impacted resources.

13. Maintain a forum for interagency Federal mine permitting experts. (P)

With the completion of this report, the IWG has completed its work, but the IWG believes the interagency, intergovernmental, Tribal, and stakeholder engagement promoted by the IWG should be continued moving forward through existing interagency efforts. Such a forum would allow for lesson and information sharing in implementing selected recommendations from this report (particularly those related to guidance development and interagency coordination) and could act as a resource for the FPISC when questions arise regarding mining projects requesting inclusion on, or already included on, the FAST-41 Dashboard.

As an example of similar interagency coordination on mining issues, Federal agencies involved in activities related to remediating contamination, addressing safety hazards, and minimizing pollution from abandoned and inactive mining and mineral processing sites (including DOI and its bureaus, plus USDA, EPA, DOE, USACE, DOL, DOJ, Office of Management and Budget, and others) regularly meet under the Federal Mining Dialogue to share lessons learned and work through technical and policy issues pertaining to mine cleanups. The Dialogue has been successful and

valued by the Federal agencies, and an analogue to the Dialogue could be created to focus on proposed mines and the mine permitting process.

14. Promote a Circular Economy. (P)

The IWG supports an increased emphasis on policies designed to build and strengthen a circular economy. "Circular economy" refers to a system of production, use, and eventual disposal that keeps materials, products, and services in circulation for as long as possible. A circular economy works by reducing material use, redesigning materials, products, and services to be less resource intensive, reusing materials to the maximum extent practicable, and recapturing and recycling waste streams and products as a resource to manufacture new materials and products. Circular economies demonstrate continuity in our emphasis on reducing negative lifecycle impacts of processes and materials, including climate impacts, reducing the use of harmful materials, decoupling material use from economic growth, and meeting society's needs. Circular economies also provide economic opportunities for innovative companies and individuals.

The IWG believes that Federal efforts to evaluate impacts that are likely to result from mineral exploration, production, processing, and refining, or reclamation—including decisions to authorize or support mineral exploration, production, processing and refining, or reclamation—should aim to minimize waste, including the generation of waste and byproducts requiring treatment and disposal; advance pollution prevention; support requirements to recycle and markets for recycled products; and promote a transition to a circular economy. The IWG encourages Congress and Federal agencies to adopt policies that promote a circular economy, and to evaluate the extent to which actions that are authorized, funded, or carried out by the Federal government promote a circular economy.

D. Increasing Transparency

As discussed in Section VII of this Report, much of the effort that occurs from the acquisition of mineral rights, through exploration, development of the mine plan of operation, mining, and reclamation occurs outside of public view. The IWG developed the following recommendations to improve public information sharing and engagement throughout the entire lifecycle of a mine to maintain and build trust in the government's oversight of mines developed, operated, and remediated on Federal land. The IWG believes that early engagement and information sharing will lead to faster and better decisions that are less likely to result in litigation.

1. Create a Mining and Mine Permitting Presentation or Guide to improve public understanding of mining and the mine approval/NEPA/permitting process, and post on applicable agency websites. (P)

During an IWG listening session, one mining company noted that it is far more effective to bring communities along and keep them informed rather than engage only at key points in the NEPA process. As the company noted, the need for ongoing public engagement is particularly important when project milestones are months or even years apart. Building public knowledge of mining and mine permitting will help support meaningful public engagement by educating the public early and helping support and focus the public when they are involved in engagement opportunities on specific projects. The BLM and USFS websites include links to laws, regulations, and policy papers. However, neither provides an explanation or informational material about what exploration or mining involve, the mineral operations approval process, Federal versus State agency roles, or how the public can be involved. Informational materials should be prepared, ideally jointly between the agencies, explaining mining (process, impacts, and benefits), and these explanatory documents should be added to the BLM and USFS websites. This could be a PowerPoint, a series of pre-recorded webinars, or something like the Citizens Guide to NEPA,[295] or the ACHP's Citizen's Guide to Section 106 Review,[296] but for mining operations. The Washington State Governor's Office for Regulatory Innovation & Assistance has developed multiple permitting schematics that clearly describe analytical and permitting processes and opportunities for public engagement. These schematics may provide a valuable model for helping agencies educate the public about complex review processes and for communities to understand and navigate complex processes.[297] The BLM oil and gas "gold book" of surface operating standards and guidelines for oil and gas exploration and development has also been suggested as a potential model that may be worth replicating for hardrock mining.[298]

[295] White House Council on Environmental Quality, "Citizen's Guide to the National Environmental Policy Act," Jan. 2021. https://ceq.doe.gov/get-involved/citizens_guide_to_nepa.html.

[296] Advisory Council on Historic Preservation, Protecting Historic Properties: a Citizen's Guide to Section 106 Review, no date, www.achp.gov/sites/default/files/documents/2017-01/CitizenGuide.pdf.

[297] Washington Governor's Office for Regulatory, Innovation, and Assistance, "Environmental Permit Schematics: Visualize the Permit Process." https://www.oria.wa.gov/site/alias__oria/405/environmental-permit-schematics.aspx.

[298] Bureau of Land Management & U.S. Forest Service, "Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development," 2007. https://www.blm.gov/sites/blm.gov/files/Gold%20Book%202007%20Revised.pdf.

2. Develop a user-friendly website that enables the public to easily see and identify all proposed, operating, reclaimed, and unreclaimed mineral exploration and production operations in a given area. (P)

Both the BLM and USFS's websites provide expert users access to a great deal of information on mining. However, those websites are not intuitive, and the information they provide is often difficult, if not impossible, for casual users to access and use.

The IWG recommends establishing a website to serve as a single point of contact for compiling and disseminating public information on mining operations, including notice-level operations, and to provide a way for people to receive notice when mining related notices or plans are received in a given geographic area. Activity-specific information should be entered when a notice or plan of operation is received, including the permitting schedule. Similar to the tracking of infrastructure projects under FAST-41, changes to the schedule should be published, and the reason for delays should be recorded and explained.

For operating mines, the website could include the current mine operating plans, including supplemental reports, the reclamation plan, financial assurance information, mineral production data, environmental monitoring data (such as air and water quality), and environmental metrics (such as amounts and compositions of waste rock, wastewater, gas and dust discharges and emissions, land disturbance, and other relevant indicators) in an easily understood, machine-readable format. The website should be continually updated to reflect updated plans, inspection dates, and findings. Additional data layers, such as habitats for ESA-listed and other high-interest species, mineral withdrawals and other special land designations, agency jurisdictional boundaries, and more, could also significantly aid in providing context and valuable information to the public. This website must include appropriate protections for proprietary information.

Federal agencies have insufficient resources to catalog all abandoned mines on public lands. If funds were made available, mapping abandoned and legacy operations, with appropriate protections for public safety, could provide operators with an opportunity to co-locate and site new development on brownfields, reducing impact and offering an opportunity for remediation. In addition, mapping could help Good Samaritans and others prioritize reclamation efforts.

3. Amend Interior and USFS regulations to expand notice level (and exploration and mine plan) review time and notification requirements. (R, P)

The IWG believes that the current processes for notice-level operations provide inadequate public notice and opportunity for comment or engagement. Notice-level operations can create or

exacerbate conflict because these operations are not subject to NEPA, and therefore not noticed to the public through existing NEPA processes. Potentially affected parties may therefore only learn of these operations when they see activity commence. A number of comments suggested that it would be useful to make notices more accessible to the public and to extend the time the BLM has to review notices from 15 days to 30 days. Environmental groups strongly support ending notice-level operations altogether, given they are not subject to NEPA or NHPA consultation requirements.

The IWG recommends that the BLM extend the time for review of exploration notices from 15 days to 30 days and that, upon receiving an exploration notice, it inform potentially impacted Tribes and communities of the pending action. The 30-day period would allow greater opportunities for engagement, issue identification, impact reduction, and mitigation development. BLM should also extend the review time for the mine plan of operations to 60 days. Existing time periods are extremely short in the context of the whole mine permitting timeline, yet they provide important opportunities to identify and mitigate issues and concerns that could cause lengthy delays later if not addressed proactively.

The IWG also recommends that the USFS amend its regulations to require bonds and reclamation plans for notice level activities that do not cause significant surface disturbance, and allow more of those projects to move forward without needing plans of operation. We also suggest that the USFS require public and Tribal notification of all non-casual-use applications received, regardless of size or disturbance level, in a manner similar to the recommendation to BLM on notices.

4. Make compliance performance records available to the public. (P)

Incentivizing conscientious mineral development activities can provide a useful complement to regulatory action. The IWG believes that the compliance record of any entity with significant involvement in mineral exploration, production, processing, upgrading, site reclamation, or other components of mining operations should be available to regulatory agencies, Tribal governments, State and local governments, local communities, and the public at large as exploration and development proposals are being considered and after operations commence. This information should be included as part of the public mineral website referenced above, and links should be provided to the applicable regulatory agency where compliance information can be obtained. Mining operations are also associated with other permits, such as those for water use, water discharge, water disposal, and hazardous waste disposal. Having all the information linked and in one place would provide a comprehensive view of a project.

E. Tribal Recommendations

The IWG developed a number of recommendations to improve Tribal engagement and consultation for mining projects on Federal land. Background relevant to these recommendations is in Section VIII of this Report.

1. Enact legislation to require meaningful, robust, and early consultation between the Federal government and Tribal governments. (L)

Congress should enact legislation that establishes clear legal standards for consultation on all infrastructure projects, but in the case of mining, it should at minimum:

a. Require adherence to consultation practices—such as those outlined in E.O. 13175, the White House Memorandum on Uniform Standards for Tribal Consultation, and DOI's Tribal Consultation policy and procedures—for agency actions on hardrock mining proposals that may have Tribal implications;
b. Include consensual mechanisms or a consensus-seeking model for developing regulations that relate to Tribal self-government, Tribal trust resources, or Tribal Treaty and other rights that apply to Federal government actions regarding mining with Tribal implications, whether on Indian land or not, and the full range of impacts from such actions;
c. Require agencies to make good-faith efforts to invite Tribes to consult early in the planning process and throughout the decision-making process and engage in robust, interactive, pre-decisional, informative, and transparent consultation when planning actions on hardrock mining with Tribal implications;
d. Strengthen measures to prevent or discourage agency failure to conduct proper formal consultations with Tribes on agency actions with Tribal implications, including, but not limited to consultations under the NHPA, Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, and NEPA; and
e. Provide exemptions from disclosure under Freedom of Information Act requests to protect sensitive, specific information on burial or religious locations that contain human remains or objects, or on sacred sites; to prevent grave-robbing, vandalism, and other disturbances on religious or sacred sites; and to protect Indigenous Knowledge that is shared with Federal agencies during the planning, environmental review, and permitting processes.

2. Improve Agency Consultation Procedures and Training. (P)

Federal agencies with permitting authority over any aspect of hardrock mineral exploration or mining—whether on or off Federal lands—should develop Tribal consultation policies and training on those policies consistent with the November 30, 2022 Presidential Memorandum on Uniform Standards for Tribal Consultation.

Consultation policies should require government-to-government consultations on potential hardrock mining impacts on off-reservation treaty reserved rights, subsistence rights, sacred and cultural resources, including submerged sites, and use of Indigenous Knowledge during the mine permitting and NEPA processes.

But these processes will not be fully effective until training is robust and regular and there are sufficient resources for staff to understand best practices and implement those actions. Having stand-alone Tribal consultation offices at BLM and the USFS will be key to successfully integrating these actions.

3. Provide adequate resources for Tribal consultation. (L)

The IWG recommends that Congress ensure that Federal agencies have adequate resources to carry out Tribal consultation obligations and establish a program to provide funding to Tribal governments to allow those governments to more meaningfully engage in consultations and to reimburse costs incurred by Tribal governments during consultations. Some examples of this practice that could be built upon include FIPSC providing resources to Tribes to facilitate consultation on FAST-41 projects[299] and EPA providing funding for communities looking to intervene in superfund cases.[300]

4. Issue new policy guidance on NHPA implementation. (P)

The IWG recommends that the BLM and USFS issue policy guidance on NHPA with more specific language on the importance of individual Tribes' cultural heritage resources and the impacts of their loss, as well as details about existing Treaties, such as the information found on the Tribal Treaty Database.[301] As one commenter indicated, "to know one tribe is to know only one tribe."

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[299] Permitting Council Press Office, "Federally Recognized Tribes Receive Groundbreaking Investment to Aid in FAST-41 Covered Infrastructure Project Permitting Reviews," Dec. 2022. https://www.permits.performance.gov/fpisc-content/federally-recognized-tribes-receive-groundbreaking-investment-aid-fast-41-covered.

[300] U.S. Environmental Protection Agency, https://www.epa.gov/superfund/technical-assistance-grant-tag-program.

[301] Oklahoma State University Libraries, https://treaties.okstate.edu/.

Much of the existing guidance does not effectively reference the different cultures of different Tribes. Application of this new policy guidance would create an increased sense of awareness of the diversity of different Tribal Nations, even within the same affected areas. New policy guidance that is more specific to individual Tribes can enhance awareness about a Tribe's treaty and reserved rights, which can include potential rights to access, hunt, fish, gather, and practice their culture in a specific area, among other things, and lead to new commitments to providing the statutorily required technical and financial assistance opportunities that Tribes can use to expand their historic preservation programs. This will facilitate information sharing between Tribes and the Federal government regarding cultural resources, so future consultations can run more efficiently.

