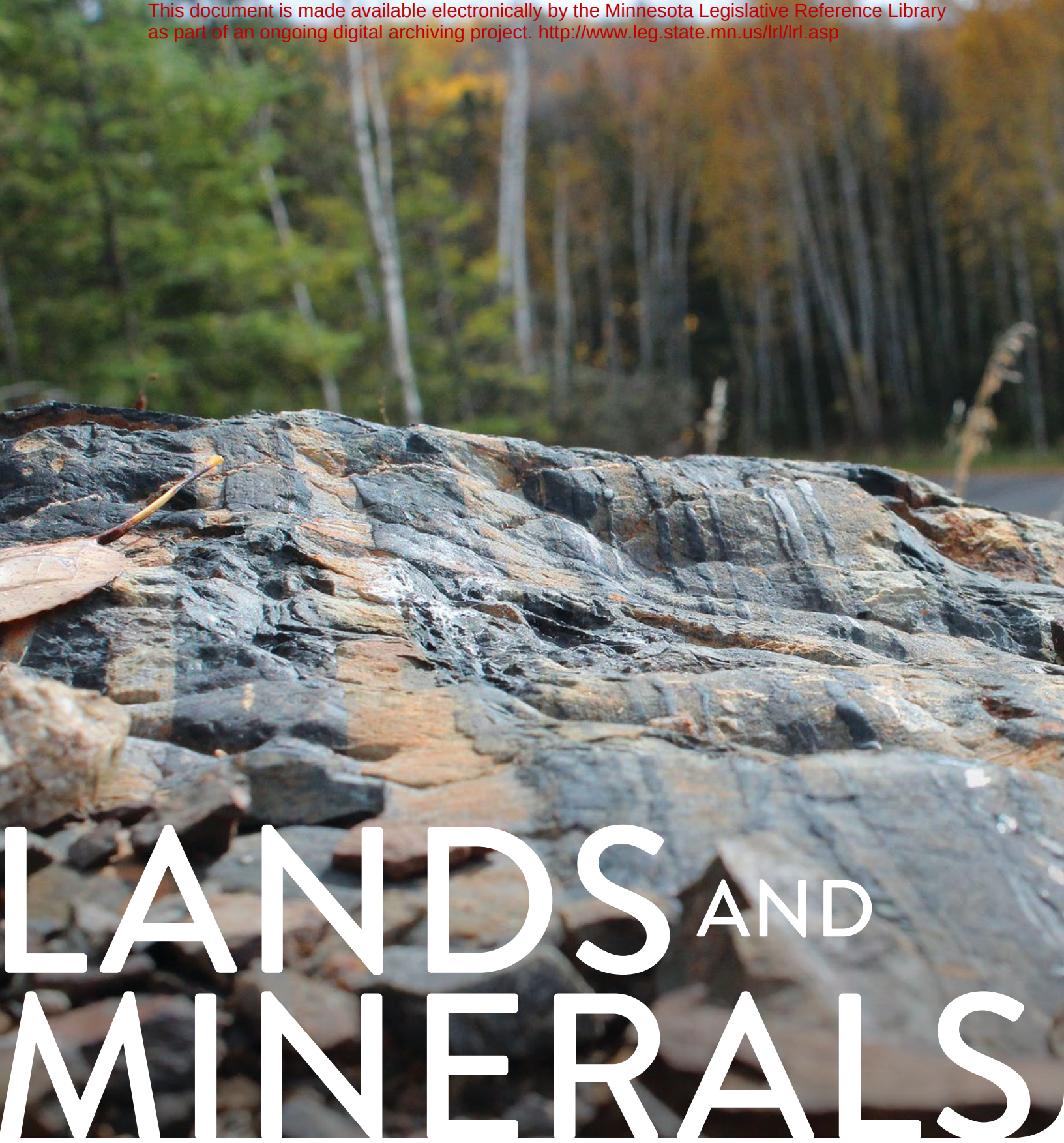


LANDS AND MINERALS

STRATEGIC PLAN 2017-2027

DEPARTMENT OF NATURAL RESOURCES

TABLE OF CONTENTS

Cover photo: A bedrock outcrop of Soudan iron formation at Lake Vermilion-Soudan Underground Mine State Park. Lands and Minerals (LAM) staff facilitated this land acquisition in 2010, which doubled the size of the old Soudan Underground Mine State Park to 4,048 acres now.

The beautiful autumn foliage matches the colorful bedrock in an old iron mine within Lake Vermilion-Soudan Underground Mine State Park.

BUILDING STRONG FOUNDATIONS

ABOUT US

DNR Mission

To work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

THE LANDS AND MINERALS DIVISION

We are one of seven divisions within the Department of Natural Resources. Lands and Minerals (LAM) has about 100 full-time employees working across the state. The division is split into two sections—lands and minerals. These sections have different types of work but collaborate daily to accomplish their respective goals. Our employees use their expertise in law, science, engineering, industry, and real estate to meet critical public needs.

OUR VISION

To provide exceptional real estate and mineral expertise to enhance Minnesota's future, uphold strong environmental protections and support our economy by demonstrating the highest professional standards.

VISION

A project manager poses with landowners who donated a portion of their land for a new state aquatic management area near Mora.

This newly acquired native prairie bank easement is one example of how LAM helps the DNR protect some of Minnesota's last remaining native prairie.

OUR ROLE

1. Regulators: We regulate tax-forfeit land sales, utility licenses, mining reclamation, and permits to mine.
   - These regulatory processes can be complex, such as when new pipelines or transmission lines are proposed to cross state lands and public waters or when a new permit to mine is considered.
   - We regulate as directed by the Legislature to ensure due process in the private industry and protect taxpayer dollars.
   - We ensure minerals are developed in a way that protects Minnesota's resources.
2. Agents: We work with other DNR divisions as real estate advisors to acquire, sell, and exchange public land for conservation, recreation, and economic purposes.
   - Land acquisition and conservation easements are used to provide new recreation opportunities, protect important habitat, and safeguard sensitive natural areas across the state.
   - Sales and exchanges occur so we can effectively manage our land, maintain a high-performing public land base, and put a priority on strategic land asset management.

Real estate staff do a field inspection for a utility license that crosses state land and water.

3. Trustees: We are guardians of Minnesota's trust lands, alongside the Office of School Trust Lands and the DNR's Forestry Division.
   - Since 1858, school trust land revenue generated mainly from timber and mineral leases has supported our state's public school system.
   - Lands and Minerals is responsible for attaining the best possible outcomes from Minnesota's mineral endowment to create direct revenue for statewide public schools, the University of Minnesota, counties and local taxing districts.
   - We also safeguard our economic land assets such as timber and minerals for the Permanent School Fund.

An active iron mine on the Mesabi Range. LAM mining engineers inspect the School Trust mineral lease in this mine to verify that royalty payments to the Trust are accurate.

A chemist performs water quality tests on mine tailings.

A geologist performs an examination of pebbles from state land to determine the gold content.

GUIDING PRINCIPLES

Safety is the number one guiding principle for Lands and Minerals. Safe work is high quality work. After safety, our team seeks to demonstrate the following values in day-to-day work and professional relationships.

Honesty

We are open and honest in the work we do, in our relationships with partners, the public and our colleagues.

Respect

We put people first and respect differing opinions and backgrounds. Success is only possible when we can work together in a safe and trusting environment.

Accountability

We are committed to producing the highest quality work and are always transparent and available to the public.

Expertise

We champion rigorous science, uphold professional standards, support learning through research and communicate the facts.

Leadership

We strive to be leaders in the DNR, in government, and in our fields. Rather than follow what has already been done, we aim to innovate and evolve.

The Strategic Planning Process

ABOUT THE PLAN

PROCESS

The strategic planning process was led by a division team representing various parts of the state and all aspects of the division's work. The team also included representatives from the Forestry, Fish and Wildlife, and Ecological and Water Resources divisions.

For more details about the planning process, please refer to Appendix A.

SCOPE AND TIMELINE

This plan serves as the division's strategic direction from 2017 to 2027. It is designed to function at a high level and withstand change, in tandem with the DNR's Conservation Agenda. It aims to clearly communicate the division's goals and present important trends and issues to lawmakers, the public, and partners.

