

TSM 101: A Primer





Junior Mechanical Engineer at Agnico Eagle's Goldex mine in Quebec. Photo credit: Agnico Eagle Mines by Mathieu Dupuis.

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This document describes the *Towards Sustainable Mining® (TSM®)* initiative: what it is and how it works. It is intended to provide a detailed overview of the initiative for mining companies, verification service providers and others with an interest in learning more about *TSM*.

Although *TSM* began as an initiative of the Mining Association of Canada (MAC) in 2004, it has since been adopted by nine other mining associations around the world, including the mining associations of Quebec, Finland, Argentina, Botswana, the Philippines, Spain, Brazil, Norway and Australia.

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What is TSM?

TSM is a globally recognized performance system that helps mining companies evaluate and manage their environmental and social responsibilities. It is a set of tools and indicators to drive performance and ensure that key mining risks are managed responsibly at participating mining and metallurgical facilities.

Participation in TSM is mandatory for MAC's member companies. This involves subscribing to the *TSM Guiding Principles*, which are backed by specific performance indicators on which member companies publicly report on an annual basis.

By adhering to the *TSM Guiding Principles*, mining companies exhibit leadership by:

- Engaging with communities
- Driving world-leading environmental practices
- Committing to the safety and health of employees and surrounding communities

Established in 2004 by MAC, TSM's main objective is to enable mining companies to meet society's needs for minerals, metals and energy products in the most socially, economically and environmentally responsible way.

At its core, TSM is:

Accountable: Assessments are conducted at the facility¹ level where the mining activity takes place – the only program in the world to do this in our sector. The results provide local communities with a meaningful view of how a nearby mine is faring.

Transparent: Mining companies publicly report their facilities' performance against a suite of indicators on the MAC website. Results are externally verified every three years.

Credible: TSM is overseen by an independent Community of Interest (COI) Advisory Panel. This multi-interest group helps mining companies and communities of interest foster dialogue, improve the industry's performance and shape the TSM initiative for continual improvement.

Measuring, verifying and reporting performance where it counts – at the mine site.

¹ TSM defines a facility as a distinct operating unit of a company to which the TSM protocols can be applied. For joint ventures, all parties need to determine the appropriate self-assessment process.

TSM Guiding Principles

As members of the Mining Association of Canada, our role is to responsibly meet society's needs for minerals, metals and energy products. To achieve this, we engage in the exploration, discovery, development, production, distribution and recycling of these products. We believe that our opportunities to contribute to and thrive in the economies in which we operate must be earned through a demonstrated commitment to sustainable development.

Accordingly, our actions must demonstrate a responsible approach to social, economic and environmental performance that is aligned with the evolving priorities of our communities of interest. Our actions must reflect a broad spectrum of values that we share with our employees and communities of interest, including honesty, transparency and integrity. And they must underscore our ongoing efforts to protect our employees, communities, customers and the natural environment.

We will demonstrate leadership worldwide by:

- Involving communities of interest in the design and implementation of TSM.
- Proactively seeking, engaging and supporting dialogue regarding our operations.
- Fostering leadership throughout our companies to achieve sustainable resource stewardship wherever we operate.
- Conducting all facets of our business with excellence, transparency and accountability.
- Protecting the health and safety of our employees, contractors and communities.
- Respecting the rights of our workers and not engaging in practices of forced or child labour, as defined in ILO Conventions 29, 138 and 182.

- Contributing to global initiatives to promote the production, use and recycling of metals and minerals in a safe and environmentally responsible manner.
- Seeking to minimize the impact of our operations on the environment and biodiversity, through all stages of development, from exploration to closure.
- Working with our communities of interest to address legacy issues, such as orphaned and abandoned mines.
- Practicing continuous improvement through the application of new technology, innovation and best practices in all facets of our operations.

Our actions must reflect a broad spectrum of values that we share with our employees and communities.



Water sampling taking place at Newmont's Red Lake Mine.

In all aspects of our business and operations, we will:

- Respect human rights and treat those with whom we deal fairly and with dignity.
- Respect the cultures, customs and values of people with whom our operations interact.
- Recognize and respect the unique role, contribution and concerns of Indigenous peoples in Canada (First Nations, Inuit and Métis) and around the world.
- Obtain and maintain business through ethical conduct.
- Comply with all laws and regulations in each country where we operate and apply the standards reflecting our adherence to these guiding principles and our adherence to best international practices.
- Support the capability of communities to participate in opportunities provided by new mining projects and existing operations.
- Be responsive to community priorities, needs and interests through all stages of mining exploration, development, operations and closure.
- Provide lasting benefits to local communities through self-sustaining programs to enhance the economic, environmental, social, educational and health care standards they enjoy.