Current funding is insufficient to assist Tribes in their efforts to support the implementation of the NHPA. In addition to increasing funding for federal agencies specific to reimbursing Tribes for their expertise and the costs incurred for helping federal agencies carry out 106 responsibilities, Congress should increase Historic Preservation Fund funding for Tribal Historic Preservation Offices to ensure important areas are identified in advance and avoided. Congress should also make funding available to Tribes that are not eligible to have or who otherwise do not have a Tribal Historic Preservation agreement with the NPS. Tribes must have land in trust or a reservation in order to be eligible for annual Historic Preservation Fund resources to support their Tribal Historic Preservation Officer. Today, under half of federally recognized Tribes have such an agreement but still maintain the same role in the Section 106 process reviewing undertakings off of current Indian lands.

5. Provide additional protections for Tribal cultural sites, sacred sites, and resources. (L, R)

The IWG recommends that Congress create statutory incentives encouraging mining interests to make sincere and meaningful efforts to obtain Tribal concurrence or support before undertaking exploration or production projects that may significantly impact Tribal cultural and sacred sites. In instances where Indian Tribes are consulted and the Tribe does not consent, the withheld consent should be documented, and Federal agencies should consider imposing additional stipulations or conditions to ensure that, to the maximum extent possible, the mining operator mitigates adverse effects, if any, on the Indian lands and resources.

The IWG also recommends that BLM and the USFS consider adding protections in their mining regulations specific to Tribal sites and resources, such as including a new performance standard at 43 C.F.R. § 3809.420 (BLM) and 36 C.F.R. § 228.8 (USFS).

6. Develop a system for automatic Tribal notification when notices or plans are proposed in an area of Tribal interest. (P)

The IWG recommends that the BLM and USFS develop a system analogous to the Federal Communication Commission's Tower Construction Notification System, which alerts Tribes when companies propose to erect a communications tower on land of interest to that Tribe.[302] This system allows Tribes to confidentially indicate areas of geographic interest and then receive notifications when a communications tower is proposed for those areas. In the context of mineral exploration and mining, Tribes would be notified when notices or plans are received in an area identified as posing interest to a Tribe. Tribes should be engaged in the development of this system to ensure that it meets Tribal needs and provides adequate safeguards for confidential Tribal information. The National Association of Tribal Historic Preservation Officers is currently working on a database that includes some of this functionality, and the IWG encourages the Federal government to engage more closely with this Tribally-led effort to determine if it can provide lessons or a foundation for additional Federal efforts.[303]

The IWG notes that this system could be useful across numerous infrastructure and permitting applications—far beyond communications towers and mining operations—and encourages engagement with other relevant agencies in its development.

7. Require exploration plans instead of notices when operations would impact Tribal resources or treaty rights, listed species, etc. (R).

The IWG recommends that the BLM and USFS update the types of activities and impacts that do not qualify for notice-level operations to include activities that impact Indian Tribes or resources reserved by treaties with those Tribes, require a CWA permit, impact Federally protected species or designated critical habitat, or may impact sites that are listed on or eligible for listing under the NHPA, including sites of religious or cultural significance to Tribes. That level of impact should require the submission of an exploration plan or plan of operations.

8. Incorporate Indigenous Knowledge (IK) during the environmental and permitting review for an exploration plan, mine plan of operations, or associated permit (P).

The IWG recommends that the BLM and the USFS issue guidance to ensure that IK is consistently included and considered, as appropriate, in decision making, in line with the November 30, 2022

[302] "Tower Construction Notifications." https://www.fcc.gov/wireless/systems-utilities/tower-construction-notifications/tower-construction-notifications-0.
[303] National Ass'n of Tribal Historic Preservation Officers, Land Area & Name Directory, https://www.nathpo.org/land-approach/.

OSTP/CEQ memo. This guidance should articulate how potentially sensitive IK is to be collected, treated, and protected, as appropriate, through consultation, environmental review, historic preservation review, and permitting processes.

9. Invite Tribes to participate as cooperating agencies in the NEPA process. (P)

The IWG recommends that Federal agencies encourage the inclusion of Tribes with a current or historical presence or interest in potentially impacted areas as cooperating agencies during the NEPA process. This recommendation is in addition to engaging with all impacted Tribal entities in fulfillment of consultation obligations.

10. Include Tribes in pre-application meetings, and allow Tribes to review baseline information in updating and expanding the BLM Nevada permitting process. (P)

Elsewhere in this report, the IWG recommends broader adoption of the Nevada BLM's approach to mineral development permitting. The BLM Nevada process, however, does not specify that baseline information should be shared with Tribes. The IWG recommends that in updating and nationalizing this process (recommendation C.1), the BLM and USFS encourage potentially impacted Tribes to provide baseline information, including IK, and review draft baseline data that Tribes have an interest in before the baseline data is finalized. That will help ensure that baseline data includes IK and information important to Tribes and Tribal resources to support meaningful analysis of impacts on Tribes during the NEPA process.

11. Include Tribes in the determination of appropriate financial assurance levels and post-mining land use. (R)

The IWG recommends that, in areas where Tribes or the Federal agency identify cultural or subsistence resources connected to any Tribe, the appropriate agency should make every effort to include those Tribes in discussions about desired post-mining land uses. The IWG recommends that these discussions occur during the NEPA process as well as during reclamation plan updates, and that discussions give Tribal Governments an opportunity to provide meaningful input into the adequacy of reclamation plans. Reclamation plans and financial assurance amounts for all mines should also be made easily available to the public (see recommendation D.2). The IRMA Standard requires similar engagement on reclamation plans and financial assurance levels with all potentially affected communities and interested stakeholders.[304]

[304] *Initiative for Responsible Mining Assurance*, IRMA Standard Chapter 2.6.2.5 and 2.6.4.5., "Planning and Financing Reclamation and Closure." June 2018, pp. 72-73. https://responsiblemining.net/wp-content/uploads/2018/07/IRMA_STANDARD_v.1.0_FINAL_2018-1.pdf.

12. Provide funding to Tribal Governments to allow them to more effectively engage in reviews of mining proposals and shared monitoring of operating mines. (L, P)

The IWG supports providing appropriated funding to allow Tribes to attend meetings, retain technical experts, review mine plans, conduct studies, produce reports, and more. This will strengthen Tribes' capacity to participate in the NEPA and permitting processes during consultation and as a cooperating agency. Canada's Indigenous Natural Resource Partnerships Program is a model that Congress can consider replicating domestically. Another potential model Congress could explore for providing community support is the Technical Assistance Grant program under CERCLA. Although that program is not used to meet the goals of this action and is for sites that are already contaminated, not for proposed operations, the precedent and mechanism are valuable to consider.

The IWG also recommends that Federal agencies use existing authorities to provide funding or technical assistance to Tribes for the same purposes. One positive effort is the recent announcement by FPISC that it will set aside $5 million for Federally recognized Tribes to enhance Tribal engagement in the permitting review and authorization process for FAST-41-covered projects.[305] If successful, this and other efforts should be expanded in both the amount of funding, and the scale and scope of projects covered.

The IWG also encourages operators to provide financial assistance to impacted Tribes and communities for the review of plans and oversight of mining operations. Assistance should be provided without effecting the conclusions made or positions taken by any Tribe. This is a component of the IRMA Standard,[306] a commitment of ICMM member companies,[307] and is taking place at certain mines in the U.S., such as with the Community Environmental Monitoring Program funded by Eagle Mine.[308]

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[305] *Supra*., note 300

[306] *Initiative for Responsible Mining Assurance*, IRMA Standard Chapter, 1.2.3., "Community and Stakeholder Engagement Requirements Strengthening Capacity," June 2018, pp. 22. https://responsiblemining.net/wp-content/uploads/2018/07/IRMA_STANDARD_v.1.0_FINAL_2018-1.pdf.

[307] ICMM Indigenous Peoples and Mining Position Statement, Commitment 3 ("Where required, support should be provided to build community capacity for good faith negotiation on an equitable basis.").

[308] *Supra*., note 191

13. Encourage additional Federal and private sector support for Tribally-led assistance organizations. (L, P)

Direct government or proponent assistance to Tribes to cover consultation or technical review costs is only a start. The IWG believes that greater trust and larger and more durable benefits can be achieved through the growth of independent Tribally-led organizations that advocate for and provide assistance to Tribes that are confronted with mining proposals that may impact their lands, resources, practices, or rights.

One example of such an organization, the FNMPC (described in more detail in section VIII.D), seeks to assist Canadian First Nations obtain equity stakes in mining projects, a model the IWG believes should be encouraged in the United States, when desired by Tribes, as a way to ensure that financial benefits from mining projects also flow to impacted Tribes in a more significant and durable way than through Tribal Benefit Agreements. Other Tribally-led organizations focused on providing technical and financial resources to U.S. Tribes include the First Nations Development Institute,[309] the Tribal Lands Assistance Center,[310] and The MICA Group,[311] and the IWG believes that organizations and efforts such as these should be encouraged.

The IWG believes that the fact that these organizations are Tribally-led is key to their credibility and effectiveness, and that they perform a role that cannot be replicated by the Federal government, despite the tremendous value and importance of Federal Tribal assistance efforts. The IWG encourages Federal agencies, Congress, mining companies, philanthropies, and others to—when and as appropriate—partner with, provide support for, or encourage the development of such organizations.

F. Operational Standards

The IWG has several recommendations for updating operational standards in BLM and USFS regulations to promote national consistency for mining on Federal lands, provide clarity to the mining industry, and incorporate best practices for the protection of surface resources. Section IV.B. of this Report provides relevant background.

[309] First Nations Development Institute, https://www.firstnations.org/.
[310] Tribal Lands Assistance Center, https://triballands.org/.
[311] The MICA Group, https://micagroup.org/.

1. Require adherence to the Global Industry Standard on Tailings Management (GISTM). (R)

Many companies, including all members of the ICMM, adhere to the Global Industry Standard on Tailings Management (GISTM) or other standards for tailings management, and the IWG agrees with the industry comment letter that stated, "The application of the [GISTM] would substantially improve the management standards across the industry for tailings in the U.S."[312] Because of the devastating impacts that can occur from tailings dam failures and other incidents that may occur during operations or reclamation, and because many tailings dams require maintenance and monitoring in perpetuity, the IWG recommends that BLM and USFS require that mining operations on federal land, at a minimum, comply with the GISTM and develop tailings management plans that incorporate best practices for operation and closure, conduct risk and failure assessments for tailings dams, and require independent engineering review of tailings facilities during design, operations, and closure. The IWG recommends that BLM and USFS update their requirements for tailings operations and performance standards to require these and other best practices to promote the highest level of protection against tailings incidents that could significantly impact surface resources and downstream resources, including Tribes and communities.

2. Improve the standard of care and provide consistency in Interior and USFS regulations. (R)

The IWG recommends that the BLM and USFS review their mine plan of operation requirements (see also recommendation C.4) and performance standards and modernize those standards and requirements for consistency across agencies. Updated requirements and standards should take into account current best regulatory practices for water, waste, and tailings management, environmental restoration by qualified persons, and also include climate change considerations (see also recommendation C.8). This can be done by modernizing the USFS Mining Regulations, which were last substantially updated in 1974. BLM should consider more narrow updates to its mining regulations to take into account best practices since they were last updated in 2000.

In addition, there are areas where the performance standards could be made clearer. For example, the USFS's general standards for mitigation are vague and may be applied inconsistently. Greater protection could be achieved by adopting consistent protective requirements across both agencies. The BLM requires operators to "take mitigation measures specified by BLM to protect public lands," while the USFS requires that operations minimize adverse impacts to the extent feasible. The BLM requires concurrent reclamation and requires source control as a preference for managing acid-forming, toxic, or other deleterious materials. The USFS requires reclamation

[312] BHP Corporation's Response to Request for Information to Inform IWG on Mining Regulations, Laws, and Permitting, 2022.

upon the earliest practicable time during operations, or within one year of the conclusion of operations, including isolation, removal, or control of toxic materials. One mining company commented that adherence to the Global Acid Rock Drainage Guide to minimize acid mine drainage could provide additional environmental protections.[313]

Specifically, the IWG recommends that the BLM and USFS update their regulatory definitions and standards, consistent with their applicable authorities, to include additional specifications as to what qualifies as UUD or significant disturbances.

3. Improve enforcement resources, authorities, and tools. (L)

Several commenters identified a need for improved inspection and enforcement of hardrock mining operations to ensure compliance with existing environmental standards and reclamation goals. Other comments highlighted the need for the BLM and USFS to increase the numbers of mineral professionals, principally to increase capacity for permit processing but also to ensure proper inspection and monitoring of operations. One comment advocated for BLM and the USFS to establish "document control systems" to contain all documents related to a mining operation, including inspection, monitoring, and enforcement documents, and to make this information publicly available so that the public has awareness of the compliance of mining operations and impacts on Federal lands; this was also discussed at recommendation D.4.

The 1999 National Research Council report recommended that Federal land managers in the BLM and USFS should have both: (1) authority to issue administrative penalties for violations of their regulatory requirements, subject to appropriate due process, and (2) clear procedures for referring activities to other Federal and State agencies for enforcement. The Council's report stated that more consistent and accessible procedures for deciding when to refer apparent violations to other agencies and the ability to issue reasonable administrative penalties, subject to appropriate due process, would improve the efficiency of agency operations and enhance the protection of the environment.

