



# Strategic Plan

*(Created: June 2019)*

*(Revised: August 2019)*

## Core Ideology (Timeless)

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**Core Ideology** describes an organization's consistent identity that transcends all changes related to its relevant environment. Core ideology consists of two elements: the **Core Purpose** – the organization's reason for being – and **Core Values** – essential and enduring principles that guide the behavior of an organization.

### Core Purpose (Mission)

SME serves the mining, resources, and underground construction communities for a sustainable future.

### Core Values

- Safety
- Stewardship
- Innovation
- Ethics
- Inclusion
- Collaboration

## Long-term Envisioned Future (10+ Years)

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The **envisioned future** conveys a concrete yet unrealized future for the organization. It consists of a **vision** – a clear and compelling catalyst that serves as a focal point for effort and a **vivid description**, which is a vibrant and engaging description of what it will be like to achieve the vision.

### Vision

Building a better world through mining, metallurgy and underground construction.

*Original draft: To be the premier community building a better world through mining, metallurgy, and underground construction.*

### Vivid Description of a Desired Future

Through active engagement in SME, the mining, metallurgy, and underground communities are experiencing the benefits of working together to solve common challenges and to create solutions for building a better world. Cleaner water, stewardship of water energy, clearer air and more efficient energy supply are top priorities. Tailings have been eliminated. The communities are united in sharing practices leading to thriving businesses and a safer and more energy efficient world.

Mining is recognized as safe, environmentally sustainable, socially responsible, and necessary for worldwide economic growth. Mining and underground construction are attractive professions for next generation workers and industry retention is up. Technology is being used effectively to attract new workers and to transform practices. SME is at the center of the mining, metallurgy, and underground communities igniting innovation, providing education, and leading change within the business environment and in support of the professional within it. SME members have adopted more efficient metallurgical processes and are using better performing materials and improved discovery technologies. SME recognizes innovation and high ethical performance of its members. SME's programs and services are considered of high value and essential for business success and, yes, mining, metallurgy, and underground construction have contributed greatly to making a better world.

## Goals and Objectives (three-five years)

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**Goals** represent **outcome-oriented statements** intended to guide and measure the organization's future success. The achievement of each goal will move the organization towards the realization of its "Envisioned Future." Supporting **objectives further clarify direction** and describe what the association wants to have happen; in other words, a descriptive statement of what constitutes success in measurable terms.

**Priority Key:** (I) = Must begin objective in next fiscal year; (M) = May begin objective, if resources permit, in next fiscal year; (L) = Begin objective in subsequent fiscal year

### I. Industry Innovation

**Goal:** SME is the venue of first choice for disseminating research leading to innovation and encouraging its applications in mining and underground construction.

**Objectives:**

1. Expand opportunities to disseminate and present innovation research. (I)
2. Encourage the application of innovation research results. (L)
3. Stimulate innovation by learning from setbacks. (L)

**Possible Strategies:**

- Create "call for papers" opportunity of innovation.
- Create a point person to centralize opportunities for disseminating innovative research.
- Create a lecture series on innovation.
- Identify case studies on success and failures.
- Create an opportunity to showcase innovation.
- Collaborate with other innovators.
- Expand innovation award.
- Revise PhD career grants to include an innovation component.

### II. Industry Workforce

**Goal:** Mining, metallurgy, exploration and underground construction are careers of choice.

**Objectives:**

1. Stabilize academic program capacity. (I/M)
2. Share best practices for recruiting a professional workforce. (L)
3. Assist employers to attract and maintain a quality workforce. (M)
4. Explore ways to retain an early career workforce. (M)
5. Recognize and support changing professional development needs. (L)

**Possible Strategies:**

1. Stabilize academic program capacity. (I)
  - a. Collect/analyze data
  - b. Ad hoc education committee
  - c. Revise Guide to Minerals Schools
  - d. University 101 for industry leaders