Water samples are collected at Key Lake as part of the environmental management system.

TSM Assessment Protocols

TSM is comprised of eight TSM assessment protocols that assist mining companies in understanding and achieving the *TSM Guiding Principles*.

The protocols can be grouped under three pillars:

- **COMMUNITIES AND PEOPLE**
- **ENVIRONMENTAL STEWARDSHIP**
- **ENERGY EFFICIENCY**

Each protocol is made up of a set of indicators that help mining facilities build, measure and publicly report on the quality of their management systems and their performance.

The most up-to-date versions of the protocols are available on the MAC website in English, French and Spanish at www.mining.ca/towards-sustainable-mining/.



COMMUNITIES AND PEOPLE

1. Indigenous and Community Relationships

Building strong relationships with our communities of interest, in particular Indigenous communities, is a fundamental component of TSM. The indicators of the Indigenous and Community Relationships Protocol determine whether:

- Processes are in place to identify communities of interest, including Indigenous communities and organizations.
- Processes have been established to support the development and maintenance of meaningful relationships with communities of interest.
- Mining facilities are actively building meaningful relationships and implementing engagement and decision-making processes with Indigenous communities.

- Processes have been established to mitigate adverse community impacts and optimize social benefits generated from facilities.
- Processes are in place to respond to incidents, concerns, and feedback from communities of interest.

2. Safety and Health

Protecting the health and safety of employees, contractors and communities is fundamental to TSM and is deeply ingrained in the Canadian mining industry's culture. The indicators of the Safety and Health Protocol determine whether a facility:

- Has made senior management accountable for the safety and health of their people.
- Has processes in place to prevent incidents.
- Sets safety and health targets for continuous improvement and meets them.
- Monitors and publicly reports safety and health performance.
- Conducts risk-based training for all employees, contractors and visitors, and fosters a culture of safety.

3. Crisis Management and Communications Planning

The Crisis Management and Communications Planning Protocol provides mining companies with the tools needed to effectively plan for communications in the unfortunate event of a crisis at one of their facilities or at the corporate level. Where the crisis is caused by a physical emergency, such as a fire or flood, the tools offered in this protocol are intended to work in conjunction with emergency response plans at the facility.

The indicators of the Crisis Management and Communications Planning Protocol determine whether a company's corporate office and facilities:

- Have developed crisis management and communications plans.
- Established crisis communications teams to support the execution of the plans.
- Have communications programs in place to effectively alert their people and the public in the event of a crisis.
- Engage with local emergency responders such as fire, police and ambulance.
- Regularly review their plans and conduct crisis simulation training exercises.

The [Crisis Management and Communications Planning Reference Guide](#) provides recommendations, suggestions and examples of how a company may choose to implement this protocol.

4. Preventing Child and Forced Labour

The Preventing Child and Forced Labour Protocol sets out the general approach taken to verifying that processes are in place to ensure that neither child nor forced labour, as defined by the International Labour Organization conventions on forced and child labour, are occurring at facilities that implement TSM. The aim of this protocol is to prevent child labour and forced labour at mining operations.

The indicators of the Preventing Child and Forced Labour Protocol require companies to verify that:

- There are processes in place that are commensurate to jurisdictional risks to ensure that forced labour is not used.
- Supply chains and recruitment agencies are monitoring for human trafficking and forced labour, where there is a high risk of forced labour.
- There are processes in place that are commensurate to jurisdictional risks to ensure that no child under 18 years of age engages in work that is likely to jeopardize the health, safety and morals of young persons.
- There are processes in place that are commensurate to jurisdictional risks to ensure that no child under 15 years of age is employed.

ENVIRONMENTAL STEWARDSHIP

5. Biodiversity Conservation Management

Adopting best practices in biodiversity conservation management through all stages of a mine's life cycle is an industry priority. The indicators of the Biodiversity Conservation Management Protocol determine whether a facility:

- Has made formal commitments to manage biodiversity at their site.
- Has identified significant biodiversity aspects and is implementing action plans for these aspects.
- Partners with interested stakeholders on conservation planning.
- Publicly reports on its biodiversity activities and performance.
- Applies the mitigation hierarchy to achieve stated biodiversity outcomes.