Interior amended its regulations in 2000 to provide for administrative penalties. However, a subsequent review led to BLM removing the civil penalty provisions from its regulations in 2001. The IWG believes Congress should grant BLM and USFS unambiguous authority to administer civil penalties to improve and assist in effective enforcement of operational standards.

[313] Albemarle Corporation's Response to Request for Information to Inform IWG on Mining Regulations, Laws, and Permitting, 2022.

G. Mine Closure & Closed Mines

All mines, at some point, will close. Having a science-based reclamation and closure plan in place paired with sufficient financial assurances will build trust that mining can be conducted safely and effectively and the landscape properly restored at the end of operations. However, widespread legacy contamination exists despite extensive remediation efforts by the EPA, other Federal agencies, and State agencies. Reclamation and remediation can be difficult and take long periods of time, particularly in the absence of adequate resources to address sites where no responsible parties remain. As mentioned above (Recommendation C.13), Federal agencies meet regularly at a national level to leverage expertise, coordinate, and share experiences to more efficiently prioritize and remediate mine sites on Federal lands. However, there are an extensive number of abandoned mine sites on Federal lands, far more than current Federal agency resources can address. Further information regarding estimated numbers of AML and environmental impacts from mining can be found in the March 2020 GAO Report: *Abandoned Hardrock Mines: Information on Number of Mines, Expenditures, and Factors that Limit Efforts to Address Hazards.*[314]

1. Enact Good Samaritan protections. (L)

Federal agencies lack the resources needed to address the multi-billion-dollar liability created by legacy abandoned mines. Inadequate Federal funding makes cooperation with Tribes, States, industry, and NGOs critical to addressing sometimes severe and ongoing hazards. EPA has developed Good Samaritan policies and tools to reduce barriers under CERCLA for Good Samaritans to clean up abandoned hard rock mines. However, even with this extensive guidance and administrative direction, many NGOs and companies are not interested in engaging in reclamation without legislation to clarify liability for potential mine discharge during or after reclamation. Good Samaritan treatment of ongoing mine discharges was identified as a promising opportunity by the GAO, as well as a wide range of groups commenting to the IWG, ranging from environmental organizations to State governments to the mining industry itself.[315] As the GAO explained:

> Good Samaritans have avoided taking certain cleanup actions—in particular, addressing mine tunnels that perpetually drain highly contaminated water—at abandoned hardrock mines because they are concerned about potentially being held legally responsible under CERCLA [the Comprehensive Environmental Response, Compensation, and Liability Act or Superfund] and the CWA. Specifically, a Good Samaritan undertaking cleanup actions at an abandoned hardrock mine might become

[314] *Supra.*, note 10, p. 1.
[315] *Id.*

> a responsible party under CERCLA and thereby would be responsible for the entire cost of cleaning up the site…. Colorado and Montana state officials and various stakeholders said they generally decide not to undertake such projects, even if they could make incremental improvements, because of the risk of being held responsible for meeting and maintaining water quality standards in perpetuity.[316]

As one industry association noted, "[t]hese liability concerns affect numerous stakeholders—local communities, conservation groups like Trout Unlimited, and mining companies alike."[317]

The IWG recommends that Congress enact Good Samaritan legislation, limiting liability for non-responsible parties who seek to characterize, assess, and cleanup abandoned mine sites, subject to appropriate safeguards. Good Samaritan laws should provide for public review and comment on remediation proposals, exclude entities that were previously involved in operations at the contaminated site, prevent liability waivers from being provided for operations that are not related to addressing the legacy site, and require Tribal consultation on any proposals that could impact Tribal lands or resources. The IWG agencies are willing to work with Congress to ensure that any legislation maximizes intended benefits while not creating unintended impacts or conflicts with other laws and regulations.

2. Encourage remining and reprocessing of previously disturbed sites. (L, P)

The IWG recognizes that, in addition to acting as Good Samaritans, mining companies may seek to conduct operations on previously mined sites in order to conduct profitable activities, such as reprocessing waste rock or mill tailings to capture valuable minerals. As an industry commentor explained, "[s]ome historic, pre-regulation mine sites still contain mineral resources…. Modern mining at a historic site creates an important opportunity to integrate the cleanup and remediation of historic, un-reclaimed mine features into a modern mine designed to protect the environment and achieve conservation objectives."[318]

Where operations would occur on abandoned mine lands, remining or reprocessing may present an opportunity to address existing contamination and ongoing pollution discharges. If there is potential for recovering valuable materials, interested parties should work with appropriate regulators to evaluate legal options, such as Bona Fide Purchaser Agreements or State Voluntary Cleanup Programs, to conduct cleanups. Some Federal support for reprocessing is already occurring. For example, the USGS has made BIL funding available for States to identify and

[316] *Id.*
[317] *Supra.*, note 109
[318] *Id.*; See also, *Supra.*, note 181

characterize mine waste sites for the USGS mine waste inventory,[319] and DOE recently announced $16 million to build a refinery for critical minerals extracted from acid mine drainage,[320] building on DOE's pre-existing research support for such efforts.[321]

The IWG recommends that BLM, USGS, OSMRE, USFS, DOE, EPA, and other relevant agencies investigate any regulatory or other barriers to more widespread reprocessing of mine waste in situations where there is the potential for positive environmental outcomes coupled with enhanced recovery of needed minerals. Congress should consider legislation to reduce barriers that cannot be addressed administratively, provided sufficient safeguards are included to ensure local communities are engaged in the development of reprocessing proposals and positive environmental outcomes are achieved. As comments also noted, re-mining should only be an option available to companies that were not involved in prior mining activity at that site.

3. Prohibit mine operations that would result in the need for perpetual water treatment. (L)

The IWG recommends that Congress prohibit any new mine operation that is likely to require perpetual treatment of water relating to any aspect of mining operations, except under certain narrow circumstances, such as those allowed by the IRMA Standard.[322] Such a statute would align with requirements adopted by Colorado[323] and New Mexico[324] allowing for operations that require perpetual treatment in only limited circumstances. Avoiding perpetual water treatment obligations would further both agencies multiple-use and sustained-yield mandates, dramatically decrease the risk of UUD, and reduce potential future public financial liability for perpetual mining-related releases.

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[319] U.S. Geologic Survey, "USGS makes $5 million available from the Bipartisan infrastructure Law for mine waste research," February 14, 2023. https://www.usgs.gov/news/national-news-release/usgs-makes-5-million-available-bipartisan-infrastructure-law-mine-waste.

[320] U.S. Department of Energy, "Biden-Harris Administration Invests $16 Million to Build America's First-Of-A-Kind Critical Minerals Production Facility," April 4, 2023. https://www.energy.gov/articles/biden-harris-administration-invests-16-million-build-americas-first-kind-critical-minerals

[321] See, for example, U.S. Department of Energy, "DOE Awards $19 Million for Initiatives to Produce Rare Earth Elements and Critical Minerals," April 29, 2021.

[322] Initiative for Responsible Mining Assurance, "IRMA Planning and Financing Reclamation and Closure" in *IRMA Standard for Responsible Mining*. June, 2018, Chapter 2.6.6., pp. 69. https://responsiblemining.net/wp-content/uploads/2018/08/Chapter_2.6_ReclamationClosure.pdf.

[323] Colorado HB19-1113 - Protect Water Quality Adverse Mining Impacts.

[324] New Mexico Mining Act at Chapter 69 - Mines, Article 36 Section 69-36-12-B.

4. Strengthen review of mines left in extended non-operating status. (R, P)

Numerous commenters urged Federal action on mines that remain in non-producing status for an extended period. The 1999 National Research Council report recommended that the BLM and USFS "adopt consistent regulations that a) define the conditions under which mines will be considered to be temporarily closed; b) require that interim management plans be submitted for such periods; and c) define the conditions under which temporary closure becomes permanent and all reclamation and closure requirements must be completed."[325] The BLM has regulations requiring review of operations that have been inactive for 5 years, but the USFS does not, and commenters stated that BLM has been inconsistent in how it implements its regulations. The IWG recommends that both agencies update their regulations and practices as needed to provide for regular review of mines placed in non-producing status, ensure that interim management plans are being followed as intended, and consider requiring companies to update plans of operation after a certain period. The IWG also recommends that financial assurances be evaluated and adjusted, as appropriate, to ensure that sufficient funds are available to cover reclamation costs should non-producing operations fail to return to production.

5. Enact reforms to financial assurances laws. (L)

The IWG recommends that Congress address the following shortcomings of current financial assurance requirements through legislation:

(a) Bankruptcy exception for reclamation bonding and trusts.

Currently, many courts hold up the disbursement of financial assurance while bankruptcy proceedings are ongoing. The government expends significant time and resources ensuring courts honor the nature of the financial assurance instruments and that those funds remain available to complete the reclamation when companies declare bankruptcy. The IWG recommends that Congress expressly exempt financial assurance bonds or trusts for reclamation and other government-required environmental work from bankruptcy to limit the time and effort agencies spend in litigation, to prevent the lengthy delays that can occur in beginning reclamation when funds are tied up in litigation, and to minimize the risk that reclamation obligations will fall on the shoulders of the American taxpayer. This should not be done just for mines but for all environmental remediation, including oil, gas, RCRA, and CERLCA financial assurances.

(b) Tax umbrella or exemption.

[325] *Supra.*, note 55, p. 8.

Mine operations frequently use long-term financial mechanisms (LTFMs) to cover the cost of post-mine closure requirements, such as long-term water treatment. An LTFM is designed to generate annual interest that covers capital and operating expenditures for continued treatment. However, accurately determining LTFM levels is difficult given the year-by-year nature of tax codes. If taxes are estimated incorrectly, the interest may not be enough to cover the annual funding requirement, and part of the principal would need to be used to cover the deficit. This shortfall would be amplified when combined with the discount rate estimations used for net present value calculations. The result is that the LTFM may not be able to cover the post-closure requirements for the duration needed for adequate treatment. Specific legislation for trusts that are established for the continued funding of long-term Federal land reclamation should be created to either allow these trusts to receive a set tax amount at the time of trust establishment or to make the LTFM tax-free.

(c) Authority to relinquish excess bonding from defunct companies to a reclamation fund.

The IWG recommends that Congress enact legislation directing any financial assurances remaining after completion of all necessary reclamation and remediation work performed on behalf of an operator who filed for bankruptcy to be deposited into a fund to support reclamation and remediation of AMLs that are subject to funding shortfalls. In cases where the government has completed reclamation on behalf of a bankrupt operator and there are remaining financial assurance funds, under Interior regulations, the unused portion of the funds are returned to the party from whom the funds were collected. Returning unused funds to insolvent or absent operators is complicated and resource-intensive, in particular where reclamation takes years to complete or the operator is or was subject to bankruptcy proceedings, and may serve to further disincentivize the operator from performing the reclamation themselves. The IWG recommends that Congress revise the tax code to direct that unspent funds, if and when they exist, be transferred to the abandoned hardrock mine reclamation program established under section 40704 of the BIL and used to support abandoned mine cleanup.

6. Review agency reclamation assumptions for unforeseen costs as part of bonding estimate. (P)

Today, agencies set the projected cost for reclamation based on existing plans and information, and build in some increase to provide a margin of safety for taxpayers due to the size and duration of the expected reclamation. Currently the BLM allows for a contingency based on the following guidance from Handbook H-3809-1:

> A contingency cost is included in the reclamation cost estimation to cover unforeseen cost elements. Calculate the contingency cost as a percentage of the [operation and maintenance] cost as follows: up to and including $500,000, use 10 percent; over $500,000 to $5 million, use 8 percent; over $5 million to $50 million, use 6 percent; and greater than $50 million, use 4 percent.[326]

Under USFS regulations and policies, the level of contingency varies based on the complexity and type of operation and the level of information available to define the operation and its associated effects on surface resources. For plans that are 30–50 percent accurate, the recommended contingency is to add an additional 30–50 percent (divided between scope and bid contingencies) of the direct costs to the total estimate. For a very detailed plan of operations, typically a constructed and well-developed operating mine where most of the components exist and are measurable on the ground (as opposed to conceptual in a drawing), the accuracy of the plans is closer to 95 percent, and therefore the recommended contingency range is between 15–30 percent of the direct costs (again, split between scope and bid).[327]

However, neither agency's reclamation bonds account well for catastrophic events such as tailings dam failures or a massive release of polluted water like at the Gold King Mine. The USFS Bond Guide explains that a contingency is not a way to estimate the cost of worst-case scenarios, such as a tailings dam failure, but rather is meant to address errors that exist in every estimate resulting from the use of assumptions and conceptual information rather than actual measurement of the work to be performed.

The IWG encourages BLM and USFS to establish joint bonding policies to the extent possible. The IWG recommends that both of these policies be reviewed to ensure they accurately provide for unforeseen overages in cases when the government must perform the required reclamation. This review should determine whether separate guidance may be required for a contingency applied to a long-term cost estimate, as the extended time frame decreases the level of accuracy in known quantities and increases the likelihood of unforeseen overages.

7. Strengthen requirements for financial assurance instruments. (R)

As discussed in Section X.A, BLM has determined that insurance policies are a poor form of financial insurance, particularly as taxpayers may assume financial responsibility for reclamation if payments on the insurance policy lapse. However, BLM still officially allows insurance policies to be used as acceptable financial assurance, although it does not currently hold any. To ensure that

[326] Bureau of Land Management, *"Surface Management Handbook H-3809-1*," September 2012, sec. 6-15 p., 131.
[327] *Supra*., note 268.

insurance policies are not accepted in the future, the IWG recommends that BLM remove insurance from the list of acceptable financial assurances.