AUDIENCE

Key audiences for this strategic plan are the public, external partners and lawmakers. During our outreach process, we discovered an overall lack of understanding about our division's work and its influence. This plan will be accessible to all Minnesotans to foster a greater understanding about what our division does and our vision for the future.

This plan is available to the public.

A land surveyor uses modern digital instruments to accurately determine a property boundary.

Staff geologists and engineers determine how much royalty each iron mine owes for mining on state land. A drone is being tested to determine if it could help them be more efficient.

This plan will work in conjunction with our external and internal partners' strategies.

Other DNR divisions are another key audience for this strategic plan as well. There are few functions within Lands and Minerals that do not involve other DNR divisions in some way. Their input on and understanding of this plan is essential.

Division leadership will be using the plan to develop policy and budget proposals, which will influence annual work planning for staff. Lands and Minerals staff are also a vital audience for the plan, but may not see all their daily work directly reflected here.

IMPACT

This strategic plan will not only guide the work we do internally over the next 10 years, but we hope it will also work in conjunction with our external and internal partners' strategies. We hope it will promote a better understanding of our work and provide new opportunities for collaboration and advance our vision.

The plan's impact will be measured against benchmarks established by the division's implementation team after this document is distributed.

THE DIVISION OVERALL

TRENDS

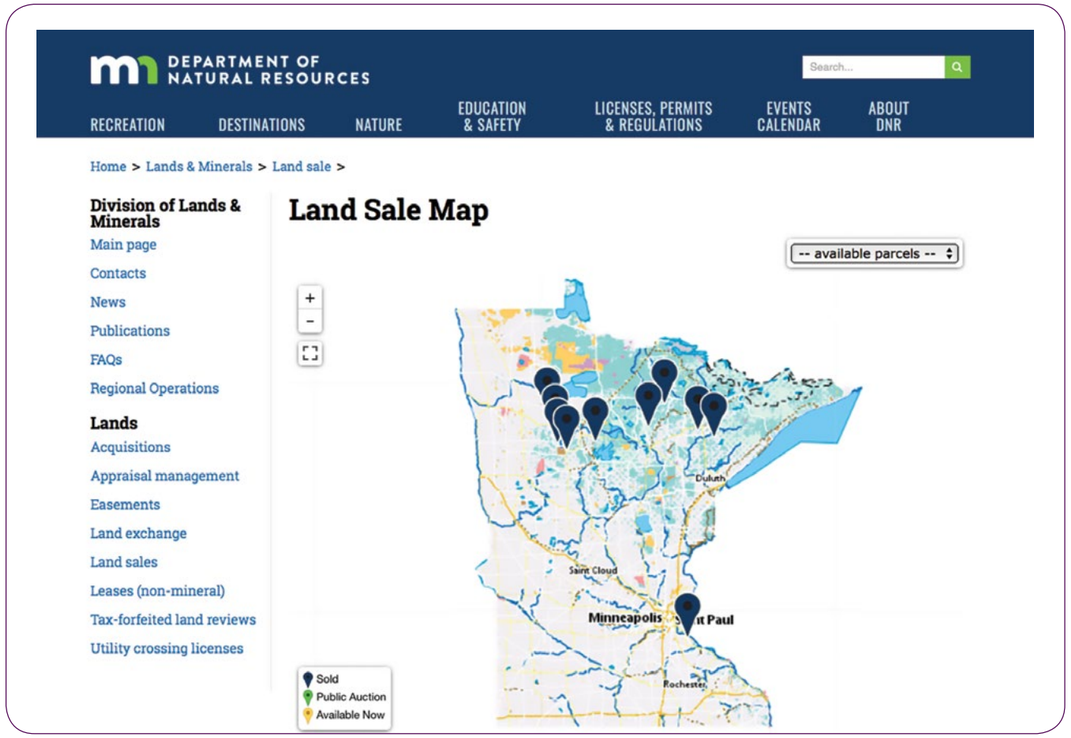
Trend 1: Advancing technology is changing our work and lives.

New technologies have changed the way we collect and analyze information.

- Land records are now managed electronically. However, advances and updates occur frequently, challenging staff and organizations to keep up with operating standards and maintenance.
- Drone technology can accurately collect geospatial data for maps and landscape analysis. Drones provide a cost effective and less impactful way to gather aerial information.[1]

Land transactions are managed electronically.

TRENDS

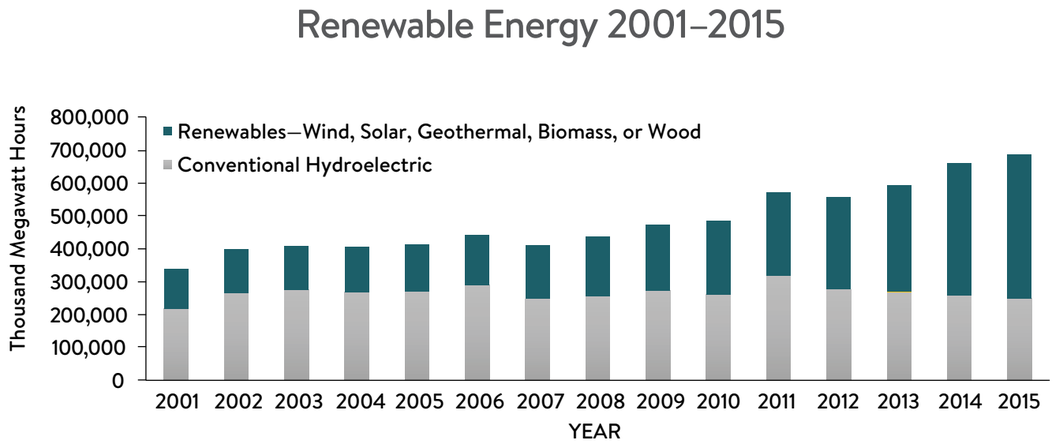


LAM is making more information available on the internet, including new interactive web maps on many topics such as this example about DNR Land Sales.

68 percent of Americans have smartphones.

Mobile devices, the internet, and social media have drastically altered how we communicate about our work.

- In October 2015, 68 percent of Americans had smartphones; 45 percent had tablet computers. Ownership of other devices like the desktop computer has not grown in recent years. This influences how we communicate with colleagues and the public.[2]
- Mobile applications are being developed for many different useful purposes. For example, the Great Lakes Early Detection Network (GLEDN) is an online system that "collects invasive species reports from casual observers, verifies these reports and integrates them with others networks."[3] Tools like this app provide creative and widespread ways to collect and report data not previously seen.



United States Department of Energy, 2016

Renewable energy production has been increasing nationwide. This means more work for LAM staff who perform utility licenses and inspections.

Trend 2: Industrial development in Minnesota is growing and modernizing.

Energy development is diversifying.

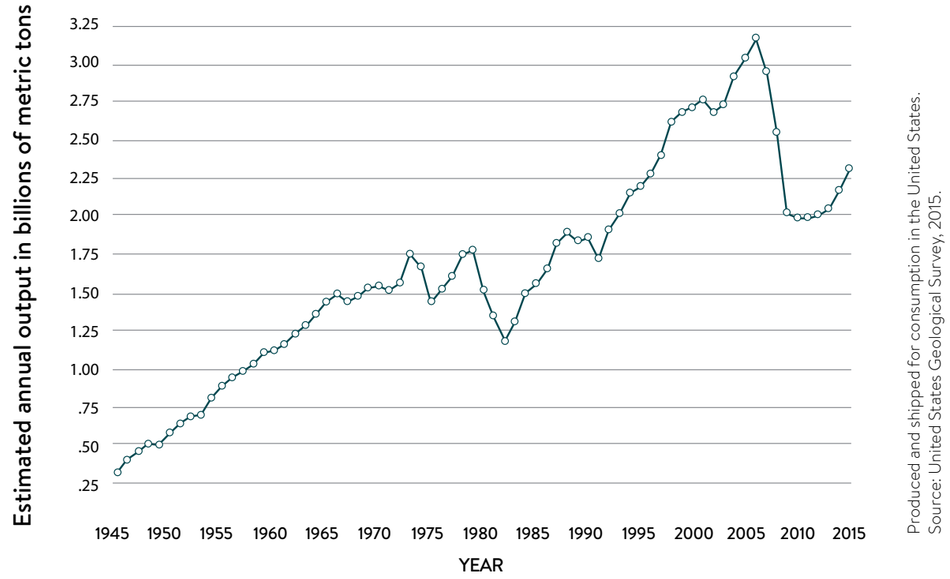
- Renewable energy generation and capacity is rising. The U.S. Department of Energy reports that "from 2008 to 2013, the United States' total renewable electricity generation increased by 40 percent, while non-hydro renewable electricity generation more than doubled."[4] This is due in part to the increasing viability of different types of renewable energy, with wind and solar gaining the most capacity.
- Lands and Minerals is responsible for making decisions about utility licenses that cross state lands, many of which are held by energy companies, railroads, and public roads. The focus of licensing is to minimize environmental harm to public waters and DNR-administered state land during construction, maintenance and operations. With rising energy development, we will see an increase in utility license applications and related evaluation work.