A New Gold employee helps youth from local Indigenous schools plant culturally important shrubs at the company's New Afton operation in Kamloops, British Columbia.

6. Tailings Management

Tailings facilities are necessary components of mining activity. It is crucial that these facilities be managed responsibly to protect human safety and the environment. MAC has developed tailings management guides that are used around the world. These include [A Guide to the Management of Tailings Facilities](#) (the Tailings Guide) and [Developing an Operation, Maintenance and Surveillance Manual for Tailings and Water Management Facilities](#) (the OMS Guide), available on the MAC website. The guides outline best practices in safe tailings management for facilities. The Tailings Management Protocol measures adherence to these guides.

The indicators of the Tailings Management Protocol determine whether a facility:

- Has a policy and commitments in place to safely manage tailings facilities.
- Has implemented a tailings management system that conforms to MAC's two tailings guides.
- Has assigned accountability for tailings management to both a senior executive and the company's board of directors.
- Conducts an annual tailings management review.
- Has implemented an Operation, Maintenance and Surveillance Manual that conforms to MAC's guidance.

7. Water Stewardship

The Water Stewardship Protocol includes a set of performance indicators to measure water governance, operational water management, watershed-level planning and water performance and reporting at the mine-site level. The protocol guides the development of water stewardship practices in a manner that goes beyond legal compliance.

The indicators of the Water Stewardship Protocol determine whether a facility:

- Has a commitment and accountabilities in place and has communicated to relevant communities of interest to support water stewardship.
- Has implemented an operational water management system.

- Participates in watershed-scale planning.
- Conducts water reporting focused on performance outcomes at the site level.

ENERGY EFFICIENCY

8. Energy Use and Greenhouse Gas (GHG) Emissions Management

Improving energy efficiency and reducing GHG emissions are priorities for the Canadian mining industry in order to limit impacts to the environment, address climate change, and reduce operational costs. The indicators of the Energy Use and GHG Emissions Management Protocol determine whether a facility:

- Has a comprehensive system for managing energy use and GHG emissions.
- Tracks and publicly reports energy use and GHG emissions.
- Sets and achieves performance targets.

[The Energy and Greenhouse Gas Emissions Management Reference Guide](#) provides detailed guidance on the criteria and elements of each of the protocol's indicators.



Innovation at work at Newmont's all Electric Borden Mine.

TSM Protocols and Indicators

Each protocol is made up of a set of indicators designed to measure the quality and comprehensiveness of facility-level management systems. These protocols are intended to provide the public with an overview of the industry's performance in key environmental and social areas. Several protocols are accompanied by framework documents that describe member companies' broader commitments in these areas.

COMMUNITIES AND PEOPLE				ENVIRONMENTAL STEWARDSHIP			ENERGY EFFICIENCY
Indigenous and Community Relationships	Crisis Management and Communications Planning	Safety and Health	Preventing Child and Forced Labour	Tailings Management	Biodiversity Conservation Management	Water Stewardship	Energy Use and GHG Emissions Management
Community of Interest (COI) identification	Crisis management preparedness	Policy, commitment and accountability	Preventing forced labour	Tailings management policy and commitment	Corporate biodiversity conservation commitment, accountability and communications	Water governance	Energy use and GHG emissions management systems
Effective COI engagement and dialogue	Review	Planning, implementation and operation	Preventing child labour	Tailings management system	Facility-level biodiversity conservation planning and implementation	Operational water management	Energy use and GHG emissions reporting systems
Effective Indigenous engagement and dialogue	Training	Training, behaviour and culture		Assigned accountability and responsibility for tailings management	Biodiversity conservation reporting	Watershed-scale planning	Energy and GHG emissions performance targets
Community impact and benefit management		Monitoring and reporting		Annual tailings management review		Water reporting and performance	
COI response mechanism		Performance		Operation, maintenance and surveillance manual			

TSM Performance Rating System

Mining facilities annually self-assess their performance under the *TSM* protocols. For each indicator, facilities assign a letter grade that reflects their performance, ranging from Level C to Level AAA. The performance results of each facility are published on the MAC website. Facilities must externally verify their results every three years.

One of the key strengths of *TSM* is that mining companies' performance is where the mining activity actually takes place—at the facility level. The results provide local communities with a meaningful view of how a nearby mine is faring.