The IWG recommends that the USFS provide specific guidance in requiring and establishing LTFM, similar to the guidance contained in the BLM's 43 C.F.R. § 3809.555 regulations. Specifically, the IWG recommends that USFS regulations be amended to include the use of equity investments as well as negotiable securities in a trust fund, creating more flexibility in a dynamic financial climate. This update is essential to developing a sustainable approach to long-term bonding on national forest lands.

8. Revise MOUs for governing bonding roles and responsibilities and bond release reviews. (R, P)

MOUs between Federal agencies and States—such as the one between BLM, USFS, and the State of Nevada—are effective tools for ensuring that bond amounts are sufficient to address reclamation costs. In some instances, these MOUs have become outdated and a change in Federal statute and/or regulation has occurred, or there have been changes to individual State statutory or administrative codes and rules. The IWG recommends that existing MOUs between Federal and State agencies be reviewed and updated as appropriate to provide a consistent standard for setting financial assurance requirements. The IWG recommends that Federal parties to an MOU establish intervals for MOU review in order to ensure that the MOUs remain sufficient and current and that Federal parties clearly track all MOUs currently in effect. The IWG further recommends that the MOUs clearly indicate, or be revised to indicate, that with respect to financial assurances, any monies held by the State for reclamation of mining activities on Federal land need to be available to Federal agencies engaging in reclamation or remediation of those lands. Creating financial assurance release clauses where all regulatory parties review and concur should be considered. The IWG also recommends that, to the extent possible, MOUs follow a consistent template and approach in order to provide consistent direction to agency staff and mine operators.

9. Develop a Reclamation Handbook. (P)

BLM staff indicated to the IWG the potential value of having consistent standards for reclamation that are clear, achievable, and appropriate for an operation. USFS currently has reclamation guidance. Alignment between the two agencies would be welcomed, and the IWG recommends that the two agencies work together to create one shared reclamation handbook for field staff to provide such standards.

H. Government and Private Sector Capacity

1. Provide adequate resource support for Federal permitting agencies and historic preservation offices. (L)

The IWG recommends that Congress provide sufficient support to Federal agencies to hire, train, and retain experts in mining, mining engineering, environmental science, environmental engineering, project permitting, and related fields, and that Federal experts in these areas be dedicated to evaluating and monitoring mineral exploration, mine plans, designs and operations, environmental analysis, reviewing environmental monitoring and remediation plans, and monitoring and overseeing compliance with mining and environmental requirements and permitting-related work. This should also include investments in Tribal Historic Preservation Offices and State Historic Preservation Offices, which would allow historic preservation offices to engage more effectively in project reviews and conduct cultural resource inventories in advance of specific project proposals, which would accelerate NHPA compliance and allow for earlier avoidance of potential cultural resource conflicts.

As shown in Figure 1 (page 20), the number of mining claims on Federal land has increased significantly in recent years, which could lead to additional demands on Federal agencies to process exploration and mining plans in the near future. Even at the current level of activity, the Federal agencies that handle mine permitting lack the resources needed to consistently process permits swiftly. The GAO has identified a shortage of agency resources, including "staff, staff expertise, funding, infrastructure, training, and/or computer technology," as the second most cited challenge affecting the hardrock mine plan review process.[328] Limited agency capacity is a challenge that was previously summarized in the 1999 National Research Council report: "Some land management offices report that they have too few people to conduct inspections, review proposed operating plans, process appeals, and conduct other required activities. This concern extends beyond the number of people…. Offices responsible for regulating mine projects may not always have access to the trained and experienced personnel required."[329] These challenges persist today. As noted by industry commenters:

> [F]ederal resources devoted to reviewing and permitting mining operations on federal lands remain inadequate. Some BLM and Forest Service offices are short-handed or lack expertise to review specific elements of exploration or mining plans. A lack of resources, including people and technology, limits the ability of federal land managers to timely review and process mining plans and will ultimately limit the nation's ability

[328] *Supra.*, note 5
[329] *Supra.*, note 55

> to explore for and produce minerals to meet national security and climate change objectives.[330]

Another large mining interest voiced a similar concern, explaining that:

> BLM and the FS need to substantially increase the number of qualified mineral professionals including but not limited to mining engineers, economic geologists, mineral examiners, hydrologists, air quality specialists, and geochemists who are qualified to evaluate environmental baseline studies and Mining Plans of Operation. Albemarle recommends increasing qualified staff at EPA, the Corps, and other agencies frequently involved in mineral project NEPA review and permitting…. Increasing agency staffing levels in districts with high levels of mineral exploration and development activities would help reduce the agency review times that are currently contributing to permitting delays.[331]

The IWG encourages Federal agencies to, consistent with applicable laws and regulations, review resource availability for human capital development and retention, including the use of interagency tools such as transfer authority and reimbursable agreements.

While the BIL and Inflation Reduction Act (IRA) provide a much-needed influx of short-term resources for permitting, a sustained focus on hiring, training, and retaining agency mining experts is needed to expedite the environmental analyses and permitting needed to increase domestic critical mineral supplies, protect the environment, and engage interested Tribes and stakeholders. Simply put, no application will be processed quickly if agencies lack the experts to conduct the review. The need for additional resources is also true for those agencies such as the FWS, EPA, and USACE, which also have NEPA review, project authorization, and permitting responsibilities.

2. Build out the Federal database of mineral data and reporting requirements. (L, R, P)

The IWG recommends that BLM and USFS collaborate to collect consistent information and share this information in a unified format that is accessible and understandable to the public. Alternatively, Congress could assign such responsibility to another agency, such as the USGS. Federal mining and mineral data are fragmented and incomplete. While the USGS is considered the world leader for mineral data and has significant but short-term resources from the BIL and IRA to collect new geophysical data, the Federal government cannot answer simple questions such as the quantity of minerals being produced from Federal lands. More comprehensive reporting by

[330] *Supra*., note 181
[331] *Supra*., note 313

operators and better ways to access mineral data would significantly improve our knowledge of potential mineral deposits, how to develop them as sustainably as possible, and how to assure a fair return for taxpayers.

The IWG recommends implementing uniform, transparent, and systematic data reporting throughout the mine life cycle (for example, on production of target commodities; byproduct generation; waste rock management; the quantity of water diverted, disposed and consumed; the quantity and quality of waste and process water discharges; greenhouse gas emissions; and environmental indicators such as surrounding land, air, and water quality) in standardized machine-readable formats that can facilitate external analysis using automated methods. Part of this requirement could be met by expanding the USGS National Mineral Information Center's surveys of industry and by granting those surveys mandatory response authority where appropriate, while providing that the responses may remain proprietary or on close hold within the federal government as appropriate.

Building a comprehensive database from Federal data gathering efforts, such as the USGS' Earth MRI,[332] can help prioritize areas with higher mineral potential and lower resource conflicts and environmental sensitivities prior to exploration and development. Once projects move forward, having a Federal protocol for data collection and publicly available data would enhance project management and permitting across the country. This requires investment in the modernization of data management systems (e.g., storage, maintenance, and service) as well as the development of advanced techniques in data processing, such as the use of artificial intelligence to create derivative products that have immediate application to decision-making.

Sustained support of Earth MRI beyond the BIL would facilitate a longer-term planning horizon needed to continue expanding geophysical data coverage of the nation, incorporate new data types important for other minerals (such as industrial minerals), and develop data analyses that can be used to identify prospective areas for mineral resources and help with environmental assessments (such as for applications to water resource planning and surface water-groundwater-mine water interactions).

Drilling data and mine maps could also further our understanding of the subsurface and lead to better delineations of mine wastes and mineral resources in three dimensions. The IWG recommends that company data from exploration and production on Federal lands be made available to Federal and State geologic surveys, subject to appropriate protections for proprietary information. Requiring mining companies to provide exploration data to the USGS and State

[332] Earth Mapping Resources Initiative (Earth MRI). https://www.usgs.gov/special-topics/earth-mri.

geological surveys could greatly enhance our understanding of mineral potential and provide multiple ancillary benefits, including assisting in future assessments of national mineral resources and more effective land management planning.

3. Increase Federal investments in new technologies for data collection. (L, P)

Field staff told the IWG of the need to invest in new technologies to allow BLM and USFS to improve data collection and oversight. Staff suggested the adoption of standardized electronic forms for compliance inspections, tablets or other mobile devices with GIS-based data collection tools and high-resolution imagery, and the use of drones to assess site conditions. Staff believe these kinds of tools and moving towards electronic submission of mining plans and notices would make permitting more efficient. The IWG agrees and recommends that the BLM and USFS consider options to incorporate such enhancements.

The IWG also recommends the agencies explore eliminating the requirements to maintain physical case files and conduct correspondence by certified mail and transitioning to electronic case file data management and conducting official correspondence via email.

Field-based data collection could be enhanced using modernized, less invasive, and less expensive acquisition of data and samples from difficult-to-reach areas (such as unstable areas, subsurface structures, previously mined shafts and adits, and mine waste areas) using autonomous vehicles or novel drilling techniques. Previously mined areas in particular have the potential to greatly expand our understanding of the subsurface while providing the data needed for stabilizing these areas against potential environmental and physical hazards.

4. Increase Federal support and investment in research. (L)

The IWG considered recommendations suggesting that Congress reinstate the U.S. Bureau of Mines (USBM) to oversee all hardrock mineral development on Federal lands and lead Federal mining research efforts. While some research functions were transferred from the USBM to other agencies, a number of USBM research offices and centers were permanently closed, and Federal research and development support in fields such as mining, environmental science and technology, and minerals and materials sciences has been lost. The IWG does not believe that re-creating the USBM is necessary to facilitate research efforts that could be effectively conducted or overseen

by existing agencies, such as the DOE or DOI, but the IWG does recommend that those research efforts be re-established at one or both of those departments.[333]

Other research needs identified by the IWG include improved procedures for characterizing the potential for acid rock drainage and metal leaching, models for predicting impacts on water quality, understanding the interaction between groundwater flow and mining, mining practices that reduce surface disturbance and greenhouse gas emissions, improving water treatment, and management and reclamation of tailings, waste rock, and overburden. Additional research could also lead to improved yields from both mining and reprocessing. As highlighted by the recent OSTP/CEQ guidance to federal agencies, there is also a need to ensure that this research considers all lines of evidence appropriate to federal decision-making, including Indigenous Knowledge.[334]

Numerous other research needs exist, such as those outlined in a 2002 National Research Council study, ranging throughout the mining life cycle, from extraction to reclamation to post-closure.[335] Advancements can lead to new technologies that reduce production costs, improve production efficiency, enhance the quality of existing mineral commodities, and create opportunities to economically extract mineral commodities that are now considered technologically or economically inaccessible. Research can also advance new technologies that improve mine waste management, mine reclamation and remediation, and water and ecosystem restoration; prevent, avoid, reduce, or minimize the environmental impacts of mining, milling, and mineral processing; and lead to better opportunities to beneficially reuse mined lands. Additionally, re-establishment of the former USBM's role in technology transfer could improve the implementation of research into practice and advance improved technologies throughout the entire mining life cycle.

Investments in both data collection and research will also allow for the professional development of a new generation of subject matter experts whose knowledge can support efforts to modernize the mining and permitting systems in the U.S.

5. Create a grant program for mining schools. (L)

The IWG recommends that Congress authorize grants to mining schools to train personnel in modern, efficient, and effective mining and environmental management practices and in mining-relevant geoscience and engineering fields that have diminished over recent decades. Both industry

[333] The USBM is still in the U.S. Code, so technically it exists, but as it has had no funding for over 25 years and other agencies have been given many of its responsibilities, providing new funding to the USBM would be effectively the same as recreating it.
[334] *Supra*., note 213
[335] *Supra*., note 284

and the Federal government struggle to find personnel with the necessary training or experience to address complex mineral development-related issues. Sustained funding is needed to recruit and retain trained personnel within agencies and industry.

6. Provide the USFS and FWS with full cost recovery authority. (L, R)

While the BLM has the ability to charge cost recovery fees to applicants and retain the revenue, the USFS and FWS do not have statutory authority to do so. The IWG recommends that Congress provide the USFS and FWS with this authority.