- e. PhD/Career Grants
  - f. Train Professors/UCA
  - g. Summer jobs for faculty
2. Increase programs to recruit a skilled and professional workforce. (L)
    - a. Videos
    - b. “Down for That”-UCA
    - c. Send professionals to schools for talks
    - d. Programming for Health & Safety (registration, recruiting...)
      - i. Holmes Safety Program
  3. Increase programs to retain an early career workforce. (M)
    - a. Revamp mentoring program
    - b. Revamp young professionals
    - c. Early careers development program (ECLIPSE)
    - d. Micro credentialing
    - e. Student chapters- enhance experience
    - f. Collect data on jobs
    - g. Value proposition for international employer to pay for SME dues
  4. Recognize and support changing professional development needs. (L)
    - a. Ethics
    - b. Programming-innovative formats/enhance value in divisions
    - c. CMSP
    - d. Learn from failures/best practices

### III. Environmental Stewardship

**Goal:** SME is recognized as the premier resource for information on responsible mining and underground construction.

**Objectives:**

1. Increase compilation, availability and accessibility to existing information about responsible mining and underground construction practices. (I)
2. Maintain development of technical briefing papers on political and regulatory hot topics. (I)
3. Increase knowledge transfer of tailings storage stewardship. (M)
4. Promote publishing of peer reviewed papers on successes and best practices. (L)

**Suggested Changes to Objectives (based on staff discussion):**

1. Enhance accessibility of responsible mining practices information to the global mining community. (I)
2. Increase availability of responsible underground construction practices to the underground construction community. (M)
3. Increase media understanding of the value of mining and underground construction. (I)
4. Investigate opportunities to educate environmental groups on the value of mining and underground construction.
5. Increase ability of educational institutions to promote the value of mining and underground construction. (L)

**Possible Strategies:**

- Continue developing technical briefing papers on political and regulatory hot topics.
- Continue education of tailings storage stewardship.
- Promote publishing of peer reviewed papers on successes and best practices.
- Create a sustainable mining toolkit (web-based)
- Create a sustainable mining short course
- Create programs (publications, short course, webinar, etc.) on tailings

## IV. Association Growth

**Goal:** SME Leads in amalgamating the community to build a better world.

**Objectives:**

1. Increase partnerships. (M)
2. Increase the dissemination of best practices. (M)
3. Enhance opportunities for enhancing diversity and inclusion. (I)
4. Improve engagement opportunities for members. (L)

**Possible Strategies:**

- Identify potential partners and likely candidates.
- Greater inclusivity:
  - review diversity statement
  - conduct research to identify diversity within the community
- Hold a section workshop on engagement opportunities
- Hold a student chapter leadership summit workshop on engagement opportunities
- Identify US best and new practices
- Review engagement opportunities in local sections, student chapters and divisions.

## Appendix A

### Assumptions About the Future (created: June 2019)

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*To make progress toward an envisioned future, an organization must constantly anticipate the strategic factors likely to affect its ability to succeed and to assess the implications of those factors. This process of building foresight about the future will assist SME to constantly recalibrate its view of the relevant future, a basis upon which to update the plan.*

#### **The following is a list of the most commonly identified external trends from the telephone research conducted for this project:**

1. Workforce challenges including an aging workforce; lack of availability of skilled labor; less interest by younger professionals to enter and stay in the industry.
2. Industry's negative perception - value of mining is unclear and misunderstood.
3. The increase of technology within the industry including operations, use of data in decision-making, and changing workforce skills.
4. Industry consolidation affecting competition.
5. The decline in the use of coal in the U.S.
6. The increase in environmental regulations and concerns.

#### **Professional Competition and Structure**

1. There will be increased movement toward automation and autonomous vehicles.
2. Materials handling with change.
3. There will be a lack of understanding of the value chain relating to mining.
4. There will be less commitment to American employees overseas.
5. Undergraduate enrollment is declining creating competition for engineers.
6. Electricity is moving to natural gas in the U.S.
7. There will continue to be cycles of commodities and jobs will have difficulty responding to the cycles.
8. There will be an increase in global environmental organizations responding to local issues/tailings.
9. Participation in the Society from operating companies may be declining.
10. The mix of workforce needs for all mineral commodities will change.
11. There will be a decline of mining/mineral/engineering schools and faculty.
12. Mining companies will be required to show they are actively socially responsible and sustainability and meet operational standards.
13. Due to the nature of the time demands on everyone, associations will continue to face competition with other associations.
14. As SME evolves away from just mining engineers, the Society will need to shift to meeting needs of non-traditional members.
15. There will likely be the development of operational standards and certifications.
16. Increased industry consolidation will affect association sponsorships.