Most protocols assess facility performance on a Level C to Level AAA scale. The Crisis Management and Communications Planning Protocol and the Preventing Child and Forced Labour Protocol are used to assess whether facilities have met or not met the requirements of these protocols.

MAC aims to have all member facilities achieve a Level A or better in all indicators and meet all of the requirements of the Crisis Management and Communications Planning and Preventing Child and Forced Labour Protocols.

AAA	Excellence and leadership.
AA	Systems and process are integrated into management decisions and business functions.
A	Good practice. Systems and processes are developed and implemented.
B	Procedures exist but are not fully consistent or documented. Systems and processes are planned and being developed.
C	No systems are in place. Activities tend to be reactive. Procedures may exist but are not integrated into policies and management systems.

The goal is for each facility to achieve Level A or higher in all performance areas.

TSM Reporting and Verification Process

TSM's primary objectives are to drive performance improvement and, through demonstration of this improvement, to build trust with communities of interest. To build this trust, *TSM* includes a number of checks and balances to ensure that reported results present an accurate picture of each facility's management systems and performance.

Self-Assessment: Facilities annually self-assess their performance against all indicators under the *TSM* protocols using the rating system above. The performance results are published on the MAC website. New members have three years to start publicly reporting, allowing time to train employees for full implementation.

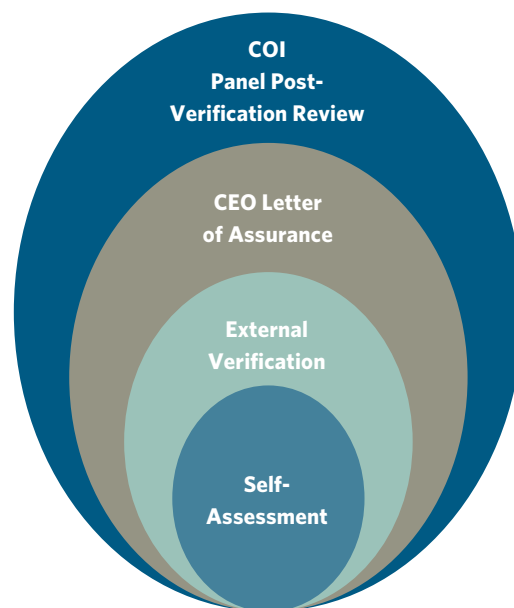
External Verification: Every three years, a Verification Service Provider (VSP) critically reviews a company's self-assessments to determine if there is adequate evidence to support the performance ratings reported. The VSPs are experienced independent auditors and technical experts. The VSPs rigorously apply the protocols and, where required, can change companies' self-assessed ratings to ensure they accurately reflect the facility's management practices and performance.

CEO Letter of Assurance: In the year of external verification, a company's CEO, or equivalent, is required to submit a letter to MAC that confirms the external verification has been conducted in accordance with the Terms of Reference for VSPs. These letters are posted on MAC's website.

Community of Interest Advisory Panel (COI Panel) Post-Verification Review: Each year, MAC's independent COI Panel selects a sample of companies to present and discuss their *TSM* results.

Through these discussions, the Panel tests to see whether and how facility systems are leading to performance improvement. The Panel explores the challenges faced by the facilities and the steps they are taking to address them.

LAYERS OF VERIFICATION





Teck Greenhills Operations located near Elkford, British Columbia.

TSM Self-Assessment Process

Each year, MAC members self-assess their performance against the *TSM* protocols at each of their operational Canadian facilities. Some members also apply these protocols at their international facilities.

The steps involved in the self-assessment include:

1. The facility assigns Protocol Leaders, who are responsible for conducting the self assessments against one or more *TSM* protocols.
 2. The Protocol Leader collects evidence to assess the level of performance for each indicator through document review and interviews with personnel. Based on available evidence, the Protocol Leader:
 - Determines the level of performance achieved for each indicator within the protocol.
 - Documents the rationale for the assigned levels.
 3. The *TSM* Initiative Leader collects self-assessments from each facility and submits the results to MAC.
 4. In the year of external verification, the self-assessments are supplied to the Verification Service Provider for verification.
- Maintains a list of evidence reviewed for each indicator and copies of evidence, where possible.
 - Provides self-assessment results to the company's *TSM* Initiative Leader - the person responsible for overall implementation of *TSM* in a given company.