Appendix I: List of Acronyms

ACHP.....Advisory Council on Historic Preservation

AML.....Abandoned Mine Lands

BIL.....Bipartisan Infrastructure Law [Public Law 117-58]

BLM.....United States Bureau of Land Management

CAA.....Clean Air Act

CBA.....Community Benefit Agreement

CBO.....Congressional Budget Office

CEQ.....White House Council on Environmental Quality

CERCLA.....Comprehensive Environmental Response, Compensation, and Liability Act

CWA.....Clean Water Act

DOC.....Department of Commerce

DOE.....Department of Energy

DOI.....Department of the Interior

EA.....Environmental Assessment

EIS.....Environmental Impact Statement

EJ.....Environmental Justice

E.O.....Executive Order

EPA.....Environmental Protection Agency

FAST-41.....Title 41 of the Fixing America's Transportation Act

FLPMA.....Federal Land Policy and Management Act

FNMPC.....First Nations Major Projects Coalition

FPIC.....Free, Prior, and Informed Consent

FPISC.....Federal Permitting Improvement Steering Committee

FRN.....Federal Register Notice

FSM ..... Forest Service Manual

FWS ..... United States Fish and Wildlife Service

FY ..... Fiscal Year

GAO ..... Government Accountability Office

GISTM ..... Global International Standard on Tailings Management

ICMM ..... International Council for Mining and Metals

IEA ..... International Energy Agency

IFC ..... International Finance Corporation

IGF ..... Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development

IK ..... Indigenous Knowledge

IRA ..... Inflation Reduction Act [Public Law No. 117-169]

IRMA ..... Initiative for Responsible Mining Assurance

IWG ..... Interagency Working Group

LTFM ..... Long Term Financial Mechanisms

MRI ..... Mapping Resources Initiative

NEPA ..... National Environmental Policy Act

NFMA ..... National Forest Management Act

NGO ..... Non-Governmental Organization

NHPA ..... National Historic Preservation Act

NMA ..... National Mining Association

NMFS ..... National Marine Fisheries Service

NOI ..... Notice of Intent

NPDES ..... National Pollution Discharge Elimination System

NPS ..... National Park Service

NWRS ..... National Wildlife Refuge System

OECD ..... Organisation for Economic Co-operation and Development

ONRR.....Office of Natural Resources Revenue

OSMRE.....Office of Surface Mining Reclamation and Enforcement

OSTP.....White House Office of Science and Technology Policy

PDAC.....Prospectors and Developers Association of Canada

RCRA.....Resource Conservation and Recovery Act

RFI.....Request for Information

ROD.....Record of Decision

SDWA.....Safe Drinking Water Act

SIA.....Social Impact Assessment

SMW.....Small Miner Waiver

SOPA.....Schedule of Proposed Actions

TSM.....Towards Sustainable Mining

UUD.....Unnecessary or Undue Degradation

UNDRIP.....United Nations Declaration on the Rights of Indigenous Peoples

USACE.....United States Army Corps of Engineers

USBM.....United States Bureau of Mines

USDA.....United States Department of Agriculture

USFS.....United States Forest Service

USGS.....United States Geological Survey

Appendix II: Summary of Public Comments Received from March 31, 2022, Federal Register Request for Information

Kearns & West was contracted by the Department of the Interior's Office of Collaborative Action and Dispute Resolution to assist with coding and categorizing comments received through listening sessions, Tribal consultations, and the public comment process for the Federal Register Notice (FRN) from March 31, 2022: Request for Information to Inform Interagency Working Group on Mining Regulations, Laws, and Permitting (Docket DOI-2022-0003). This report integrates comments received by written responses to the FRN, comments made during the Tribal listening sessions and consultations, and a series of 10 expert interviews with mining subject matter experts in industry, academic, government, and non-governmental organizations.

The comments received through listening sessions, consultations, and interviews were recorded and categorized into key takeaways. Kearns & West participated in the listening sessions and Tribal consultations in August 2022 (August 15th, 25th, 26th, 29th, and 30th). The comments received were analyzed by identifying recommendations and then organized into categories/codes found in the recommendations. These categories/codes allowed the project team to develop key takeaways by grouping similar comments together by the categories and regulations and to create descriptive summaries of these comment groupings. In addition, the project team conducted ten expert interviews with participants from academic, industry, and government organizations. The key takeaways from those conversations have been integrated into the appropriate sections below with the names and affiliations of the interviewee listed for reference.

The written comments received from the FRN were sorted into several categories. There are 26,978 comments, including 26,676, attributed as form letters (from 16 master form letters). These letters were identified by the PEPC (Planning, Environment & Public Comment) team at the National Park Service as letters that had most of the content identical to the master form letters. Next, the team reviewed 960 comment letters that had a large portion of matching content for any unique recommendations. Out of the remaining 302 individual letters and attachments, the project team identified requests to categorize them into 126 letters and reviewed the attachments for them. Finally, the project team identified recommendations made in these letters and organized them into several categories (or codes).

Table 1: Types of Written Comments

Type of Written Comment	Count of Written Comment
Form Letters or largely form letters	26,676
Total Unique Letters (some with attachments)	302
Unique Letters with Recommendations	126 (285 recommendations)
Total Comments	**26,978**

The structure of the key takeaway sections below consists of a theme that the project team identified based on a comment review. Within each overarching theme, the project team identified key takeaways for each theme. However, the team included individual quotes from comments where a comment reflects the heading, even if it does not belong to a broader key takeaway. The bolded text refers to the number of comments where each theme emerged from the comments. Under each theme, the project team identified key takeaways, numbered with bulleted examples of quotes that illustrate the takeaway. The illustrative quotes contain references about the sector area that each recommendation came from in addition to the file name from the letter submitted to the Federal Register Notice or whether it came from a listening session, consultation, or expert interview. The key takeaways (80) are bulleted under each numbered heading topic (59 topics).

A. Access to and Use of Public Lands

- Several comments recommended that patents under the mining law should be eliminated. **Eight individual recommendations centered on this theme.**
  - From an NGO letter: "The location-patent framework gives outsized power to the mining industry in determining where and when to dig up a publicly owned resource on publicly owned land. And with that degree of control, the mining industry cannot earn a legitimate social license, for it is not expected to demonstrate that its use of public lands and minerals serves the public interest. That must change if environmental interests and the views of Tribes and public-lands communities are to be truly respected when our common mineral wealth is mined."

- Give more authority to land managers and land management agencies—Five **individual recommendations centered on this theme.**
  - From an NGO letter: "Additional authority to land managers to balance mining uses with other uses of public lands, including authority to decide whether to approve

mining plan of operations and to reject proposals that may cause substantial irreparable harm."

- Several comment letters requested that additional authority be given to federal agencies involved in mining enforcement and regulation. Federal agencies should have the explicit authority to deny projects, strengthen regulations, and enact protective regulations. 9 individual recommendations centered on this theme.
    - From an NGO letter: "Make agencies' authority to deny projects explicit: The location-patent system is incompatible with meaningful consultation and genuine environmental safeguards. To fashion an efficient, environmentally fair, and culturally respectful mineral-development policy, federal law must vest our civil servants with authority to comprehensively plan for mining on public lands and to make resource-allocation decisions that account for competing public values. As the law now stands, the agency staff carrying out the day-to-day management of the nation's mineral estate believe that, absent a mineral withdrawal, they are powerless to forbid mining to preserve other values of public lands."

- Updating existing mine operations to promote critical mineral production at existing sites should be prioritized over development of new mine sites. 3 individual recommendations centered on this theme.
    - From an academic letter: "It is also helpful to remember that the solutions to ensuring a safe and secure supply of critical minerals do not rest solely in the creation of new mines. The land use planning process could be used to identify opportunities to develop critical minerals from existing mining operations and abandoned mine lands, including mine and mill tailings. We support efforts to incentivize remining and reprocessing of abandoned mine and mill sites. Done properly, redeveloping such sites could reduce impacts compared to development of undisturbed sites. If critical minerals can be obtained by reprocessing mine and mill waste, and contaminated sites can be remediated as part of that process, such actions should be a top priority, provided that all environmental standards are included in the mine development proposal.

- Certain areas of land should be considered off-limits to mining due their outstanding ecological, conservation, recreation, cultural, or other values. New mining projects should not be approved if they would impair water resources, scenic values, wildlife habitat, sacred sites, or other important conservation or cultural resources. 11 individual recommendations centered on this theme.
    - From an NGO letter: "Yes, areas that should be off-limits to mining are areas of ecological and cultural significance, including, but not limited to those that are important to maintain climate-resilient and connected habitats; areas that are critical habitat for threatened and endangered species; areas that are of cultural significance to Tribes based on historic and ethnographic investigation and consultation with tribal

councils and elders; and areas within National Wildlife Refuges and other public land designations incompatible with mining operations or impacts. The Nature Conservancy's Resilient Land Mapping Tool is the resource to identify areas with important conservation and climate values that would be unsuitable for mining. Permitting agencies should identify other areas using the best available science and through direct consultation with tribes and other entities with access to the relevant data."

- There should be no more mineral withdrawals; existing statutory and administrative tools for withdrawing lands are effective. Nine individual recommendations centered on this theme.
  - From an academic letter: "Keep all federal public lands open to mineral entry and do not close the roads that we, as taxpayers, paid to build and open. Recognize 11R.S. 2477 was a standing offer of a free right of way over the public domain," the acceptance of which occurred 'without formal action by public authorities' for roads or trails that existed prior to FLPMA (Pub. L. 94-579) on October 21, 1976 as a valid existing access '4right of way', 'rights of ingress and egress" and public highway following NEPA 'Preserve important historic, cultural, and natural aspects of our national heritage'."

- Some comment letters advised that any consideration for withdrawal from mineral entry on public lands must first ensure that all valid existing rights are protected and have a potential mineral survey conducted. Seven individual recommendations centered on this theme.
  - From an academic letter: "Any withdrawal from mineral entry on the public lands must first have a potential mineral survey conducted which will include: historic mining claim inventory and data on minerals mined, historic access to those mining claims documented and mapped, geological mapping of the lands affected, use of geotechnical and geophysical surveys of the potential withdrawal lands, geochemical analyses of potential mineralization by geologist conducting the geological mapping, and in cases of previous mapping and surveys, conduct geochemical sampling of areas identified to have mineral potential. Report such finding to the public for coordination on the decision to withdraw any public lands from mineral entry."

A. Fair Return and Diligent Development

- Several comment letters supported the collection of royalties on mining activities. 20 individual recommendations centered on this theme.
  - From an academic letter: "Collecting a federal royalty will provide much-needed capital to the federal government to reclaim abandoned mine lands and will advance a fairer return on the use of public lands for the American people."

- Several comment letters advocated for a leasing system versus the current claims system, with several suggestions on practices for doing so. 36 individual recommendations fell under this theme.
    - From an academic letter: "Based on my experiences with both the scientific and legal aspects of mining, American mining laws must move past the claims system and implement a leasing system to protect environmental features while protecting domestic mining opportunities. Where a claims system transfers land to a private party who has discovered a valuable mineral deposit, a leasing system will allow federal control of the land and provide more oversight for land managers."

- One comment letter received discussed claim maintenance fees.
    - From an academic letter: "The most recent proposal for revenues institutes an 8% royalty on new mines, a 4% royalty on existing mines, a hard rock mining reclamation fee, and an increase of the annual claim maintenance fee. This round of reforms has the potential to raise over 3 billion dollars for the next 10 years and are the best option for royalties on federal lands."

- One comment letter received discussed claim maintenance fees escalation.
    - From an industry letter: "Albemarle supports more efforts to address abandoned mine lands and points to the annual claim maintenance fees and service fees as a potential source of additional funding. Albemarle believes that the mining industry generally is willing to participate in remediating mining legacy issues and has the expertise to do so. However, the potential for liability under the Clean Water and Superfund is a major hurdle. Albemarle also supports Congress's enactment of S. 3571, the 'Good Samaritan Remediation of Abandoned Hardrock Mines Act' to begin to address the liability concerns."

- Many comment letters received advocated for improved reclamation efforts and the establishment of Good Samaritan legislation. Letters contained an extensive variety of recommendations on the reclamation of abandoned sites, components for a successful mine reclamation program and well-founded Good Samaritan legislation. 62 total recommendations centered on this theme.
    - From a State government letter: "Addressing Abandoned Mine Lands - The State supports creation of a program that incentivizes reclamation of abandoned mine lands, regardless of underlying land ownership. Such a program should (1) require landowner consent, (2) limit the assumption of pre-existing contamination, waste, or reclamation liabilities by an operator that implements an approved remediation or reclamation plan, and (3) generate transferable credits that can be used by an operator to mitigate or offset impacts from new mineral activities approved by applicable regulatory agencies. Alternatively, an abandoned mine land fund could be financed by the revenue generated from a net income production payment or royalty to help reclaim abandoned mines."

- Several comment letters recommended increasing the funding provided for all stakeholders involved in the mining process. This includes increasing funding to agencies and land managers and ensuring funding is available to communities and states. 10 individual recommendations centered on this theme.
    - From a multi-organization letter: "To ensure that impact plans are effective, mining reform should consider additional steps, including Funding should be made available to communities for planning and community engagement. Rural communities require the capacity to convene meetings, access data, and information, and conduct necessary assessments. Funds for community planning should be in addition to impact payments related to mining activity and should be earmarked for capacity building, technical assistance, and community engagement. The federal mining impact board could provide funding and services. The process should be aligned with existing rural development programs and expertise, such as the Rural Partners Network. A Civilian Climate Corps or similar program that places staff directly in mining communities could provide capacity for communities."

- One comment letter received discussed a revenue-sharing program.
    - From an NGO letter: "Mining reform should impose a royalty on new extraction. However, royalties should not be shared directly with state and local governments without mechanisms to stabilize and provide for intergenerational benefit. 1) We recommend that the U.S. Treasury establish a permanent fund to invest all or most royalties from hard rock mining (only royalties spent to implement impact plans and CBAs should not be invested). The fund should be invested to earn income, and the fund should make stable and predictable distributions to state and local governments in lieu of direct annual revenue sharing payments. Examples of permanent funds include the New Mexico State Land Grant Permanent Fund and the Southern Ute Indian Tribe Permanent Fund. 2) Another option is to distribute federal mining royalties to a national NGO who would establish and manage a permanent fund on behalf of states and communities. This arrangement would facilitate a diversified investment strategy that the U.S. Treasury may be limited from pursuing. A NGO also could best ensure the permanence of the fund from future changes in federal policy and spending. Several proposals in the Congress would establish a ngo and permanent fund, including legislation from Senator's Wyden and Crapo and Senator Bennet."