Increased rail and highway crossings on public land.

- Construction and maintenance for roads and bridges and new public transit connections will impact public land.[5] There will be no shortage of work managing crossings permissions in a state that has "4,444 rail route miles used by twenty different railroads." Minnesota's Department of Transportation predicts that "by 2030, rail traffic in Minnesota is projected to grow from 25 percent to 40 percent."[6]

The LAM office in Hibbing benefits from an array of solar panels.

United States Estimated Annual Output for Construction Aggregates



Produced and shipped for consumption in the United States.
Source: United States Geological Survey, 2015.

Construction aggregates (sand, gravel, & crushed stone) consumption continues to increase.

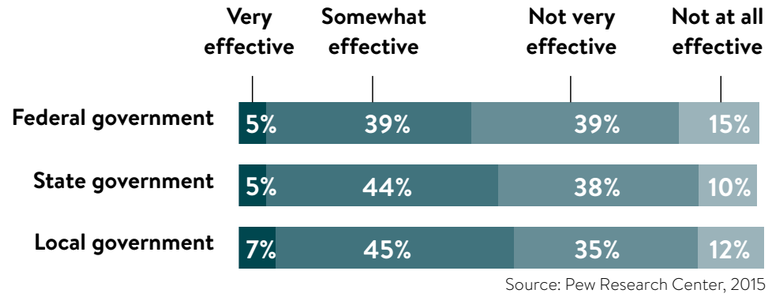
Because of increasing demand, LAM geologists are asked to map the location of sand and gravel deposits so that local governments have information to perform their responsibilities.

Demand for construction aggregate has increased since the 2008 economic recession.

- The demand for construction aggregates is on the rise. According to the United States Geological Survey, construction aggregates produced for consumption in the United States has increased 12 percent since 2010.
- In 2015, 2.5 billion tons of construction aggregates were produced and consumed in the U.S. That is equal to approximately 156 million truck loads hauling 16 tons of construction aggregates.[7]
- Lands and Minerals staff are responsible for mapping aggregate resources, and increased demand will cause a greater need for mapping services.

Government Needs to do Better at Sharing Data

Percent of adults who judge the effectiveness of government data sharing to be...



Source: Pew Research Center, 2015

A national survey indicates that governments need to do better at sharing their data. LAM provides many pages of new information on its public website every year.

Trend 3: Increasing demand for government information and communication.

Citizens expect open sharing of government information.

- As of 2015, 65 percent of Americans in the prior 12 months used the internet to find government data or information. However, less than 50 percent of Americans think state governments share data effectively.[8]
- To combat this trend, Gov. Mark Dayton called for modernization of "data collection and performance reporting at DNR to measure results, reduce costs, and improve public access to information" as part of the Better Government for a Better Minnesota initiative in 2013.[9]
- Lands and Minerals receives many requests from the public for data and information. Making information more easily available will help both the public and our staff be more efficient and effective.

Information made accessible to everyone is the new norm.

- In 2013, the state of Minnesota adopted the Minnesota State Accessibility Standard, which requires that all state information systems, tools, and information content comply with Web Content Accessibility Guidelines and Section 508 of the federal Rehabilitation Act. This means everyone is able to get our documents, maps, and other information, regardless of their ability.

65 percent of Americans use the internet to find government data.

Swan Lake water control structure and fish barrier. LAM staff collaborate with local governments and nonprofit conservation organizations to advance the DNR mission.

Many people visited the LAM exhibit at the 2016 Minnesota State Fair. This is one example of LAM communicating with the public.

LAM staff are committed to collaboration.

GOALS

Goal 1: Strengthen our commitment to collaboration and open communication.

Why is this important?
Because our purpose, context, and work is not always understood by the public, there is a need to do better at communicating. Once our work is fully understood, we are better positioned to operate more efficiently and strengthen our relationships within and outside of the DNR.

Strategies

- Improve the quality and increase the frequency of our communications with partners.
  - Stay engaged within the DNR on interdisciplinary teams to clarify our division's role within the DNR and build internal partnerships.
  - Grow existing connections with local government and nongovernmental organizations and build new relationships.
  - Take advantage of opportunities to give presentations, network, and share information at industry conferences to increase visibility and enhance our expertise.
- Build our understanding of partner and customer needs and perspectives.
  - Evaluate customer feedback to identify strengths, areas for improvement, and opportunities for innovation.
  - Maintain frequent communication with partners and customers to be better aware of collaboration opportunities and identify how we can improve.
- Increase public education efforts about LAM.
  - Develop a plan for building awareness around commonly unknown LAM work and issues.
  - Inform Minnesotans about mining practices, reclamation challenges, and benefits. Share current science on potential environmental impacts of mining, specific examples of cutting-edge mitigation practices and technology, and the benefits of mining to schools, the University of Minnesota, and local communities.
  - Promote minerals education by getting staff out into the schools and communities to teach students about the life cycle of mining and reclamation, our daily connection to minerals, and science careers.
  - Use public events like the Minnesota State Fair to increase awareness about the overall benefits of public land and Minnesota minerals.
- Grow awareness about the DNR's role as school trust lands administrator.
  - Work within the DNR and with the Office of School Trust Lands to identify how to better teach the public about how Trust mineral leases generate revenue for the permanent school fund, which provides important funding to public schools.

MNIT information technology specialists trouble-shoot the new Land Records System data model.

A geologist enters gravel observations into an iPad™. The geologist, in a trustee role, identifies School Trust parcels that contain sand and gravel.

Goal 2: Use new technology to gain efficiencies, expand information resources, and enhance operations.

Why is this important?
Across the private and public sector, technology is advancing at an unprecedented pace. Keeping up with these changes fosters a culture of innovation, improves business processes, helps us evaluate progress towards reaching goals, and helps us to meet new demands. Technology also gives us better access to information. More information means more informed decisions and better public service.

Strategies

- Maximize our ability to create, use and share data.
  - Be excellent data stewards by critically evaluating how to best collect, retain, share, and protect data.
  - Continue to use and improve the online land records system to ensure adequate long-term maintenance and accuracy of DNR's real estate information.
  - Make more data, maps, and information available for the public online.
    - For example, in 2015 Lands and Minerals revamped the State Nonferrous Metallic Minerals Lease Sale website for plain language, ease of access to information, and simplification of the lease sale process.
  - Take better advantage of our data for identifying and solving issues.
    - For example, survey staff often use geographic information systems (GIS) and other geospatial information to help identify where new boundaries need to be drawn and where we might find trespass problems.
    - Strategic land asset management work requires a broad range of data to assist in land transaction decisions. Data such as high mineral potential areas or old growth forest plots can influence how the DNR approaches land acquisition, sales, and exchange.
- Stay informed of advances in technology that can help us work more effectively and efficiently.
  - Encourage staff to identify and recommend new technologies that will save time and resources.
    - For example, make survey information easy to use on mobile devices.
    - Unmanned Aerial Vehicles (UAVs), such as drones, can improve data collection for monitoring and mapping state land interests at low cost.
- Train staff to integrate new technology into their daily work.
  - As we adopt new technology, it will be critical to offer training for staff on how to use these resources, including for existing tools like GIS or the land records system.
- Collaborate proactively with information technology providers to develop and improve tools and systems.
  - Work closely with MNIT and other technology providers to discuss and work together towards creating and improving technology systems that will enhance our work. For example, improvements to the land records system, web applications, or other electronic databases.