Agnico Eagle's Pinos Altos mine in Mexico received the TSM Leadership Award in 2018, along with five other Agnico Eagle mine sites, for its outstanding performance on all of the TSM protocols.

Verification Service Providers

ROLE OF VERIFICATION SERVICE PROVIDERS (VSPS)

VSPs are essential to the ongoing success of TSM. The independence and professional judgment they bring helps to ensure that facility-level management systems are meeting the TSM requirements. Every three years, VSPs review companies' self-assessments to determine if there is adequate evidence to support the reported ratings. VSPs are expected to follow standard verification methodology, which includes three phases:

- 1. Planning:** pre-verification communication with the client to determine sample size (if applicable), verification agenda and interview questions, and to ensure that all required documentation is available beforehand.
- 2. Execution:** validation that the performance level reported by the client is consistent with the VSP's determination based on standard auditing tools, including interviews with relevant personnel and communities of interest and review of relevant documentation.

- 3. Reporting:** preparation of a report that includes, at a minimum, a verification statement from the VSP confirming the completion of the external verification and its results.

VSPs conduct site visits during most verifications. The company, in discussion with the VSP, can determine whether a site visit is required.

SAMPLING

For a facility's first external verification, the VSP must validate all indicators for all TSM protocols. For subsequent external verifications, the VSP has the independence to determine the external verification sample size on the basis of standard auditing practice and professional judgment. However, the VSP must test at least one protocol at each facility and must test every protocol at least once.

The VSP Terms of Reference and a list of qualified VSPs can be found at www.mining.ca/towards-sustainable-mining/.



Community of Interest Advisory Panel

The Community of Interest Advisory Panel (COI Panel) is an independent, multi-interest group comprising individuals from Indigenous groups, communities where the industry is active, environmental and social non-governmental organizations (NGOs), and labour and financial organizations. Select members of the MAC Board of Directors also sit on the Panel to provide a mining industry perspective to discussions. The Panel serves as a platform for COI and MAC members to discuss and collaborate on issues of mutual concern.

The COI Panel was formed in 2004, when the *TSM* initiative was established. The Panel played a key role in the program's design from the very beginning and continues to be integral to its evolution and implementation.

COI PANEL FUNCTIONS:

- Meets twice a year to provide support and advice for the *TSM* program.
- Conducts an annual Post-Verification Review of a sample of companies' verified results to analyze company systems and practices.
- Provides critical perspectives by raising emerging issues of concern beyond those covered under *TSM*.

COI ADVISORY PANEL CORE CATEGORIES	
Indigenous	Individuals who represent the interests of Indigenous Canadians, including First Nations, Inuit and Métis.
Environmental NGO	Individuals with environmental expertise and experience in advocacy for environmental protection.
Economic and community development	Individuals with expertise in business development at the community level and knowledge of community interactions with mining facilities.
Social NGO, including faith-based groups	Individuals who represent civil society with knowledge of social justice issues.
Finance and investment	Individuals with financial expertise and knowledge of socially responsible investing.
International development	Individuals with expertise in alleviating poverty and improving the standard of living through responsible development.
Labour and workplace	Individuals with knowledge of the interests, safety and needs of workers.
Ex-officio Members <ul style="list-style-type: none"> • MAC Board of Directors • Junior Mining Company Representative 	Industry participation comprises four MAC Board members, one representative of the exploration sector, and the MAC President and CEO. MAC staff members also participate as resource persons.

Governance of TSM

Various groups, both inside and outside of MAC, hold important roles and responsibilities in the governance of *TSM*.