B. Permitting Process Recommendations

- Some comment letters recommended utilizing the state of Nevada's permitting process as a model. 6 individual recommendations centered on this theme.
    - From a State government letter: "Permitting Certainty (#7) Consistency is needed in the permitting process among federal land managers, including the BLM and USFS. Mining is inherently site-specific, requiring the evaluation of mining proposals to be

site-specific as well, as envisioned in the NEPA process. However, with authority delegation reserved for the BLM Field Office Manager and the USFS District Ranger, the permitting process has the potential to be individualized resulting in process inconsistencies, which can translate to uncertainty. Increased use of consolidated subject matter experts at BLM State Offices or National Forest level as part of dedicated mining Environmental Assessment or Environmental Impact Statement teams would increase evaluation consistency and accountability and decrease permitting times.

  - From an industry interview: "BLM in Nevada will use pre-submission process that allows identification of information needs, collection, etc. It allows for an upfront conversation about environmental concerns, data collection. Pre-submission meetings allow for identifying big issues particular to the site/project up front. Universally applying this pre-submission process would be helpful across all agencies and locations."

- Many comment letters recommended streamlining the permitting process. Permitting timelines need to be shortened and solidified. Comment letters provide various strategies to achieve these goals. 41 individual recommendations centered on this theme.
  - From a State government letter: "South Dakota supports streamlining the federal permitting process for mining companies which would help expedite the mining of critical minerals in the United States. In South Dakota, a mining company can be issued a mine permit in a process that can take no more than two years to complete. This includes baseline data collection, extensive staff review of environmental issues, and public participation in mine permit applications. This compares to anywhere from seven to ten years or more for a mining company to navigate through the federal application process and appeals process through litigative measures. These delays can have a negative impact on a company's ability to develop and mine critical mineral deposits in the United States."

- Several comment letters made recommendations regarding the legal components of the permitting process. 6 individual recommendations centered on this theme.
  - From an industry letter: "To facilitate and expedite the responsible domestic production of uranium and other critical minerals, the permitting process must be streamlined. This can be done without sacrificing the 'hard look' required by the NEPA process. Excessive NEPA appeals and litigation create these delays and uncertainties. NEPA can unfortunately be manipulated to use appeals and litigation to purposely create lengthy and costly project delays that have little or nothing to do with the merits of a case."

- A few comment letters supported the establishment of baseline data collection and reporting of mining sites. 3 individual recommendations centered on this theme.

- From a multistakeholder organization letter: "A broad range of environmental, social, and economic impacts are explicitly included in the IRMA Standard impact assessment requirements. The IRMA Standard requires the collection of baseline data describing the prevailing environmental, social, economic, and political environment before mining operations begin to allow the assessment of the potential impacts of the proposed mining project.43 The IRMA Standard also requires the assessment of potential impacts of "extreme events" (e.g., weather events intensified by climate change)."

- From an academic interview: "Soil, pH, plant biotic systems are heavily impacted by mines. Develop soil health metrics. Consider climate change as are of planning. Take baseline measurements to show what plant species are present prior to the mine, then plan rehabilitation after the life of a mine considering climate change. Replanting the same plant species present at the baseline measurement may not make sense."

- Some comment letters highlighted the need to increase local outreach to affected communities. This ensures community members can be knowledgeable, participative, and empowered throughout the project process. 5 individual recommendations centered on this theme.
  - From an academic letter: "Use newspapers, social media, local radio and TV to communicate the project and the opportunity for community participation. Give local participation and comments more weight in permit decisions and do not ignore local customs of all residents and examine and disclose the economic impacts of the permitting decisions."

- Several comment letters advised that the permitting process and related regulations should have greater consistency and predictability. 8 individual recommendations centered on this theme.
  - From a State government letter: "Permitting Certainty (#7) Consistency is needed in the permitting process among federal land managers, including the BLM and USFS. Mining is inherently site-specific, requiring the evaluation of mining proposals to be site-specific as well, as envisioned in the NEPA process. However, with authority delegation reserved for the BLM Field Office Manager and the USFS District Ranger, the permitting process has the potential to be individualized resulting in process inconsistencies, which can translate to uncertainty. Increased use of consolidated subject matter experts at BLM State Offices or National Forest level as part of dedicated mining Environmental Assessment or Environmental Impact Statement teams would increase evaluation consistency and accountability and decrease permitting times."

- Some comment letters recommend databases and frameworks to improve the permitting process. 5 individual recommendations centered on this theme.
  - From an academic letter: "As part of the Mine Permitting Hub, it would be helpful to have an analytical flow-chart helping regulatory officials and permit applicants to

determine which legal standards apply to a proposed mine, and how multiple permitting requirements fit together. We note that the Washington State Office for Regulatory Innovation and Assistance has developed multiple, very useful flow charts to assist regulators, permit applicants, and the public understand the steps involved in obtaining common permits. Simply creating the flowchart to identify the various permits that are required, permit sequencing, and permit coordination opportunities may foster understanding and coordination, thereby improving permitting efficiency."

  - From an NGO interview: "Companies should demonstrate the risks freely and fairly in the permitting process using the United Nations Guiding Principles (UNGP) and the Organization for Economic Cooperation and Development (OECD) frameworks because they take into consideration human rights and environmental due diligence."

- Some comment letters requested early consultations with affected communities as soon as possible in the project process. 4 individual recommendations centered on this theme.
  - From a State government letter: "Engagement at the earliest possible stages of a project is critical to building community support and reducing administrative and legal challenges later in the process. Applicants and land management agencies should be required to engage with a host of local stakeholders prior to the scoping period. Stakeholders should include, but not be limited to: Native American Tribes; state and local governments, environmental justice groups; labor organization; industry; and non-governmental organizations and environmental, recreation, and conservation groups. The Department should also consider revising its public notice procedures beyond the Federal Register and local newspapers and make a proactive effort to reach members of the local community in a wider range of mediums."

- Several comment letters supported strengthening the current mining regulations and reforming the 1872 Hardrock Mining Act to better address the social and environmental challenges that accompany mining. 7 individual recommendations centered on this theme.
  - From an academic letter: "Make the requirement for companies to respect human rights and the environment binding. Voluntary certification schemes like Initiative for Responsible Mining Assurance (IRMA) are positive starts but cannot replace the need for binding obligations for mining companies to respect human rights and the environment, throughout their entire value chains."

- Improve international cooperation on mining issues and align U.S. mining regulations with international standards. Ensure U.S. international partnerships and trade agreements operate under the highest international standards for human rights and environmental due diligence. 8 individual recommendations are centered on this theme.
  - From a multi-organization letter: "Align federal mining reform recommendations with international law and emerging norms around responsible business conduct, including the requirement for conducting gender responsive human rights and environmental

due diligence, respect for the rights of Indigenous and customary land rights holders, worker rights, and transparency and anti-corruption."

- Several comment letters highlighted international examples of mining regulations that the U.S. should duplicate. Australia and Chile are cited as examples of mining laws that provide more stringent oversight regarding environmental protections, long-term land use, and sustainable reclamation. Examples from Canada and Sweden are also highlighted but in less frequency. 11 individual recommendations centered on this theme.
    - From a Tribal government letter: "Both the Chilean and Australian approaches assume that the use of leading environmental practices is not regulatory overreach but makes sense from a business and reclamation standpoints. Immediate proper planning, operational protections and the incorporation of sound environmental practices are intended to limit both environmental emergencies and long-term liabilities which ultimately save companies money."

- Some comment letters focused on the creation of tax policy incentives for social, technological, and environmental improvements. 5 Individual recommendations fell under this theme.
    - From an academic letter: "The best incentive for companies looking to mine critical minerals is the implementation of a conditional federal tax reduction for applicable companies. These companies must show that they are mining a critical mineral and that they have taken every reasonable effort to sell their product domestically before turning to international markets. While this does reduce the overall amount of revenue generated by the federal government, reducing taxes is preferable to reducing the amount of royalty taken, should a federal royalty be adopted."

- Several comment letters made specific recommendations on how to improve the permitting process separate from streamlining. Recommendations encompass improving safeguards, community consultation, and environmental considerations. 12 individual recommendations centered on this theme.
    - From a multi-organization letter: "Require development of a Community Benefits Agreement (CBA); Important principles for CBAs include the following: strategies are locally determined but informed by regional and national development theory and practice; agreements aim to align mining activity with community needs; communities should receive funding from mining proceeds to leverage additional resources. In practice, communities require capacity and technical assistance to engage effectively in planning."

    - From an NGO letter: "We recommend the IWG examine the extent to which additional safeguards for hardrock mine permitting are needed. For example, consider a provision (similar to that provided for in SMCRA) to authorize regulatory agencies to withhold a permit from any applicant who either directly, indirectly or through a relationship of ownership or control is in violation of the Mining Law or other environmental laws and regulations. Such a provision will assist permitting agencies to

address problems where mining companies set up subsidiaries or other arrangements to ultimately avoid reclamation costs."

- Some comment letters requested more effective incorporation of climate change concerns into mining project plans. 4 individual recommendations centered on this theme.
    - From an NGO letter: "As a first step, funding, incentives, and agency support should be made available for i) data collection and analysis, ii) drilling and sampling, iii) technology trials (e.g., the use of innovative re-mining technologies), iv) reclamation and restoration trials, v) testing at sites to support nature-based climate solutions, carbon sequestration and storage, and other post-mining climate and biodiversity solutions. This innovative data and field-based challenge would accelerate the potential for critical minerals identification, waste characterization, and innovation to support restoration and safe closure."

- Several comment letters recommended that federal agencies respect existing state mining policies and/or model mining reform on existing state mining policies. 13 individual recommendations centered on this theme.
    - From a State government letter: "The State strongly cautions the U.S. Department of interior (DOI) and other federal regulatory agencies against considering regulatory reforms that directly or indirectly diminish or usurp state regulatory authorities over mineral activities. DOI should consult with and draw upon the extensive knowledge and experience of states that have developed strong regulatory oversight of mineral activities through state authorities or assumption of federal regulatory programs."

- One comment letter discussed involvement of other federal agencies, specifically the EPA.
    - From an end-user letter: "a. Establish transparent cooperation among the Department of the Interior (DOI), Department of Energy (DOE), Department of Transportation (DOT), the Department of Agriculture (USDA), and the Environmental Protection Agency (EPA) on permitting projects that directly support high-capacity battery production. All departments should work in the spirit of cooperation to efficiently guide projects through the permitting process, averting unnecessary roadblocks and inefficiencies. Furthermore, a streamlined approach should be considered, where a single agency takes the lead in advancing priority projects.
    - b. Establish and adhere to timelines and schedules for consideration of and final decision on applications, plans, leases, licenses, permits, and use authorizations for critical mineral-related activity on federal land.

      c. Establish permitting performance goals that are quantifiable and contain deadlines or timeliness requirements, with periodic review meetings that track permitting progress and address issues expediently as they arise."

- Some comment letters recommended increasing standards and adopting various protocols, such as applying MSE guidance or IRMA standards to address environmental and social concerns. 7 Comment letters centered on this theme.

- From a multistakeholder organization letter: "The MSE Guidance provides an assessment framework for industry to evaluate their stakeholder engagement performance and targeted guidance for specific stakeholder groups such as indigenous peoples, women, workers and artisanal and small scale miners. The Minerals Guidance and MSE Guidance complement the EITI Standard by seeking to improve the governance of the minerals sector and preventing corruption and mismanagement of mineral resources: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0427"

- The U.S. Bureau of Mines should be reinstated as a single lead federal agency for any future federal mining program. 5 individual recommendations centered on this theme.
  - From an individual letter: "Bring back the US Bureau of Mines or a similar agency to encourage government-business-university funding for research on projects for development that may include new or adoptable technology for critical and strategic minerals. This may include critical and strategic minerals as a byproduct or secondary mined and extracted minerals."

- A few comment letters recommended the incorporation of a wide breadth of expert-level knowledge in all aspects of the mining process. 2 individual recommendations centered on this theme.
  - From an academic letter: "Include technical experts from the mining industry, not just government bureaucrats and environmental consultants on all withdrawals from mineral entry and public land mineral plans."

C. Increasing Transparency

- Some comment letters supported improving public understanding of the permitting process and ensuring communities are empowered throughout the process. This includes ensuring greater transparency and accountability in all stages of the process. 5 individual recommendations centered on this theme.
  - From an academic letter: "These relatively simple actions: (1) creating a mine permitting hub; (2) developing analytical flowcharts and environmental checklists; and (3) creating a database of previously drafted NEPA documents that can be searched geographically or topically, would help reduce delay caused by the complexity of the legal system governing hardrock mining. Additionally, these actions would expand agency capacity by developing expertise and creating a system of institutional knowledge to offset the loss of senior staff members who may not be available to provide guidance or mentoring to new staff members. Finally, checklists and flowcharts would help stakeholders better understand the mine permitting process, engage more effectively, and appreciate how their input will be addressed through the permitting process."