LAM staff embrace technology in order to be more efficient.

GOALS

The DNR Drill Core Library in Hibbing contains more that 3 million linear feet of bedrock drill core, which is boxed and catalogued for retrieval, so duplicate drilling is avoided.

Fiscal staff review the status of our accounts. They handle more than $46 million per year for mineral and real estate activities to ensure funds are taken from or sent to the correct accounts.

- Modernize our drill core library to continue high-quality maintenance of Minnesota's minerals records.
  - Prioritize meticulous archiving and documentation of historical data, including digitizing paper records and making information more easily available to the public, universities and industry.

LAM sells gravel from School Trust lands via leases to mining companies. Sieves (or screens) are used to determine the gravel particle size distribution to set the gravel royalty price.

Goal 3: Foster a highly-skilled, nimble, and engaged workforce.

Why is this important?
Operational excellence is achieved only by highly-skilled and dedicated employees. By recruiting and retaining the best team, Lands and Minerals can be ready for the future of the minerals and real estate work we do for Minnesotans.

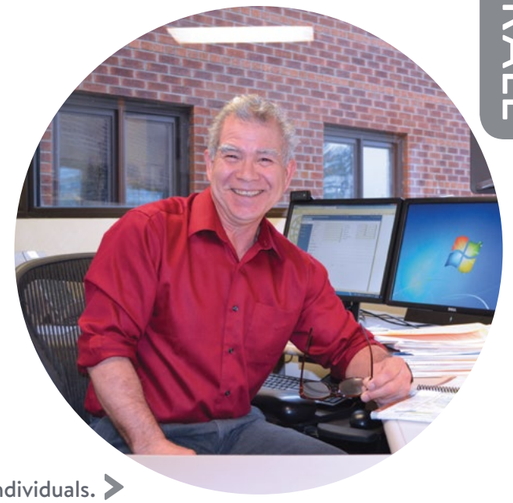
Strategies

- Foster a learning environment where employees develop new skills and share knowledge.
  - Provide clear pathways for career development and advancement.
  - Promote formal and informal mentorship opportunities to support leaders and positive workplace relationships.
  - Offer shadowing opportunities for staff to "put themselves in someone else's shoes" while on the job.

- Proactively recruit talented and diverse individuals.
  - Be more focused in recruitment efforts and job advertising by reaching out to schools, colleges and universities, and related industries to help promote opportunities.
  - Work with human resources to understand how to better attract people of all backgrounds to Lands and Minerals jobs.
  - Identify where future skills are needed and plan for growth in those areas.

- Ensure stable funding of the division's priorities by promoting fund health, simplifying processes, and increasing flexibility.
  - Address fund deficits and unpredictability of revenues.
  - Evaluate current fund requirements in order to identify how to streamline complicated mechanisms.
  - Increase funding flexibility across the division's budget.

- Develop practical succession plans to weather retirements and staff turnover.
  - Ensure succession plans are developed for staff who are retiring or leaving with sufficient notice.
  - Consistently conduct exit interviews to learn how the position or environment could be improved.



LAM proactively recruits talented and diverse individuals.

Moccasin Point on Lake Vermilion, a popular recreation destination in northern Minnesota. LAM staff managed the acquisition of this public water access site.

LANDS

TRENDS

Trend 1: Land transactions are increasingly complex.

Demand for land will increase as our population continues to grow. The State Demographic Center projects Minnesota's total population will exceed 6 million by 2032, and will expand to 6.8 million by 2070.[10] Land scarcity will affect how land is acquired, sold, and exchanged.

- Land use plays a role in this trend as well. Demands for different types of land use, from agricultural to industrial to natural resource preservation may have to compete for highly valued acres.

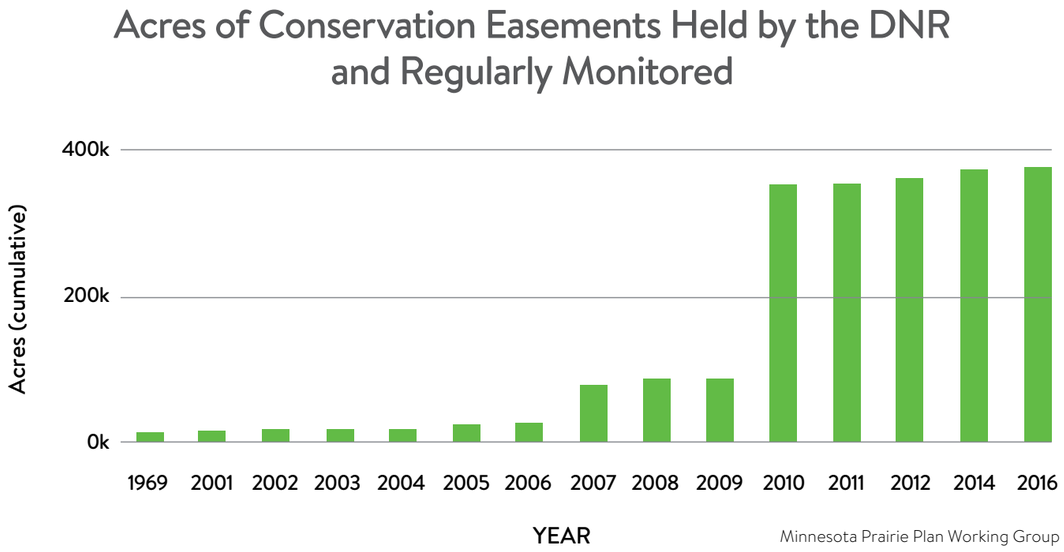
Brown's Creek State Trail, a 6-mile paved trail connecting Stillwater and the Gateway State Trail, was partially funded with Legacy Funds. LAM staff managed the acquisition of necessary easements for the trail.

Acquisitions, sales, or exchanges often occur now in order to resolve an increasing number of land use conflicts on public land.

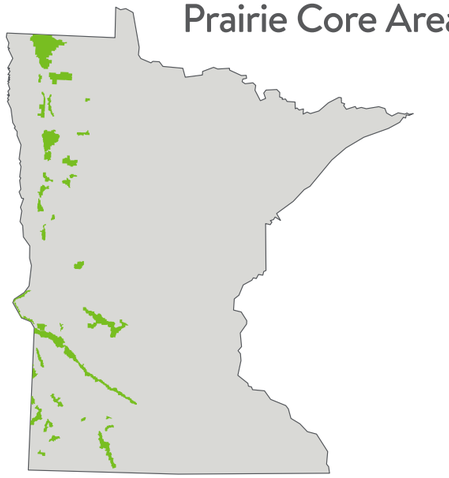
- For example, encroachments (or trespasses) can occur by private landowners or the DNR. Many encroachments are unintentional because assumptions are often made about where boundary lines exists on the ground.

Number of easements and acquisitions for conservation have increased since 2008.

- According to the Minnesota State Office of the Legislative Auditor, "over the last 10 years, the number of state-funded conservation easements and the amount of land protected with these types of easements has more than doubled." The auditor's office attributes this increase "in part to the increased funding available for conservation easements from the 2008 approval of the Legacy Amendment to the Minnesota Constitution."[11]



A parcel of remnant native prairie that LAM staff helped acquire.



Prairie core areas identified in the Minnesota State Prairie Plan, 2011.

- The Legacy Amendment also caused an increase in acquisitions for conservation overall, specifically by nongovernmental organizations. As a result, many of these organizations will then donate newly acquired land to the DNR, expanding public land for conservation. Many parcels are restored and enhanced before they are donated to the DNR.
- Acquisition and conservation easements have been a critical component of native prairie and grassland preservation in the southern and western parts of the state. Increasing focus on preserving these areas has been a DNR priority as outlined in the Conservation Agenda and the Minnesota Prairie Conservation Plan.[12] With more easements comes more monitoring of parcels to ensure proper management and good long-term stewardship.

LAM is responsible for overseeing easement transactions and advises other DNR divisions regarding easement monitoring, which ensures landowners are meeting management requirements.

Pre-existing errors in property titles and encumbrances also make land transactions more complex.