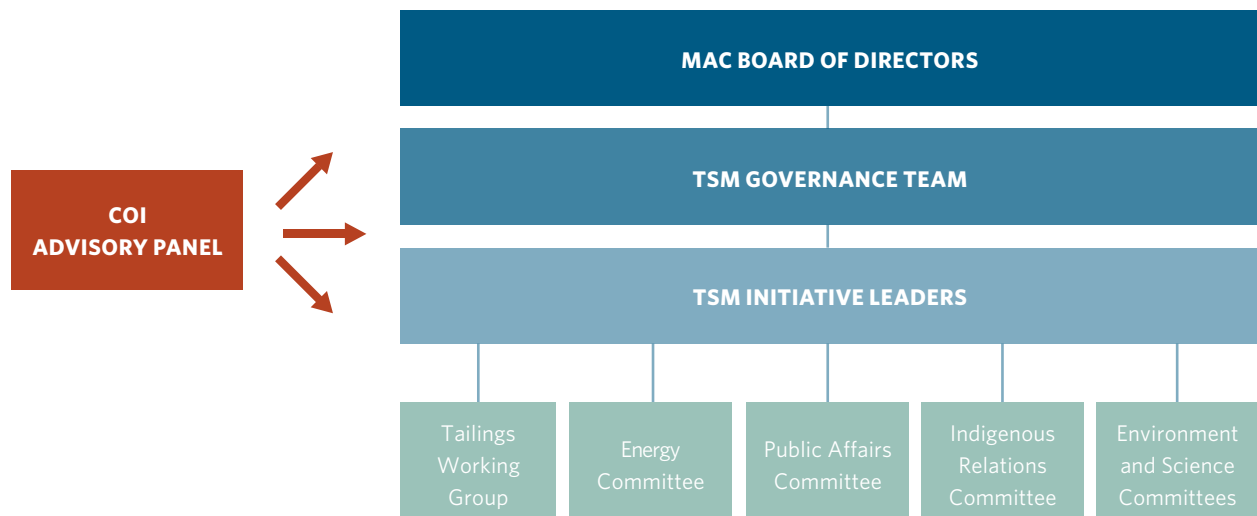
The program is spearheaded by the *TSM* Governance Team, a sub-committee of MAC's Board of Directors. Within each member company, *TSM* is supported by internal representatives called Initiative Leaders. The ongoing development and evolution of *TSM* is also supported by the COI Advisory Panel and other MAC committees.

MAC BOARD OF DIRECTORS

The MAC Board of Directors is made up of one representative per member company. With respect to *TSM*, the Board is responsible for setting the overall objectives for *TSM* as well as approving the annual budget and any changes to the program.

TSM GOVERNANCE TEAM

The *TSM* Governance Team is a subcommittee of the MAC Board of Directors. This group is responsible for providing strategic direction on all matters related to *TSM* and making recommendations to the Board on proposed changes to the program.





Recovering and revegetating inactive tailings areas is an important part of Vale's land reclamation efforts in Sudbury.

TSM INITIATIVE LEADERS

Each full member assigns a senior employee as an Initiative Leader. This person is responsible for coordinating and leading implementation of *TSM* within the company and typically has a direct reporting relationship with the company's Board representative. The Initiative Leaders meet three to four times per year and occasionally by teleconference. Specific responsibilities of an Initiative Leader include:

- Identifying or developing appropriate resources to implement *TSM* throughout the company.
- Understanding *TSM* and its components and how they will affect, and be implemented in, the company.
- Developing and maintaining communication links with MAC and other industry Initiative Leaders to ensure the application of best practices and the success of *TSM* throughout the membership.
- Assisting in the development and review of *TSM* frameworks, protocols, indicators and criteria, and coordinating company experts' input into these documents.
- Communicating information about *TSM* within the company.
- Gathering the company's facility data for reporting on *TSM*.
- Coordinating external verification every three years.

OTHER COMMITTEES AND TASK FORCES

The *TSM* Initiative Leaders rely on the expertise and technical advice of other MAC committees to support the ongoing implementation and development of the program. For example, the Energy Committee is consulted on work related to the Energy Use and GHG Emissions Management Protocol. Similarly, the Tailings Working Group spearheads work on the Tailings Management Protocol and associated guides. New task forces and working groups can be established as issues arise.



Underground at Éléonore Mine.

HOW NEW PROTOCOLS ARE DEVELOPED

The development of *TSM* protocols is a multi-staged process. For many protocols, this starts with the development of a policy framework that sets the parameters for the development of performance indicators that meet the needs of both industry and external stakeholders. The process of developing a framework includes meetings and discussions with member companies, case study analysis and consultations with the COI Panel and external experts.

After a framework is established, a working group of Initiative Leaders and subject matter experts drafts initial indicators and criteria, in conjunction with the COI Panel and other external experts as required. Various iterations of this work are examined by the broader group of Initiative Leaders, the COI Panel, the Governance Team and the MAC Board of Directors.

Throughout this process, the Initiative Leaders provide technical advice on how the new protocol's indicators will be implemented by facilities. This group also raises issues as facilities work through the new protocols.

The COI Panel provides an external perspective throughout the protocol development and review process. Panel representatives validate the integrity of the *TSM* protocols and, when appropriate, advise on how to improve the criteria in line with the objectives of *TSM*. Involving Panel members in the design of *TSM* protocols has helped build trust between Panel members and the MAC Board of Directors.