#### **Legislation, Regulation, and Public Policy**

1. Raw materials will be increasingly impacted by global regulations and standards.
2. Mine tailings disposal will have increased regulations.
3. The permitting process will not get simpler.
4. The need for safety will continue.
5. The U.S. will increasingly not be a mining friendly country. Canada and Mexico will be more mine friendly.
6. There will be a short-term focus on tariffs.

7. Environmental assessment promises will be positive.
8. Legislation and regulation will continue to be harsher and less attached to reality.
9. There will be increasing permitting times and duration from the BLM.
10. Environmental regulation will become more stringent.
11. There will be a disconnection between coal and metal/nonmetal.
12. Regulation and legislation will not keep up with new technologies. This will create a barrier to entry with new technologies.
13. State involvement will increase as the Federal government is more relaxed in environmental focus.
14. There will be more regulations related to industry ethics.

### **Global Economic Factors**

1. There will be growing international competition and increased financing requirements.
2. Investment dollars will be moving out of the U.S.
3. There will be fluctuating currency values.
4. Mining will be impacted by global volatility.
5. The U.S. will continue to be way behind other global areas in exploration.
6. The U.S. mining industry will continue to shrink.
7. Coal will continue to grow in India and China.
8. There will be continued nationalization of mining projects globally.
9. China and India will lead in select material production and consumption.
10. There will be continued mergers globally.
11. There will be a need for global standards that are similar to the U.S., (i.e. developing countries).
12. Sourcing globally will continue.
13. Coal is declining in North America. Mines will close in many areas.
14. Renewable energy will go grow.
15. Copper demand will increase.
16. Recycling of minerals will grow.
17. Minerals will be increasingly produced in the lab.
18. There will be fewer U.S. based mining companies.
19. There will be increasing challenges (technical and economic) to the development of resources.

### **Demographics, Social Values, and Consumer Preferences**

1. There will be an increase in the number of females going into the industry.
2. Attracting young people into the industry will continue to be difficult.
3. The negative perception of the industry will affect career interest.
4. There will be a disconnect between the transfer of expertise of those retiring and those moving into leadership positions.
5. More opportunities will be available globally as mining continues to grow internationally.
6. The new generation is more social minded and may not be as attracted to the mining industry.
7. The negative perception of mining will directly impact enrollment (in programs) at the undergraduate level.
8. Engineering salaries will continue to go up.
9. There will be a need for project-based skilled workers, operators and engineers.
10. Because of lay-offs during the last recession, there are young and older workers in the workforce.
11. Younger employees have different preferences for work/life balance.
12. There will be an increase in contract mining.
13. There will be greater partnerships with industry in supporting academia.
14. It will be harder to get people to work in remote areas.
15. Work will become more project related.

16. It will continue to be difficult to retain young professionals in the industry.

### **Mining Schools**

1. There will continue to be challenges in funding.
2. It will continue to be difficult to recruit faculty.
3. The number of students will grow globally especially in developing nations.
4. The total number of mining engineering graduates will decrease.
5. Mining may be absorbed into mechanical engineering.
6. Mining will continue to be an expensive academic program.
7. Enrollment in some programs is declining.

### **Technology and Science**

1. There will be an increase in the technology training gap.
2. Technology support will be coming from consulting groups rather than mining companies.
3. There will be a greater focus on health, safety, and environmental considerations.
4. AI and robotics will grow.
5. Mining companies will see the value of collecting more data and owning their data.
6. The disconnect between engineers and miners will grow.
7. The need to spend more on innovative technology will be pressured by the public perception.
8. Skills required for mining will change dramatically and there will be a greater need for expanded technology expertise.
9. Autonomous mining and other technology may require less workers.
10. It is unclear if digital technology will work.
11. There will be challenges to prepare workers to use digital technology.
12. The use of technology will create opportunities for greater workplace flexibility.
13. Communication will change as a result of technology.
14. Social media will have a greater impact with increased exposure to the industry both positively and negatively.
15. The use of technology will improve health and safety.
16. Autonomous trucks will increase safety and efficiency.
17. The need for cybersecurity will increase.
18. There will be more machine learning required for inspections, operational efficiencies, and using the machines to make decisions.
19. Academia will continue to reinvent programs with a greater emphasis on technology.