- Conditions, covenants, or restrictions on parcels can complicate land transaction processes. These limitations may not be known early on in the acquisition, sales, or exchange process and can delay processing or prevent the transaction altogether.
- For example, the Lands and Minerals and Forestry divisions recently worked together to resolve a small encroachment on a conservation easement. There were funding restrictions on the conservation easement because it was acquired with federal funds, state bond funds, and funds from the Environment and Natural Resources Trust Fund. The DNR proposed resolving the encroachment by releasing the affected portion of the easement after payment by the landowner. To complete the partial easement release, the DNR had to obtain prior approval from all three funders and repay the money.

Trend 2: Heightened public interest in land ownership, use, and management.
Competing demands between public and private land ownership is a consistent debate in many parts of the state.

- For example, there are several counties in Minnesota that encourage a “no net gain” policy. This policy can impede new acquisition of public land because it requires sale of state land in the same county to ensure no additional acres of public land are added.

Public input regarding land use and management influences our land asset decisions more than ever.

- However, we acknowledge not all Minnesotans share the same vision for the land. Public opinion debates exemplify the challenge in finding balance between the economic and conservation aspects of the DNR’s mission, and the division’s role in expediting associated land transactions.

More inquiries from the public about the DNR’s role as a landowner and manager.

- Staff have experienced higher numbers of inquiries from the public in recent years. Questions are generally related to boundaries, ownership history, or management plans, among others.
- Providing thorough answers to these inquiries involves detailed research, resolution, and explanation. This work also calls into question issues of data sharing and what is private versus public information.

Trend 3: Land information and data are more accessible and in greater demand than ever before.
Remote sensing, aerial photography, GIS, and the land records system have made information about public land easier to obtain, use and analyze. However, ease of access can also become complicated if information is misinterpreted or unreliable.

- Data enhances our ability to make better comprehensive decisions about land. For example, the strategic land asset management program uses a web-based GIS tool to input, review, and categorize proposed land transactions.
- The Land Records System keeps a detailed database of past, current, and potential land transactions. Everyone at the DNR uses this information, ensuring the information is presented and communicated consistently.
- As more data is available, data requests from internal and external interest groups increase.

Real estate staff collaborate with other DNR division staff on strategic management of public land.

Land transaction procedures require more information about each parcel as new data becomes available.

- For example, new ecological assessment data identifies if species of greatest conservation need are present on a proposed parcel for sales, exchange, or acquisition.

LAM real estate staff handle the sale of DNR lands.

Trend 4: Real estate funding changes and digital boundary data demands affect land survey work.

Interviews with interested parties revealed a significant need for additional land survey work for trespass issues, forest lands, and other conservation lands. For example, the Fish and Wildlife Division reported needing 300 surveys for aquatic management areas in 2016, many of which have trespass issues that need to be resolved to protect the state's interests. However, due to changes in DNR's real estate funding, Fish and Wildlife and other divisions have decreased the amount of survey work requested since 2012.

External agencies such as the Minnesota Department of Transportation and the Minnesota Pollution Control Agency have requested that Lands and Minerals conduct new survey work in recent years, which has positioned the section differently across the state government system.

We have also seen increased demand within the DNR and by partner counties to provide shareable digital boundary data and maps in the Land Records System.

GOALS

Goal 1: Enhance strategic management of public lands.

Why is this important?
The DNR manages approximately 5.6 million acres of land statewide. This land provides vast conservation, recreation, and economic opportunities for Minnesotans. To help the DNR achieve its mission, it is critical that the division be collaborative and strategic in acquiring, exchanging, and selling land. Lands and Minerals staff work across the department, and with external partners and landowners to ensure the department is enhancing DNR-administered land.

Strategies

- Collaborate and provide leadership on strategic land asset management.
  - Work with our colleagues in other DNR divisions to improve the conservation value and management efficiency of DNR lands.
  - Advance a comprehensive and efficient approach to land decision-making processes.
  - Prioritize external outreach about land asset decisions by better communicating and collaborating with local government units, non-governmental organizations, and the legislature.
  - Work with the Office of School Trust Lands to put in place strategic directions for school trust land management.
- Facilitate resolution of land management issues.
  - Lead the DNR as experts, facilitators, and mediators for resolving land-related issues, including differences of opinion on land use priorities and disputes between the DNR and landowners on trespass and boundary concerns.
  - Work across the division, department and the state to prevent land management or ownership issues from occurring, but resolve them quickly and effectively without legal action where possible to save time and money.
- Renew focus on our role supporting the DNR's conservation easement stewardship program.
  - Help create a web-based conservation easement monitoring application.
  - Work collaboratively within the DNR and partnering agencies such as the Board of Water and Soil Resources to make sure the program is effective.

Goal 2: Provide the foundation for the DNR's natural resource work by coordinating public land transactions.

Why is this important?
It is important for Lands and Minerals to work with our customers to accurately review project requests and to deliver real estate services for the citizens of Minnesota. We function as real estate experts for the DNR. We often serve as vital liaisons between the public, landowners, industry, various interest groups, attorneys, taxing districts, cities, counties, and the federal government.

Real estate staff are responsible for facilitating land sales and exchanges of public land as well as acquisitions.

Real estate staff collaborate early on a large utility project that crosses public land and water in Northern Minnesota.

We are project managers and technical experts when the department is acquiring, selling, exchanging, and leasing land. And we grant utility licenses and conservation easements in good faith. In these roles, it is essential to work closely with our internal and external customers so transactions are smooth, vetted, and timely.

Strategies

- Maximize efficiency of land transaction processes.
  - Lead efforts to review and improve land transaction processes for effectiveness and efficiency while ensuring we are accurate and diligent in meeting statutory requirements.
  - Manage customer expectations regarding time and involvement.
    - Clearly communicate the required steps and predicted time to closure.
    - Continue to communicate so all stakeholders know where each project is at all times.
  - Advocate for logical statutory changes to streamline real estate transactions.
- Provide early consultation on transactions that involve DNR-owned and managed land.
  - Early consultation helps staff avoid needless delays and outlines upfront the need to protect natural resources. Easements, utility licenses, leases, acquisitions, sales, and exchanges can all benefit from early consultation.
- Develop and recruit licensed lands professionals with the right skills and knowledge to deliver the highest quality results.

Goal 3: Leverage partnerships by cultivating strong relationships and embracing flexibility.

Why is this important?
Developing partnerships is critical for the entire division, but lands work requires a slightly different approach. Historically, land decisions were made independently of interest groups and the public, which made business easier, but less supported. Now, the public and partners like counties and nonprofits want to influence land decisions. This requires a collaborative spirit internally and externally, and also the flexibility to find and carry-out creative solutions.

Strategies

- Build relationships with local governments, nonprofits, and other organizations.
  - Work closely with nongovernmental organizations and partners to better understand our shared goals and priorities.
  - When working together, clearly define expectations and commitments for all parties as well as clarifying roles.
  - Promote networking to restore institutional relationships and knowledge that may have faded with recent retirements or turnover.
- Strive to build resilient relationships and promote open collaboration across the DNR.
  - Work with regional directors and regional management teams to ensure clear and effective communication department-wide about land issues.
  - Keep in close communication with other DNR divisions throughout the real estate transaction process.
  - Seek to learn what challenges and goals other DNR divisions have in order to better serve their needs and the DNR's needs.
  - Clearly communicate up front any possible challenges or conflicts that may arise and discuss how to effectively address them.

Legal staff work daily on DNR real estate transactions.

- Develop measured communications plans for projects with statewide scope or importance to ensure "the right people are in the room" to make critical decisions.
- Capitalize on ability to use remote working technologies to stay connected and informed.
- Promote cross-training opportunities formally and informally across location, work area, and hierarchy.