- Some comment letters supported the creation of databases for best practices to increase consistency and comprehensiveness. 7 individual recommendations centered on this theme.
    - From an academic letter: "3. Create a geographically organized, searchable database of previously drafted NEPA documents. The RAPID Toolkit has another helpful feature that could be included in the Mine Permitting Toolkit. The RAPID Toolkit provides a link to previously drafted NEPA documents. This feature facilitates tiering and minimizes the risk of duplicative environmental analyses. NEPA regulations encourage using program, policy or plan environmental impact statements, as well as tiering statements of broad scope to those of narrower scope, to eliminate repetitive discussions of the same issue."

- Some comment letters recommend implementing various databases and frameworks to address the social impacts of mining. 5 individual recommendations centered on this theme.
    - From an multistakeholder organization: "The MSE Guidance provides an assessment framework for industry to evaluate their stakeholder engagement performance and targeted guidance for specific stakeholder groups such as indigenous peoples, women, workers and artisanal and small scale miners. The Minerals Guidance and MSE Guidance complement the EITI Standard by seeking to improve the governance of the minerals sector and preventing corruption and mismanagement of mineral resources: https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0427"

- Some comment letters requested additional time for notice level review. 2 individual recommendations centered on this theme.
    - From an industry letter: "BLM and the Forest Service should review and provide adequate staffing and training for field offices or ranger districts expected to see increased workloads as a result of expected increases in exploration and mining plans. The agencies should make sure that key expertise, such as mine engineering resource specialists, are available where needed to assure timely review of mining plans."

- Some comment letters supported the elimination of notice level operations. 4 individual recommendations centered on this theme.
    - From a Tribal government letter: "In short, eliminating notice level operations is necessary to uphold government-to- government consultation and transparent decision-making processes, to halt segmentation of activities so as to evade transparent review and approval, and to ensure that BLM's and USFS's review and approval of all hardrock mining activities do not run afoul of the agencies' public land management and protection responsibilities."

- Some comment letters supported the utilization of databases and frameworks to improve transparency within the mining industry. 5 individual recommendations centered on this theme.
    - From an industry letter: "Finally, for transparency of the origin of mined metals and their environmental impact, a mining operation rating framework should be

considered. This effort would expand on existing programs that work with modern technologies such as blockchain to track the impact of each batch of mined metal. With these technologies, dedication to environmental improvements of a mine operation could also be measured, helping to assess 'state capital'."

D. Tribal Recommendations

- Rigorous, robust, and effective engagement and consultation with Tribes and local communities is needed in all aspects of the mining project process. Engagement and consultation should start at the beginning stages of a project. 37 individual recommendations centered on this theme.
    - From an NGO Letter: "Requiring a jointly developed and approved impact plan would give communities standing in mining law to ensure consultation is robust and meaningful. To ensure the success of impact plans, mining reform should consider additional steps, including: 1) A federal mining impact board should be overseen by an agency with economic development and community impact expertise, such as USDA Rural Development or the Economic Development Administration. 2) Funding should be made available to communities for planning and community engagement. Rural communities require capacity to convene meetings, access data and information, and conduct necessary assessments. Funds for community planning should be in addition to impacts directly related to mining activity and specifically for the purposes of capacity building, technical assistance, and community engagement. Funding and services could be provided by the federal mining impact board. The process should be aligned with existing rural development programs and expertise, such as the Rural Partners Network. Capacity for communities could be provided through a Civilian Climate Corps or similar program that places staff directly in mining communities."

- In collaboration with Tribes, the federal government should establish mandatory procedures for effective consultation and coordination by federal agencies with Tribal governments in instances where federal government actions may impact Tribal lands and interests. 5 individual recommendations centered on this theme.
    - From an industry letter: "Inconsistency in agency staffing, standards and protocols often undermine relationships between Tribes, project proponents, and the agencies. The IWG should focus on: establishing minimum standards for federal agency consultation practices; encouraging establishment of protocols with specific Tribes or groups of Tribes on how and when such consultation should occur; and providing agency personnel sufficient resources to form meaningful relationships with Tribal and other stakeholders. Prioritize addressing the need for relevant federal agencies to substantially increase the number of qualified mineral professionals including but not limited to mining engineers, economic geologists, mineral examiners, hydrologists, air quality specialists, and geochemists who are qualified to evaluate environmental

baseline studies and Plans of Operation. Authorize project proponents to pay for third-party experts for project-specific work to augment agency staff."

- Tribes should be given extra time and support to participate meaningfully in planning mining activities and mitigation strategies. Tribal nations are sovereign nations and should be treated as such; agencies need to allow Tribal nations adequate time to evaluate information provided, ask for additional information as needed, and consult within their Tribal communities. 14 individual recommendations centered on this theme.
    - From an anonymous Tribal letter: "At least a 1-year notice of mining plans and proposals prior to openly exploring lands. This will allow Tribes, their councils, and Tribal citizens to converse among themselves to be well prepared for consultation."

- Additional resources, such as staffing, protocols, and funding, should be provided to promote robust, meaningful, and proactive Tribal and community engagement. Greater funding should be provided for Tribal consultation efforts to ensure thoroughness and inclusivity. 15 individual recommendations centered on this theme.
    - From a Tribal government letter: "Tribes should be afforded the time to find neutral (non-governmental, non-corporate) experts to help them understand what documents like Environmental Impact Statement's and Archeological Historic Properties Treatment Plans really means."

- Agencies should eliminate the allowance of notice level to escape public review and ensure consultation with Tribes under the NHPA. 2 individual recommendations centered on this theme.
    - From an industry letter: "The National Historic Preservation Act (NHPA) and National Environmental Policy Act (NEPA) provide requirements for notice and opportunities for public comment and consultation in the permitting process. Perhaps the agency can develop the position of liaison between companies and Tribes to standardize the interaction and negotiation process."

- Protecting sacred, cultural, or historical sites is of the utmost important, especially those valuable to Indigenous groups. Ensure cultural, iconic, and ecologically sensitive lands are off-limits for hardrock mining. Tribes should have more control over sacred lands. Any type of new mining system should be responsible for protecting cultural resources. 31 individual recommendations centered on this theme.
    - From a Tribal organization letter: "Ensure that cultural resources are considered in all decisions affecting every stage of a mining proposal-preplanning, construction, operation, and reclamation."

- The IWG should consider buffer zones or other limitations on mining near reservations. 1 individual recommendation centered on this theme.
    - [From a Tribal government letter: "FCPC and Tribal nations generally, are place based and cannot relocate. The very nature of treaty rights, and a line of cases reinforcing

treaty rights, makes clear that those rights are continuous, and the federal government is responsible for ensuring the sustainability of those rights, including hunting, fishing, clean water and environmental availability."

- Some comment letters supported safeguarding nature as a part of cultural resources. 4 individual recommendations centered on this theme.
    - From a Tribal organization letter: "Finally, a proposed rulemaking should put in place a procedure that halts a mining project that would irrevocably damage a Tribal Nation's cultural resources or sacred sites. In the same way that a project would not be allowed to proceed if it was going to have a severe negative impact on water or air quality, it should also be stopped if it destroys the places that are vital for Tribal Nations' history and identity. That is as important as the water they drink and the air that they breathe. Free, prior, and informed consent is a fundamental human right enshrined in the U.S.-endorsed United Nations Declaration on the Rights of Indigenous Peoples."

- Federal agencies should review all data sources related to local opposition for a project; there must be a standard for cultural resource surveys across all federal agencies. 2 individual recommendations centered on this theme.
    - [From a Tribal government letter: "Archaeological investigation has progressed throughout its history; cultural resource surveys that are over 10-15 years old frequently do not meet current standards and should be redone. Subsurface testing is not optional; it must be conducted. Identification of an area of potential effects (APE; 36 CFR 800.16 (d)) is a basic, essential component of consultation. Reports should be written so that those who were not working in the field can understand what occurred in the field, easily and completely."

- Tribal recommendations on permitting request that the permitting process be more thorough and transparent. Environmental, social, and financial considerations should be incorporated into the permitting process to better protect ecological and cultural resources and cover any worst-case scenario costs during construction and operation and closure of the proposed mine. 4 individual recommendations centered on this theme.
    - From a Tribal government letter: "Best practices should also include mining company transparency and accountability. Mining Companies should be required to publish information on at least a quarterly basis which tracks the permits they hold, any violations at existing or proposed operations, carbon footprint information, and a record of their closure and post closure financial obligations."

- Federal agencies must be required to protect treaty-reserved rights and Tribal legal rights, just as they comply with other mandatory federal laws, through close and regular coordination with affected Tribes. 19 individual recommendations centered on this theme.
    - From a Tribal government letter: "Federal agencies should not approve mining on lands to which Tribal reserved rights attach without the free, prior, and informed

consent of the affected Tribe or Tribes. Such a reform is fully consistent with the United States' long-standing policies on advancing Tribal sovereignty and self-determination and the policies the U.S. signed onto in the United Nations Declaration on the Rights of Indigenous People."

- Tribal consultation should be proactive and meaningful while honoring local customs, cultures, and knowledge. Proposed revisions should result in the protection of treaty resources vital to Tribal food security and subsistence, culture, health, and well-being. 16 individual recommendations centered on this theme.
    - From a Tribal government letter: "The courts have long recognized the federal trust responsibility, as has Congress and many federal agencies, but these responsibilities need to be emphasized when authorities are delegated to States and local governments. Mining regulations, laws, and permitting need to include Tribes in the entire decision-making process. For example, Tribes need to be included in a local government's consideration of zoning and planning. Landscape concerns such as forest fragmentation, water and other resource impacts, as well as community use of areas need to be part of all decisions."

- Recommendations included: (i) sharing of sacred sites that are on federal public land (including NDAs to keep the location of these sites confidential), (ii) giving more importance to government-to-government consultation when deciding which sites are off-limits, and (iii) setting up a program by which Tribes and Tribal communities can nominate lands to be considered for mineral withdrawal. 4 individual recommendations centered on this theme.
    - From a Tribal government letter: "Federal agencies should be directed to consult with Tribes in order to identify culturally or spiritually significant areas on federal public land and be empowered to proactively withdraw this land from mineral entry."

- Some comment letters recommend that Indigenous Traditional Ecological Knowledge be at the forefront of science and data to be included in any decisions to permit and develop mines in order to create more just ecological decisions. 3 individual recommendations centered on this theme.
    - One anonymous Tribal comment specifically recommends that the following data be included in any decision to permit and develop mines: (i) Traditional ecological knowledge, (ii) salmon spawning tributaries, (iii) Tribal fish commission data, (iv) subsistence use and status of food sovereignty the area provides, (v) migrations patterns of game in the area."

- Mining laws must acknowledge the primacy of treaty-reserved rights on federal land to protect Tribal sovereignty, treaty-reserved rights, and Tribal resources. 5 individual recommendations centered on this theme.
    - From a Tribal government letter: "Mining laws should acknowledge the primacy of treaty-reserved rights on federal land, rights which preexist the 1872 Mining Act. Treaties entered into by the United States, including treaties with Indian Tribes, are

the supreme law of the land under the U.S. Constitution and were not abrogated or in any way by the 1872 Mining Act."

- Several comment letters made specific recommendations on adopting certain legislation or rescinding federal rules that would help safeguard Indigenous rights and protect the environment. 11 individual recommendations centered on this theme.
    - From a Tribal government letter: "America's Surface Transportation Act ("FAST 41") Regulations: On January 8, 2021, a federal rule went into effect adding the mining sector to the types of infrastructure projects eligible for coverage under Title 41 of FAST-41.10. We urge the Interagency Working Group to recommend rescinding this rule."

- Several comment letters highlighted the need to codify extensive Tribal consultation best practices and procedures, particularly in regards to giving Tribes sufficient time to evaluate project plans. 6 individual recommendations centered on this theme.
    - From a Tribal government letter: "Agencies could also stop fast-tracking projects to give Tribes enough time to consider the project, consult with Tribal members, and provide meaningful input."

- Several comment letters advised that tribal and local community decisions regarding a mining project must be given primacy. Tribal concerns and requests deserve due deference. 13 individual recommendations centered on this theme.
    - From a Tribal government letter: "When any Tribe concludes that the risks of mining that would affect that Tribe's way of life and resources are not acceptable, that determination by the trust beneficiary should be honored by its trustee, the Interior Department and that mining should not be permitted to happen. In other words, 'no' by the beneficiary should mean "no" by its trustee. If new or improved technologies are developed to significantly diminish the mine pollution and safety risks, then Tribes may wish to revisit their 'no.' But as long as Tribes say 'no', as the original stewards of the land, that position must be honored and maintained by the United States and the Interior Department, as trustee."

- The Departments must honor the Biden Administration's November 2021 Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights. Two individual recommendations centered on this theme.
    - From a Tribal government letter: "The Secretaries of the Departments of the Interior and Agriculture signed the Biden Administration's November 2021 Memorandum of Understanding Regarding Interagency Coordination and Collaboration for the Protection of Tribal Treaty and Reserved Rights. That MOU affirmed the Departments' 'commitment to protect Tribal treaty rights, reserved rights and similar Tribal rights to natural and cultural resources' and 'to demonstrate that commitment through early consideration of treaty and reserved rights in agency decision-making.'"

- Establish substantive financial measures to ensure meaningful participation of Tribes in decision-making. 4 individual recommendations centered on this theme.
    - From a Tribal government letter: "Tribal staff and leadership must spend countless hours reviewing mining proposals in order to prepare for consultation. This work is often a huge financial burden for Tribes, which too often simply do not have the staff capacity to consult on proposed mines that will affect their rights or interests or to consult in a meaningful manner."