### **Implications of Assumptions to SME:**

- What is our role globally?
  - Certification standards
  - Ethics
  - Balance between US and global
- What is our true role in public perception
- What is our role in changing workforce
- What is our relationship with universities? What will be happening with mining schools?
- Technology?
- Who will our constituencies be in the future?
- Connection to recycling in the future?

## Appendix B

### Areas of Focus

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*Potential areas of focus for SME future planning and goal setting as discussed June 17-18, 2019.*

1. Education (formal)
2. Member collaboration and inclusion
- 3/4. Education (professional development-informal)
5. Public Education
6. Positive Disruption (Technology)/Industry
7. Share failure stories/Lessons learned
8. Ethics
9. Safety & Health
10. Emerging Leaders/Workforce
11. Innovation (Industry)
12. International
13. Stewardship (Environment)
14. Workforce
15. Tailings/Waste Disposal
16. Standards
17. Certainty of Supply
18. Awareness
19. Mining in Extreme Environment
20. Internal Communication
21. Recycling
22. M&A for Association
23. Knowledge Transfer
24. Association Growth

## Appendix C

### Mega Issue Questions

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*The following questions were identified by strategic planning meeting participants as important for the Society to address in the next several years. Questions that were offered by multiple participants are in bold.*

- 1. How should SME respond to a continued decline in US members and the consolidation of the US mining industry?**
- 2. How should SME satisfy the underground construction members' needs?**
- 3. What should be SME's longer-term international growth strategy?**
- 4. How should SME respond to the growing need for diversity and inclusion?**
- 5. How do we mitigate the declining health of academic programs?**
6. What is SME's strategy to handle a continued decline in manufacturing in the U.S.; decrease in resource needs in the US and increased dependency on foreign sources?
7. How should SME use its investment funds?
8. How can SME respond to geographically remote members in the US and globally?
9. Given that sourcing minerals in a global activity, how should SME support best practices globally?
10. Should SME maintain a growth strategy in the midst of increased consolidation and displacement of workers through innovation?
11. How should SME include all the groups within the Society in its strategic plan?
12. When should the board begin preparing for a future transition of our CEO?
13. How does US based SME compete with Australia for industry dollars and audience?
14. How does SME continue to create a strong value proposition to justify membership dues being paid for by employees?
15. How does SME respond to the increasingly focus on digital technology?
16. How does SME respond to the continued loss and major decline in the US coal mining sector?
17. What should the role and structure of WAAIME be within SME in the future?
18. What organizational acquisitions/mergers are prudent to support SME's mission and vision for the future?
19. What does SME resolve the conflicting values with other organizations – MMSA, SEG and others?
20. How should SME expand divisions to better serve members?
21. How can SME increase member engagement?
22. How should SME enhance the relationship with local sections?
23. How can SME continue to fund the foundation?
24. How can SME realistically address the industry perception problem?
25. What should be the Society's brand and identity beyond 2025?
26. How does SME impact climate change?
27. How should SME respond to the need for high tech skills within the industry?
28. How does SME separate lobbying from education?
29. How does the trend toward less mining company involvement in SME impact our services and revenue structure?

## Appendix D

### Infrastructure Recommendations

*The following ideas were suggested or questions raised by the strategic planning meeting participants as possible changes to the Society's infrastructure in response to the direction outlined in the strategic plan.*