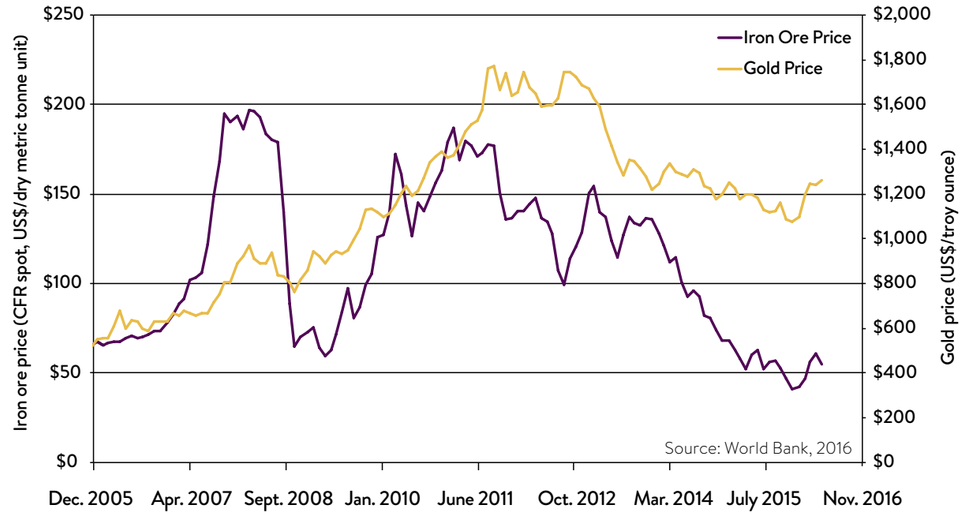
Goal 4: Evaluate and define the future role of lands survey work within the DNR.

Why is this important?
The Survey Section of Lands and Minerals provides survey services for the entire DNR. Services include: conducting boundary and topographic field surveys, preparing field survey maps, reviewing legal descriptions for real estate transactions with a focus on land acquisitions and road easements, providing survey data to local governments and private parties, contracting for land surveying services from outside parties, and conducting survey research work. While there continues to be outstanding trespass and other land boundary issues, the amount of DNR survey work requested in recent years has decreased, in part due to funding challenges. The trends listed above necessitate that the DNR takes a hard look at the future work of the Survey Section and develops a plan for future operations.

Strategies

- Convene a department working group to evaluate the future roles and responsibilities of the DNR's survey program. The group should consider current and projected survey demand internally and externally, within the overall lens of funding trends and department needs.
- Design an implementation plan that presents long-term options for new or revised Survey Section work.
- Coordinate Survey Section planning efforts both within the DNR and with our external customers.

Price of Iron Ore Compared to Gold from 2005 to 2016



Gold and iron prices are often divergent, as in 2016. If another mineral such as gold were mined in Minnesota, local economies would be more diversified and better positioned to weather the ups and downs of mineral economic cycles.

MINERALS

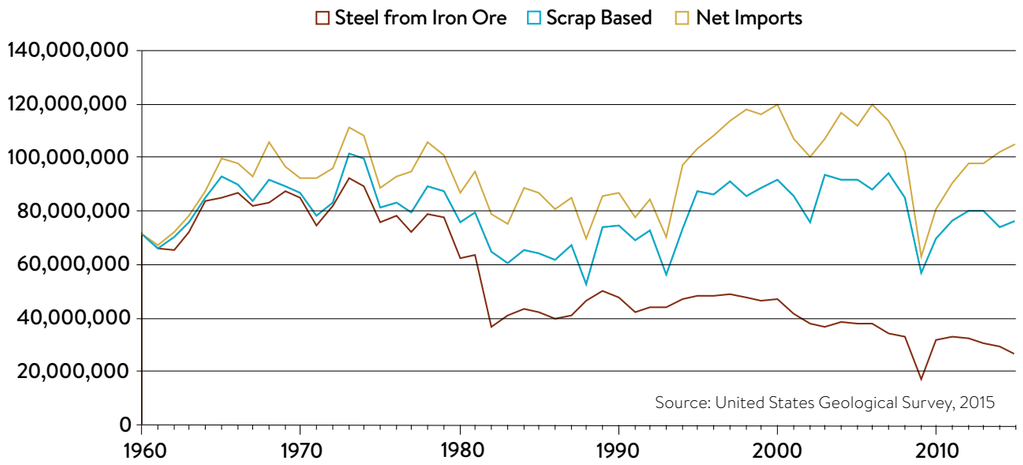
TRENDS

Trend 1: Mining business cycles fluctuate with global metal prices and new mineral demands. Minnesota's iron industry has experienced significant ups and downs in the last century, and continues to feel the effects of fluctuating prices and demand today.

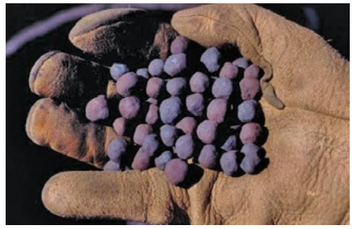
- In recent years, the downturn of global iron prices forced several plants to close for short and long terms in 2015.[13]
- Extreme highs and lows of iron prices cause more frequent re-negotiation of taconite royalties. Royalties are payments made to the mineral rights owner (such as the School Trust) by the lessee (companies) for each ton removed from the parcel.

LAM geologists collaborate with MnDOT on certain projects.

Dimension Stone Quarry in Northern Minnesota.



The market share for steel produced in the U.S. by the blast furnace process that uses taconite pellets has declined by >50% since 1975, so there is less demand for Minnesota taconite pellets.



Taconite pellets are made at Minnesota iron mines.

Boston University, 2010

Electric vehicles use lithium ion batteries.

- More research and innovation is taking place to produce higher value iron products such as direct reduced iron (DRI) and iron nuggets to broaden the market to electric arc steelmakers.
  - For example, a new superflux pellet is one instance of a higher value iron product that is becoming more competitive in the marketplace.
  - Minnesota taconite pellets feed old technology (blast furnace steel production), which is declining. New Minnesota iron ore products, such as pig iron, are needed to supply the growing cleaner market of electric arc steel making.

Demand for minerals is increasing as global population grows and standard of living rises in many countries.

- Demand for metals used to manufacture cell phones, batteries, computers, and many other products used in daily life, will likely continue to grow in the future.
  - For example, demand for lithium is growing steadily due to its use in products like rechargeable batteries for new energy-efficient electric vehicles. The price of lithium in 2016 was nearly double its price in 2015.[14]
  - There is potential for lithium resources in Minnesota's bedrock.

A public meeting in Duluth for a Draft Environmental Impact Statement in 2014. LAM mine permitting experts were part of the team that organized the meeting.

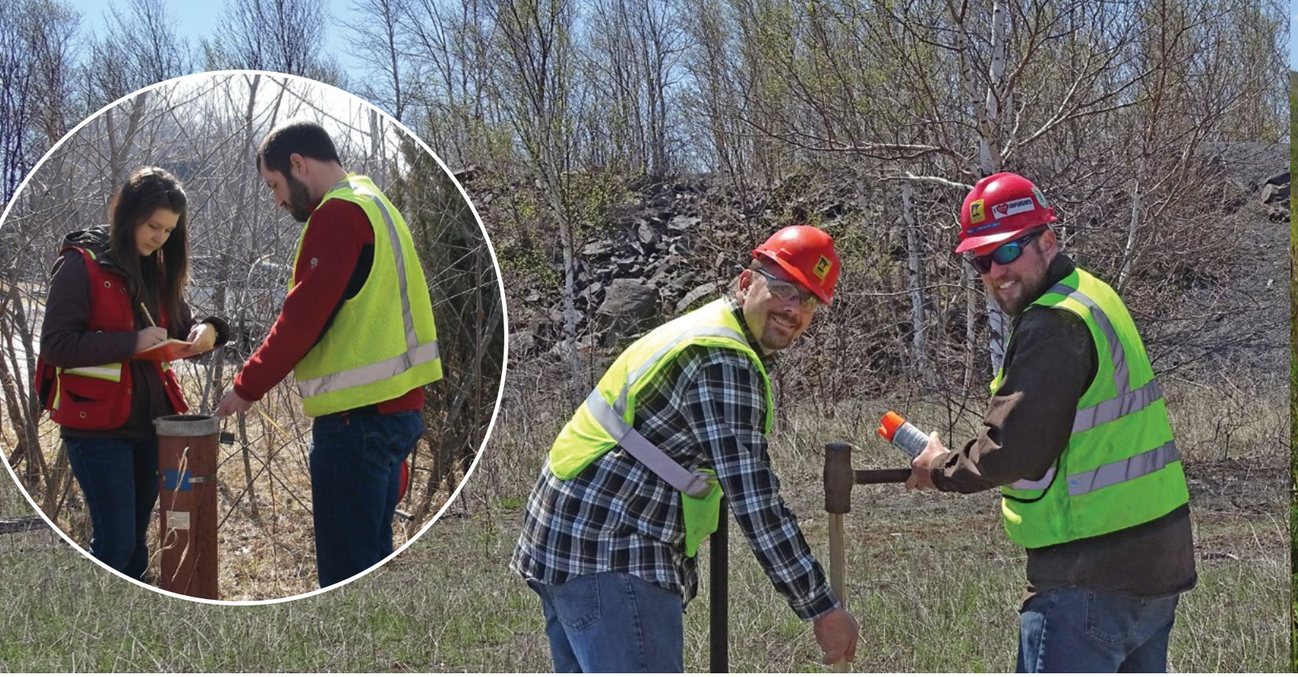
- As future mineral demands emerge, Lands and Minerals will need to be prepared for its roles in communications, leasing, permitting, litigation, revenue accounting, and compliance.