The *TSM* Governance Team reviews any recommended changes to *TSM* protocols before they are presented to the MAC Board of Directors. All changes are approved by the Board before implementation.

TSM Implementation

NEW MEMBER AND NEW FACILITY PHASE-IN

New members and facilities that have recently entered into the production stage of the mining life cycle have three years to start publicly reporting *TSM* performance. This phase-in allows companies to conduct a gap analysis against the *TSM* criteria, implement management systems and train relevant personnel.

Year 1: Gap analysis, TSM implementation, training

The first step in *TSM* implementation is to ensure that the company's Initiative Leader and Protocol Leaders are trained on the *TSM* protocols. This is an essential step in ensuring that *TSM* is consistently applied at all participating facilities.

Following training, facilities conduct a gap analysis of existing management systems against the *TSM* protocols. This will help the facility to identify any critical gaps. The gap analysis typically results in an action plan for the facility to meet Level A performance. Results are reported to MAC, but remain confidential and are used to identify needs for MAC support.

Year 2: Self-assessment and aggregate-level reporting

The self-assessments are reported to MAC, which publishes aggregate performance data from all participating companies annually on the MAC website. This step gives the company and its facilities an opportunity to become familiar with the reporting process.

Year 3: Self-assessment and public facility-level reporting

The next step is to publicly report facility-level results on the MAC website, alongside a company profile that describes the results and the company's plans to address remaining gaps.

Year 4: External verification of self-assessment

The Initiative Leader coordinates the external verification process and is responsible for selecting a qualified professional from MAC's approved list of trained Verification Service Providers.

Optional Reporting and Verification Process

OPTIONAL PROCESS FOR HIGH-PERFORMERS

In 2014, a revised reporting and verification process was developed for facilities that consistently achieve high levels of TSM performance. For facilities that follow this optional process, these changes reduce reporting burden and provide more flexibility to align TSM verification requirements with other audit and verification commitments.

This framework is applied as follows:

Externally Verified Level A or AA

When a facility achieves an externally-verified Level A or AA across all indicators of a given protocol (or meets all requirements of the Crisis Management and Communications Planning Protocol or the Preventing Child and Forced Labour Protocol), the annual self-assessment becomes voluntary for three years for that protocol. The facility must then undergo external verification before the end of that three-year period. During the three-year period, facilities will remain at the same level for each indicator, but they can voluntarily report annually if they choose to demonstrate a change in performance.

Two Cycles of Level A or AA or Externally Verified Level AAA

When a facility achieves a Level A or AA on a given protocol in two consecutive external verification cycles, or a Level AAA in one verification cycle, the facility can conduct a more limited verification for that protocol in the next scheduled external verification year. The facility would conduct an internal verification and submit a letter of assurance from its CEO after three years. The facility would then undergo an external verification after six years.



Over the past 10 years, Agnico Eagle has worked closely with its community partners to create education, training, high-quality jobs and business opportunities in Nunavut.

Training

To support the implementation of *TSM* at member company facilities, MAC provides both onsite and online training.

These programs provide an overview of how *TSM* works as well as an opportunity to work through the protocols using case study examples. In addition to the standard *TSM* training program, MAC also provides training on specific protocols as required.

For information on *TSM* training, visit: www.mining.ca/towards-sustainable-mining.



Display of Agnico Eagle's 2018 TSM Leadership Awards.

TSM Awards

Each year, MAC celebrates companies that have demonstrated leadership and excellence in their implementation of TSM.

TSM LEADERSHIP AWARD

A *TSM Leadership Award* is granted when a facility meets or exceeds a Level A rating for all indicators across all protocols and meets all requirements of the Crisis Management and Communications Planning and Preventing Child and Forced Labour Protocols. To be eligible for a *TSM Leadership Award*, a facility's results must have been externally verified in the previous year.

Consistent Level A performance constitutes a bronze award, Level AA a silver award and Level AAA a gold award.

TSM EXCELLENCE AWARDS

The *TSM Community Engagement Excellence Award* and the *TSM Environmental Excellence Award* recognize initiatives that expand and promote sustainable development within the mining sector.