#### Infrastructure

Governance	<ul style="list-style-type: none"> <li>• What is the role between WAAIME and the SME Board?</li> <li>• How does the Society align itself better with UCA?</li> <li>• Should we change our nomination process to ensure alignment of leadership to strategic direction?</li> </ul>
Workforce Members (Committees) & Staff	<p><u>Committees</u></p> <ul style="list-style-type: none"> <li>• Are there committees that should no longer exist or be refocused?</li> <li>• Create greater alignment between the committee and strategic plan</li> <li>• Create greater alignment of the strategic plan to the foundation.</li> </ul> <p><u>Staff</u></p> <ul style="list-style-type: none"> <li>• Increased focus on innovation.</li> <li>• OneMine platform/make website more user friendly.</li> <li>• Greater understanding of partnerships and negotiating contracts.</li> <li>• Increase staffing in content dissemination.</li> </ul>
Membership	<ul style="list-style-type: none"> <li>• Should we represent a more global membership?</li> <li>• Create a communication strategy to the members on the strategic plan.</li> </ul>
Finance	<ul style="list-style-type: none"> <li>• Align budget to strategic plan.</li> </ul>
Programs & Services	<ul style="list-style-type: none"> <li>• Underground Construction careers content.</li> <li>• CMSP &amp; Additional programming.</li> <li>• More programming on innovation.</li> <li>• More alignment of programs to strategic plan.</li> <li>• Increase in programs addressing ethics.</li> <li>• New web-based location for disseminating responsible information (environment, safety, health).</li> </ul>
Partnerships	<ul style="list-style-type: none"> <li>• Explore partnership options through M&amp;A Committee.</li> <li>• Outreach to research groups to identify innovative research.</li> <li>• As a board, discuss potential partners &amp; identify the most strategic opportunities.</li> </ul>

## Appendix E

### Metric Development and Action Plans (Created August 2019)

*The following are draft metrics and action plans created by staff during follow-up session to the development of the strategic plan.*

#### Industry Innovation

Metric	Data Source(s)
Question on Murray Innovation Award Nomination	Survey Awards Coordinator
Impact Factor MME or higher in 2022 - increase name recognition	Clarivate Analytics
MME published papers increase by 5% every year	Springer
Participation in innovation meetings (technical sessions)	Thrive Conference/Tech Sessions

Strategy	How Much? \$, \$\$, \$\$\$	When? Q1, Q2, Q3, Q4	Who?
Call for papers	\$		Managers
Innovative showcase	\$	1	Dianna Corely K
Contest on Innovation undergrad student design/ move mining	\$\$\$	1	Mona, Tanya
Innovation committee (strategic)	\$	1	Dave
A new approach on how we present award	\$	1	Dave
Thrive content capture turn to webinar	\$\$	1	Tara, marketing, Cori

Best innovators in industry to interview social media	\$	1	Molly, Shalea
Target % for innovation content per department product	\$	1	Managers

## Industry Workforce

Metric	Outcome/Mapped Strategic Plan Objective(s)	Data Source(s)
Universities and employers	Hard hat community	e.g. Member satisfaction survey, website analytics, industry survey
Design opportunities for student to be recruited		
Promote free internship postings on mining jobs to build pipeline talent groups.	Marketing Promote through student groups	Track postings
Create network or high-profile opportunities for students	Young leaders Award winner/dinners	Survey Associates under 30 to see if participating with SME helped find a job opportunity.
Create and bring your kid to work program	Distribute to employers, create activities	Industry survey

Strategy	How Much? \$, \$\$, \$\$\$	When? Q1, Q2, Q3, Q4	Who?
Explore ways to retain	\$		
Industry leadership, past president webinars to discuss their experience	\$		Professional Development
Young leaders assigned to each university in webinars, podcasts , zoom			

Young leaders			
Recognize employers who send young leaders similar to recognizing			
Sponsors, young underwriting leaders			

## Environmental Stewardship

## Association Growth

Strategy	How Much \$, \$\$, \$\$\$	When? Q1, Q2, Q3, Q4	Who?
<ul style="list-style-type: none"> <li>Diversity and inclusion committee—develop proposal</li> </ul>	\$-\$\$		Committee Structure and Gov. Board approval
<ul style="list-style-type: none"> <li>Get approval from Board.</li> <li>Form committee.</li> <li>Set goals and objectives.</li> <li>How do we measure things like openness, welcoming, vibe, involvement of members differently?</li> <li>Don't want to divide membership, society</li> <li>Initiative and enhancement</li> </ul>			
<ul style="list-style-type: none"> <li>Talk to other societies, resources about measurement/how are they measuring?</li> <li>Proposal to structure and governance for review.</li> <li>Ask in ASAE community about others on to measure diversity.</li> </ul>			
<ul style="list-style-type: none"> <li>Partnerships with other women's mining coalition; other specialized engineering groups.</li> </ul>	\$-\$\$		