Global mineral demand and supply impact Minnesota's mineral sector.

- Minnesota mines are influenced by changes in international metal prices and as a result, must compete with both domestic and international companies for business.
- Foreign subsidized steel dumping in the U.S. brought shutdowns to Minnesota iron mines and greater state and federal intervention on steel dumping in the United States.[15]
- International investors are needed to cover capital costs in the billions of dollars for metal exploration and mining. Minnesota is in competition with 100 other jurisdictions for investment capital needed for mining development and continued operations.[16]
- The construction aggregates sector in Minnesota has recently seen consolidation, but these consolidated companies have larger individual market capitalization and operate over even larger regional or multi-state areas.[17]

Trend 2: Higher public expectations for access to information, involvement in decision making, and government transparency.
Minnesota has seen unprecedented levels of public engagement concerning the potential environmental impacts of both ferrous and nonferrous mining operations. For example, one environmental impact statement received a record-breaking 58,000 public comments and 4,000 people attended three public meetings in 2014.

- Lands and Minerals has responded to increased demand for information access in a variety of ways. For example, since the early 2000s there have been additional public notices on the DNR's website, more public meetings, and more opportunities to provide input.



Hydrologists measure the groundwater level in a monitoring well.

Mineland reclamation specialists inspect an iron mine to verify that the site has been re-established to a safe and stable condition for the long term.

Iron mine stockpile that has been reclaimed to a safe and stable condition.

A vacuum machine that harvests peat moss at a peat mine. LAM mineland reclamation specialists inspect peat mine reclamation.

- Partner and interest group involvement is growing as well. Lands and Minerals and other divisions in the DNR work with local, regional, and federal government entities; tribal governments; and special interest groups to provide comprehensive and inclusive information gathering before decisions are made.

Trend 3: Greater complexity and oversight of environmental regulations for air, water, and financial assurance.

Policies for mining and reclamation evolve as new data and information become available.

- Mine land reclamation rules require companies to reclaim areas that have been disturbed by mining activities.
  - › For example, there has been a recent shift to establish native plants as the final vegetation for reclamation as we learn more about the detrimental effects of invasive species.
- We have better information about the risks of environmental contaminants such as mercury in our air. As a result, new standards for lower levels of mercury were established by the Minnesota Pollution Control Agency. These policies also drive technological innovation in the minerals industry to reduce overall risks to the environment.

Increased demand for government oversight and mining inspections.

- In part due to public interest, we have seen more oversight and involvement from higher levels of government in terms of evaluating mining opportunities and related regulations to ensure the right decisions are made for Minnesota.
  - › For example, in 2012, the U.S. Forest Service completed an environmental impact statement on mineral exploration activities in Superior National Forest that found no long-term environmental impacts from exploration.[18]
- The DNR has also received many requests in recent years to publish more data about mine reclamation inspections.

GOALS

Goal 1: Minimize environmental impact of mining by maintaining high permitting and reclamation standards, conducting rigorous research, and ensuring compliance.

Why is this important?

To accomplish the DNR's mission, it is critical that we increase our knowledge about what works to reduce the environmental impacts of mining. Like any major industrial activity, mining alters the landscape, can impact water quality, and may spread invasive species. Some of these impacts can be mitigated if best operational practices based on science and experience are used by the industry. To better serve the public and Minnesota's natural lands, waters, and wildlife, we will undertake the following strategies to promote best practices in mining operations, ensure industry compliance, protect Minnesota taxpayers, and control possible adverse effects of mining.

Minnesota Statute 93.44 (2015):
In recognition of the effects of mining upon the environment, it is hereby declared to be the policy of the Minnesota Department of Natural Resource's Lands and Minerals Division to provide for the reclamation of certain lands...where such reclamation is necessary, both in the interest of the general welfare and as an exercise of the police power of the state, to control possible adverse environmental effects of mining, to preserve the natural resources, and to encourage the planning of future land utilization, while at the same time promoting the orderly development of mining, the encouragement of good mining practices, and the recognition and identification of the beneficial aspects of mining.

Before any permits for a mining project are issued, an environmental review is conducted by the DNR's Ecological and Water Resources Division. Lands and Minerals is involved in the DNR's environmental review but does not have decision authority at this stage. The environmental review process provides information to agencies to inform regulatory decisions, and at completion, the Ecological and Water Resources Division makes a decision on the adequacy of the review document.

After environmental review, Lands and Minerals has key responsibilities in permit decisions for construction and operation of a mine, for water appropriations and for reclamation. The state, the public, and the industry are best served when the DNR works with others to make informed, timely decisions that minimize environmental impacts. We make sure mining companies adhere to regulations, properly apply for and operate within permits, and reclaim the landscape for future uses when mining ends.

Geologists discuss the locations of economic peat moss resources on DNR managed lands.

Strategies

- Develop a comprehensive compliance framework for regulatory processes around mining.
  - Increase interagency coordination efforts for more seamless and efficient regulatory work.
  - Strive to increase understanding of regulatory process and implications of noncompliance.
  - Clearly communicate the steps needed to ensure compliance, who to contact with questions, and what to expect during inspections.
  - Use this framework as a tool to help build relationships and trust with mining communities, industry, and others with a stake in the outcome.
- Use applied research to advance innovative solutions to environmental issues, inform decision-making, and advocate for industry best practices.
  - Make the direction and results of reclamation research readily accessible to the public, partners, and industry.
- Strengthen and diversify our approach to financial assurance to protect state resources.
  - Annually review our approach to financial assurance to ensure continued protection of taxpayer dollars.
- Collaborate closely with partners, including other DNR divisions to provide more diverse and flexible post-mining opportunities.
  - Seek to identify internal partners that will help us find uses for land post-mining that might benefit other aspects of the DNR mission such as recreation or conservation without limiting future trust revenue. For example, mountain biking on reclaimed mine lands at Cuyuna Country State Recreation Area.

A birds-eye view of the City of Virginia and a nearby iron mine.

Goal 2: Advocate for mineral development strategies that seek balance between environmental protection and economic development that supports job growth and communities.

Why is this important?
Minnesotans demand stringent environmental standards, financial assurance, and compliance with all related mining rules. Mining requires substantial capital and carries risk, which is borne by private investors and companies. Lands and Minerals operates at the interface between these parties, as it deals with private investors, mining companies, and the state's mining laws. The division is also uniquely positioned to facilitate long-term planning and communication efforts related to Minnesota's mineral future.

Strategies

- Convene stakeholders in a long-term conversation on the vision of future mining in Minnesota.
  - In partnership with the Minerals Coordinating Committee, work with the public, other governmental agencies, nonprofit organizations, and industry to better define what the future of mining should look like in our state.
  - Inform the public on the importance of mining and environmental protection and post-mining land uses.
- Provide guidance on and encourage comprehensive industry participation in gaining community trust and support to operate.
  - The importance of gaining community trust and support to operate is a critical success factor for many mining companies. Also known as gaining "social license," this effort has become a best practice of social responsibility in mining and other industries.
  - While the DNR is not directly involved in trust-building between companies and communities, Lands and Minerals can advocate for, encourage industry participation in, and provide guidance on social license efforts.
- Perform a comprehensive review of state land designations and their relationship to minerals management.
- Lead and coordinate the state effort to support diversification of the minerals sector economy.