Global Uptake of TSM

MAC is helping to build capacity within the global mining industry by sharing its expertise in sustainable mining practices. One of the most effective ways MAC and its members have been doing this is by freely sharing the *TSM* initiative with mining associations in other countries that are seeking tools to improve the environmental and social performance of their mining industries.

As of 2020, nine national mining associations have adopted *TSM*, including the mining associations of Quebec, Finland, Argentina, Botswana, the Philippines, Spain, Brazil, Norway and Australia.

Each mining association can tailor its performance areas and approach to reflect the unique aspects of their domestic mining sector. However, there are seven core components that associations must implement in order to maintain the high standards of *TSM* as it is adopted around the world.

The core components of *TSM* include:

- 1. Guiding Principles:** Associations must commit to a set of Guiding Principles that reflect the environmental and social goals of the industry and its communities of interest.
- 2. Performance Indicators:** Associations must implement performance indicators to measure success in adhering to those Guiding Principles.
- 3. Facility-Level Reporting:** Associations must have measures to track progress against the performance indicators at the facility level, where the mining activity takes place.
- 4. Independent Verification:** Associations must implement an appropriate framework for independent verification of performance to ensure that reported self-assessed results accurately reflect performance.
- 5. Public Disclosure of Facility-Level Reporting:**
A mechanism must facilitate the public reporting of facility-level performance results.

6. Condition of Membership: *TSM* must be a condition of membership in the implementing association.

7. Community of Interest Advisory Body:

Associations must ensure that a Community of Interest Advisory Body, which represents challenging interests and a broad spectrum of societal perspectives, is in place. This body works closely with the association to support the implementation of *TSM*.

As *TSM* is adopted in other jurisdictions, MAC member companies may have operations in two or more *TSM* implementing jurisdictions. In these cases, the member company can choose which version of *TSM* to implement. For example, if a company has operations in both Canada and Argentina, the company can implement the respective *TSM* programs of each association or the *TSM* program of one association at all operations.

TSM Milestones

YEAR	EVENT
1999	Partially in response to the Whitehorse Mining Initiative of the early 1990s, the MAC Board establishes a Task Force to consider a sustainability initiative, which is a precursor to the TSM Governance Team
2002	<i>TSM Guiding Principles</i> are developed Development of <i>TSM</i> protocols begins
2004	<i>TSM</i> is launched with four protocols (Tailings Management, Crisis Management, External Outreach and Energy and GHG Emissions Management) <i>TSM</i> COI Advisory Panel is formed
2005	MAC wins the Globe Foundation Award for Environmental Excellence
2006	First round of external verification by all MAC member facilities
2011	Two new <i>TSM</i> protocols are introduced on biodiversity conservation management and safety and health.
2012	MAC wins the Prospectors and Developers Association of Canada Environmental and Social Responsibility Award
2013	MAC and Stratos are recognized with the Excellence in Corporate Social Responsibility Award for <i>TSM</i>
2014	<i>TSM Excellence Awards</i> are launched
2015	The Finnish Mining Association adopts <i>TSM</i>
2016	The Argentinean Chamber of Mining Companies adopts <i>TSM</i>
2017	The Chamber of Mines of the Philippines and the Botswana Chamber of Mines adopt <i>TSM</i> Preventing Child and Forced Labour Protocol introduced
2018	Spain's national mining association adopts <i>TSM</i>
2019	Water Stewardship Protocol introduced The Brazilian Mining Association adopts <i>TSM</i>
2020	The Norwegian Mining and Quarrying Industries Association adopts <i>TSM</i>



The Sandhill Fen Watershed reclamation research project at Syncrude's oil sands facility near Fort McMurray, Alberta.

Value of TSM

Performance improvement: The primary purpose of *TSM* is to drive performance improvement in each indicator area.

Risk management: *TSM* enables mining companies to understand and manage risks, reduce avoidable losses and identify emerging issues.

Access to capital: Institutional investors believe that social and environmental risk management can greatly improve a company's long-term market value. The investment community increasingly regards environment, social and governance factors as crucial to their investment decision making.

Public confidence: Through *TSM*, MAC members can build trust with their communities of interest and demonstrate their commitment to responsible mining practices.

Recruitment and retention: Most people want to work for a company whose values are consistent with their own, and there is growing evidence that more people want to work for responsible organizations. *TSM* helps companies attract and retain a talented and diverse workforce.

Innovation and learning: *TSM* stimulates innovation and learning within companies by helping to identify new market opportunities, establish more efficient business processes and maintain competitiveness.