- Assurances should be established for temporary disruptions due to mining activities. 4 individual recommendations centered on this theme.
    - From an anonymous Tribal letter: "Disruption as a result of a multi-million- or billion-dollar industry, the people of the area should receive adequate assurance to provide for themselves and future generations."

- Additional education and economic opportunities for rural youth beyond mining should be created alongside direct collaboration with Tribal Nations, communities, and organizations to ensure improved education on the connection between extractive industries and gendered violence. 1 individual recommendation centered on this theme.
    - From an individual interview: Mining reform should "Assure continuity of staff transitions during regulatory regime, maybe even create a manual."

- Several comment letters stated that Tribes should have the authority to nominate lands to be considered for mineral withdrawal—nine individual recommendations centered on this theme.
    - From a multi-organization letter: "Tribal Nominated Mineral Withdrawal Program. In addition to the mineral withdrawal adjacent to the Grand Canyon discussed above, there are other areas significant to tribes and tribal communities that should be considered for mineral withdrawal. For example, in New Mexico, Mt. Taylor is culturally significant to indigenous nations regionally. Uranium deposits on and adjacent to Mt. Taylor should be permanently placed off limits to exploitation. We urge the Federal government to establish a program by which tribes and tribal communities can nominate lands to be considered for mineral withdrawal."

- The federal government should analyze gendered violence and the impacts of man camps in all federal permitting for mines and all extractive projects. Three individual recommendations centered on this theme.
    - From a Tribal organization letter: "NOW THEREFORE BE IT RESOLVED, that the National Congress of American Indians (NCAI) is opposed to the construction of man-camps near Tribal Nations and calls on the Departments of Justice, Interior, and Health and Human Services, and related agencies, to increase safety for Native women in order to address the crisis of Missing and Murdered Indigenous Women and Girls."

- A few comment letters requested the establishment of CBAs. 2 individual recommendations centered on this theme.

- From an NGO letter: "A CBA may also include payments into transition funds that communities can only access when certain conditions are met, such as mine closure or downturns that result in significant layoffs at the mine."

E. Operational Standards

- Several comment letters advocated updating existing mine operations to promote critical mineral production. Mining should be prioritized at existing sites over developing new mine sites. Need to support the development of minerals recycling and the recovery of minerals from mine tailings and waste. Further consideration should be given to permitting activity to reclaim rare earth elements and other minerals from brownfields and abandoned mines—ten individual recommendations centered on this theme.
  - From an NGO letter: "The Safety First: Guidelines for Responsible Mine Tailings Management should be used to help inform and create new regulations surrounding the construction and maintenance of mine tailings and mine waste storage facilities. The Safety First: Guidelines for Responsible Mine Tailings Management was developed in 2020 by an international group of 142 scientists, community groups, and NGOs from 24 countries."

- Several comment letters highlighted the need to standardize mining regulations across different federal agencies—twelve individual recommendations centered on this theme.
  - From a State government letter: "Permitting Certainty (#7) Consistency is needed in the permitting process among federal land managers, including the BLM and USFS. Mining is inherently site-specific, requiring the evaluation of mining proposals to be site-specific, as envisioned in the NEPA process. However, with authority delegation reserved for the BLM Field Office Manager and the USFS District Ranger, the permitting process has the potential to be individualized resulting in process inconsistencies, which can translate to uncertainty. Increased use of consolidated subject matter experts at BLM State Offices or National Forest level as part of dedicated mining Environmental Assessment or Environmental Impact Statement teams would increase evaluation consistency and accountability and decrease permitting times."

- Some comment letters requested that all mining activity focused government staff have sufficient knowledge, experience, and training for all aspects of the mining process to make consistent implementation possible. 6 individual recommendations centered on this theme.
  - From an academic letter: "The lesson is clear – agencies must have sufficient, adequately trained, and stable staffing if they are to complete any permitting task in a timely and efficient manner."

- Some comment letters supported expanding the enforcement ability of federal agencies to address environmental and legal violations. **Five individual recommendations centered on this theme.**
    - From a State government letter: "In summary, a successful mine reclamation program would include all the components discussed above, including:
        - Pre-construction permitting,
        - Clear criteria for environmental performance during and after mining operations, including closure and post-closure,
        - Compliance monitoring, inspections and enforcement during operations,
        - Enforcement mechanisms in place during operations,
        - Submittal and approval of a Mine Reclamation Plan, and
        - Sufficient financial assurance (discussed in detail in the next section)."

- Some comment letters advised that the federal government honor state authority; existing state-led mining programs deemed to work well should be given primacy—five **individual recommendations centered on this theme.**
    - From an industry letter: "A number of states, working together with BLM and the U.S. Forest Service, have developed successful mine reclamation programs. For example, Nevada, BLM and the USFS have entered into a memorandum of understanding that establishes coordination processes and reclamation requirements. Albemarle recommends that the IWG consider this approach as a possible national model for uniform application throughout the country, taking into account the variable requirements of state laws. A uniform approach would provide consistency, enhance efficiency and improve reclamation protections."

F. Mine Closure & Closed Mines

- Some comment letters recommended several databases and frameworks to improve reclamation efforts, including long-term monitoring and more comprehensive data collection activities—five **individual recommendations centered on this theme.**
    - From an academic letter: "Collecting data about the natural qualities of a site before, during, and after mining will aid the reclamation process and help integrate the reclaimed land back into the surrounding ecosystems."

- Many comment letters highlighted the need to implement Good Samaritan legislation to facilitate the reclamation of AML sites. **Sixty-two total recommendations centered on this theme.**
    - From an academic letter: "The Interagency Working Group should work with Congress to empower Good Samaritans to cleanup abandoned mines and improve the environment. Doing so means eliminating the disincentives for mine reclamation created by Superfund and the Clean Water Act. One existing legislative proposal, for

instance, would authorize the EPA to issue Good Samaritan permits that limit a Good Samaritan's liability to violations of the permit that result in environmental conditions worse than those that existed before the cleanup was undertaken. The Good Samaritan Remediation of Abandoned Hardrock Mines Act (S. 3571), bipartisan legislation introduced in the 117th Congress, would help achieve this goal by establishing a new pilot program administered by the EPA to permit up to 15 Good Samaritan abandoned mine cleanups."

- The IWG should create an Abandoned Mine Land (AML) program through one lead agency or across multiple agencies to expedite Good Samaritan proposals. 2 individual recommendations centered on this theme.
    - From a Tribal government letter: "IWG should consider how to create an AML program either across agencies or through one lead agency to expedite Good Samaritan proposals. IWG should also consider legal mechanisms to shorten timelines, including form settlement agreements, minimal reuse requirements and expedited review in the event Good Samaritans are willing to undertake immediate clean-up costs."

- Mining projects that could damage communities, lands, and waters need to be monitored; mines must continue to meet all applicable laws and regulations, including those that protect water quality and other environmental resources. Relatedly, there is a need to close two significant loopholes in the application of the Clean Water Act to address pollution and other hazards from the disposal of mining and mine-processing wastes. Seven individual recommendations centered on this theme.
    - From an NGO letter: "Mine plans should include baseline studies regarding permafrost, soil, and hydrology that are frequently updated to inform the mine operator of on-the-ground changes that may affect operations and/or the ability of the mine to continue to meet all applicable laws and regulations, including those that protect water quality and other environmental resources."

- Additional assurances should be established to ensure that new mine sites will be cleaned up and that there will be supplementary funding for the clean-up of abandoned or legacy mines. Seven individual recommendations centered on this theme.
    - From a Tribal government letter: "The IWG should consider a prioritization approach found in CERCLA and other environmental concepts and create regulatory structure specifically for AMLs. One manner through which AMLs can be reintroduced to beneficial use may be with Good Samaritan immunity provisions, or short of regulatory changes, form settlement agreements. Many states have municipal liability exemptions that are intended to encourage municipalities to acquire title to property, clean it up and return it to beneficial use. With respect to AMLs, Good Samaritans often have desired uses or plans for properties, but projects aren't feasible with continued CERCLA liability associated with property acquisition. FCPC recognizes the legitimate

challenges associated with revisions to CERCLA but urges IWG and agency staff to consider development of a regulatory program, which provides increased certainty to Good Samaritans, that codifies an approach to limit liability specific to AMLs."

- Some comment letters advocated for establishing or reforming appropriate financial assurance tools. 5 individual recommendations centered on this theme.
    - From an NGO letter: "We suggest a requirement for financial assurance, such as a reclamation bond, to compel companies to fulfill reclamation requirements and cover the cost of any necessary remediation after mine closure when the company returns the lease to the governing authority. This would avoid the need for government agencies to fund costly remediation post-closure. The amount of assurance should be based on a comprehensive risk assessment and corresponding site mitigation plan for post-closure conditions. The responsible agency should review and revise the risk assessment and the mitigation plan periodically to determine whether the financial assurance amounts should be adjusted. OR In general, a successful mine reclamation program should include the necessary tools and strategies to ensure mining companies fully reclaim sites and make them available for another post-productive use or restore sites to pre-production conditions that provide meaningful ecosystem value."

- Some comment letters supported the exploration of bonding as a financial tool. Five individual recommendations centered on this theme.
    - From an industry letter: "Federal tax laws have not kept pace with the changed circumstances confronting the mining industry. They have not accorded any meaningful recognition of the capital and operating cost burdens currently placed on that industry. Greater incentive must be provided to assist the industry not only in meeting its general capital needs for the development and expansion or productive capacity, but also in alleviating the burden imposed on the industry by mandating environmental and health and safety expenditures. Improved financial posture of the mining industry is necessary if that industry is to regain any semblance of a competitive position in world markets. To achieve that goal, a number of actions are essential: First, that the existing, long-standing, time-proven provisions of U.S. tax laws that_ recognize the importance of the mining industry-percentage depletion allowances and expenses of exploration fund development costs-.be continued; second, that the investment tax credit, an im-portant incentive to capital formation, be extended to include all buildings used in mining and manufacturing and be made refundable (or at least fully creditable against a company's entire tax liability); third, that realistic, flexible capital cost recovery allowances for plant and equipment investments be adopted in lieu of present depreciation allowances; fourth, that the costs of environmental and other similar government-mandated requirements be written off over any period selected by the taxpayer, including the year of expenditure, and; finally, that tax-exempt municipal bond financing be available for non--productive pollution control abatement equipment as well as for other government-mandated expenditures."

- Many comment letters recommended the establishment of financial provisions that improve social and environmental protections. **Sixteen individual recommendations centered on this theme.**
    - From a multi-organization letter: "For these reasons, extending the performance standard under 43 CFR § 3809.420(f) to all species of greatest conservation need identified in state wildlife action plans, as well as any species or habitats state wildlife agencies or Tribes express concern for during consultations (e.g., crucial winter range for pronghorn), would better account for the need to prevent impacts to sensitive fish and wildlife species that may push them toward further population declines or ultimately a listing decision."

G. Federal and Private Sector Capacity

- Several comment letters highlighted the need to provide additional funding and staffing to enhance the permitting process. **6 individual recommendations centered on this theme.**
    - From a State government letter: "The Department should also consider increasing resources and expertise available to mineral permitting offices. Agencies are often understaffed and lack sufficient expertise to efficiency evaluate environmental analysis and reviewing permits."

- Several comment letters advised using the best available science, data, and technology to evaluate mining projects and map minerals—nine **individual recommendations centered on this theme.**
    - From a State government letter: "Utilize Best Available Science (#10) Determination of best available science requires an open dialogue with subject matter experts and time - time for review, assessment, and application. The ability to incorporate and view complex datasets in an interactive web-based mapping format transformed the way agencies can provide data to each other and the interested public. For example, the Nevada Division of Minerals uses an open data site (https://data-ndom.opendata.arcgis.com/) to provide a wide variety of data to the minerals industry and the general public. The challenge is finding, accessing, and vetting this data. Currently, several clearinghouses exist for storage and retrieval of GIS data, but few require registration and restrictions on use of the data. For the protection of habitat, cultural artifacts, and public safety, some data is not intended for public release. Data sharing agreements, with restrictions on distribution/sharing, between various subject matter experts, Tribal Nations, and agencies might facilitate sharing of the data resulting in the ability for authorized authorities to see the best available science and make better informed decisions."

- Some comment letters supported reinvigorating the mining workforce through increased funding, educational programs, and improvements to the hiring process—three **individual recommendations centered on this theme.**

- From an individual letter: "Use some royalty funds to provide funding for educational programs focused on the workforce needed for future mining. Encourage NSF and DOE to fund industry-focused programs with matching or majority funding from industry for workforce issues. Funding should include both vocational and academic tracks."

- One comment letter received discussed cost recovery authority.
  - From an NGO letter: "We suggest a requirement for financial assurance, such as a reclamation bond, to compel companies to fulfill reclamation requirements and cover the cost of any necessary remediation after mine closure when the company returns the lease to the governing authority. This would avoid the need for government agencies to fund costly remediation post-closure. The amount of assurance should be based on a comprehensive risk assessment and corresponding site mitigation plan for post-closure conditions. The responsible agency should review and revise the risk assessment and the mitigation plan periodically to determine whether the financial assurance amounts should be adjusted. OR In general, a successful mine reclamation program should include the necessary tools and strategies to ensure mining companies fully reclaim sites and make them available for another post-productive use or restore sites to pre-production conditions that provide meaningful ecosystem value."