How DNR's Work Impacts Minnesota Public Schools

LAM staff work in a Trustee role to generate net revenue for the Permanent School Fund from School Trust lands. The market value of the Permanent School Fund on December 31, 2016 was $1.3 Billion.

The Minnesota State Constitution created a framework to establish a long-term funding source for public schools through the creation of the Permanent School Fund (PSF or Trust). Minn. Const. art. XI, sec. 8. One source of income to the PSF is revenue generated from School Trust lands. In addition to the Constitutional directive, the Minnesota Legislature has stated that the goal of the PSF is to: "....secure the maximum long-term economic return from the School Trust lands consistent with both the fiduciary responsibilities imposed by the trust relationship established in the Constitution, with sound natural resource conservation and management principles and with other specific policy provided in state law." Minn. Stat. § 127A.31. This statutory language must be read to be consistent with the obligations set forth in the Constitution to the extent possible, but when the two are inconsistent, the Constitutional obligations control and must take precedence. The DNR acts as a trustee of the lands with fiduciary responsibilities to the beneficiaries of the Trust.

Goal 3: Excel as stewards of public mineral ownership by conducting innovative research, optimizing revenue generation, and supporting a diversified minerals economy in Minnesota.

Why is this important?

Mining is part of Minnesota's history and plays a significant role in the state's economy. A diverse minerals economy is important because it prevents overreliance on one sector, which could be a financial risk to the state and industry alike if demand shrinks. In 2013, Minnesota generated approximately $4.6 billion in nonfuel mineral production. This was the third highest production rate among all states, and accounted for more than 6 percent of total U.S. production.[19] Iron ore is the principal mineral produced in Minnesota; diversifying the minerals economy would lessen the negative impact of iron mining downturns.

Mining and leasing of state minerals creates direct revenues to the School Trust, University Trust, and local taxing districts. The Minnesota Constitution established the Permanent School Fund to ensure a long-term source of funds for public education. Revenue is generated by economic uses of the land, and mining of Trust minerals has provided 90 percent of the fund's principal.[20] As of December 31, 2016, the market value of the Permanent School Fund was $1.3 billion.[21] In addition, the University Trust generated approximately $3.1 million in scholarship funding for 1,500 resident undergraduate students in the University of Minnesota system in 2015-2016.[22]

Strategies

- **Gain a better understanding of Minnesota's minerals and their economic potential.**
  - Research and promote development of new types of value-added iron ("direct reduced iron-ready" pellets), titanium, and stone products.
  - Identify new mineral leasing opportunities by conducting applied geoscience projects that will help us classify state lands with high mineral potential.
- **Facilitate private investment in Minnesota minerals.**
  - Promote Minnesota as a destination for mining by communicating state mineral leasing opportunities, availability of our world-class drill core library, and extensive historical exploration archives to explorers, investors, local government units, and the public.
  - Collaborate with higher education institutions on cooperative research projects and consult with industry experts to learn more about the state's mineral deposits and potential.
  - Communicate the state's perspective on environmental and financial assurance standards.
- **Refocus on mapping the state's construction aggregate resources.**
  - New demands for construction aggregate resources require more data and information about location and potential.
  - Provide information directly to local governments that require construction aggregate resources data for their land use planning process.
- **Ensure that mineral potential is considered for surface land planning.**
  - Reunite state surface and mineral ownership in high mineral potential areas to allow for state mineral leasing and exploration access.
- **Negotiate royalties, encumbrances, and leases in the best interest of the beneficiaries.**
  - Work to get the optimum return from mineral leasing operations to support public education and local taxing districts.

Geologist examines this gravel on School Trust land for certain minerals that may reduce its royalty value. LAM staff work as a team to obtain a fair market value for minerals owned by the Trusts.

APPENDIX A: STRATEGIC PLANNING PROCESS

The Lands and Minerals strategic planning team met for close to a year to develop a vision for the division and its strategic plan. Staff on the team led the planning process, with input from division leaders. The following list describes discussions and decisions the team worked through during planning.

1. Initial scoping of planning project.
    - Compile historical information about the division for background context.
    - Reflect on division's "image" – both positive and negative associations and why the public may have those perspectives.
2. Identify important trends that are currently impacting the division and are expected to impact the division over the next 10 years.
    - Gather input from all lands and minerals staff through interviews and the annual all staff meeting.
    - Hold small group discussions with each of the six other DNR divisions.
    - Interview external stakeholders.
3. Discuss and identify important goals that will help the division address those trends over the next 10 years.
    - Gather input from all lands and minerals staff through interviews and the annual all staff meeting.
    - Hold small group discussions with each of the six other DNR divisions.
    - Interview external stakeholders.
4. Staff received stakeholder interview recommendations and project managers and division leaders reviewed them. All stakeholders are important and have a critical voice in our work; however, due to staffing, we weren't able to interview every single stakeholder. At least one of the following provided feedback and ideas.
    - Internal stakeholders: Lands and Minerals staff, various DNR staff from each of the six other divisions (Fish and Wildlife, Parks and Trails, Ecological and Water Resources, Operations, Enforcement, and Forestry)
    - Office of School Trust Lands
    - County and other local government representation
    - Private landowners
    - Conservation organizations that acquire land
    - Federal government
    - State government (e.g., Revenue, Administration, MNIT)
    - County highway departments
    - Private energy and utility companies
    - Information technology companies
    - Environmental interest groups
    - Mining companies
    - Higher education institutions
    - Economic development organizations
5. Analyze all information received and finalize trends, goals, and strategies.
6. Work as a team to prioritize important strategies that will help accomplish our goals.
7. Provide opportunity for review of concepts by division staff and management.

APPENDIX B: LANDS AND MINERALS GLOSSARY

Covenant
An agreement, usually by lease, deed, or legal contract.

Easement
A right to cross or use someone else's land for a specific purpose.

Encumbrance
A right to, interest in, or legal liability on property that does not prohibit passing title to the property but that diminishes its value. It may be financial (e.g., liens) or nonfinancial (easements, private restrictions).

Fee Title
A real estate term referring to the type of ownership giving the owner the maximum interest in the land, entitling the owner to use the property in any way as long as it complies with federal, state, and local laws and ordinances.

Mineral Endowment
The total mineral endowment of an area is composed of known resources and undiscovered resources.

Mine Land Reclamation
Reclamation is completed once mining operations have ended. It helps control adverse environmental effects of mining, preserve the area's natural resources, encourage planning of future mine land use, and encourage good mining practices.

Mineral Royalties (also Taconite Royalties)
Mineral royalties are regular payments made by mining companies to the state or other mineral resource owners (usually based on the volume or price of minerals extracted) as compensation for the right to exploit those mineral resources.

Ferrous/Nonferrous
The word ferrous refers to minerals mined to recover and sell the iron content (e.g. iron ores). "Nonferrous" refers to minerals mined to recover and sell other metals such as copper, nickel and gold.

Permanent School Fund
The Minnesota Constitution established the Permanent School Fund (PSF) to ensure a long-term source of funds for public education in the state. The PSF consists of the accumulated revenues generated from the land.

School Trust Lands (also University Trust Lands)
Lands granted by the United States Congress to states upon entering the Union. These lands were designated to support essential public institutions, primarily public schools. State trust land managers lease and sell these lands to generate revenue for current and future designated beneficiaries.

Tax-forfeit Land Sales
These sales occur when a person or organization can no longer make payments on their property. The county or state then takes ownership of the property and works together to sell the property to someone else.

Tax-forfeit Mineral Rights
Any conveyance of forfeited lands shall be subject to exceptions and reservations in this state, in trust for the taxing districts of all minerals and mineral rights.

Utility Licenses
Must be obtained from the DNR for the passage of any utility crossing over, under, or across any state land or public water.

ACKNOWLEDGMENTS

We would like to acknowledge the many people who helped shape and develop this plan from beginning to end.

The Lands and Minerals Division Strategic Planning Team. Not pictured: Andrea Johnson and Joe Fleisher.

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All partners and stakeholders interviewed, your time is very much appreciated

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Printed June 2017

Printed on Minnesota-manufactured, recycled paper containing 10 percent post-consumer waste and with vegetable-based inks.