

TSM IN ACTION: THE MINING ASSOCIATION OF CANADA’S “TOWARDS SUSTAINABLE MINING” INITIATIVE

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ABSTRACT

The Mining Association of Canada (MAC) has embarked upon an ambitious and important initiative called Towards Sustainable Mining (TSM), which is designed to enhance the industry’s reputation by improving its environmental, social and economic performance, while aligning its actions with the priorities and values of its communities of interest (COI). This paper describes the TSM initiative—its rationale, its accomplishments to date – and its hopes for the future.

KEY WORDS: social license, consultation, performance, indicators, communities of interest, stakeholders

INTRODUCTION

The Mining Association of Canada (MAC) is the national organization of the Canadian mining industry. It comprises companies engaged in mineral exploration, mining, smelting, refining and semi-fabrication. Operating member companies account for the vast majority of Canada’s output of metals and minerals.

The Association’s functions are to promote the interests of the industry nationally and internationally, to work with governments on policies affecting minerals, to help the industry improve its performance, to inform the public and to promote cooperation among firms to solve common problems. The Association has also played a role in helping its members address environmental and social issues on a collective basis, most successfully through the development and implementation of Towards Sustainable Mining.

THE CULTURAL CHANGE: TOWARDS SUSTAINABLE MINING

Before the 1990s most industries had little public consultation and limited dialogue with communities and the public. In the mining sector, most individual mines operating near communities had community engagement strategies, but these did not necessarily extend beyond the community boundaries.

In the late 1990s a series of accidents involving Canadian mining companies, both directly and indirectly, were threatening the industry's social license to operate. These incidents included tailings dam failures at Omai, Guyana; Los Frailes, Spain and Marcopper, the Philippines, as well as a cyanide spill at Kumpor, Kyrkystan that led to a story by the CBC called *the Ugly Canadian*.

In response to this threat to our sector's social license, the MAC Board of Directors set up a task force to consider a sustainable development program. Sustainable development issues were researched and stakeholder input was gathered. Consultation with key stakeholders – including Aboriginal communities, labour organizations, government, and environmental and social NGOs – allowed the mining industry to engage in a comprehensive dialogue with critics and concerned communities. Several key conclusions arose from this initial research, of which the most important conclusion was that if the mining industry was to improve its credibility and reputation, it must do so on a platform of improved performance and through closer alignment with public values.

As a result of this task force's conclusions, MAC began developing one of the most important initiatives ever to be undertaken by the Association. Called Towards Sustainable Mining (TSM), and focusing on earning one's social license to operate, its aim is to enhance the mining industry's reputation by improving its environmental, social and economic performance while aligning its actions with the priorities and values of its communities of interest (COI).

We recognized that the status quo was no longer sustainable: we simply had to improve the industry's performance—both operational and social—and we had to improve external stakeholder judgment of the industry, by taking concrete action. For too long, our industry had been defensive and reactionary—responding late to society's growing expectations of change. It was time to walk the talk.

The Mining Association of Canada decided to face the challenge of sustainable development by developing a set of guiding principles that would ultimately be the foundation for its members' social license to operate. In its first couple of years, TSM focused on understanding the critical issues facing our industry, setting out the principles to guide industry action and building alignment with the initiative across the industry, a critical first step. These TSM guiding principles represent a set of commitments that address all areas of our industry's performance and are presented below.

Officially launched in 2004, TSM was made a condition of membership by MAC's Board of Directors in the fall of that year. The guiding principles are backed by specific performance indicators, against which companies report each year. These indicators respond to critical performance areas, demonstrate performance, facilitate continuous improvement toward recognized best practices and build credibility and trust with our communities of interest. Essentially, they help show Canadians what the industry's current performance is and how it can be improved.

Figure 1: Towards Sustainable Mining Guiding Principles

Towards Sustainable Mining Guiding Principles	
<p>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.¹</p> <p>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.² 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.</p>	
<p>We will demonstrate leadership worldwide by:</p> <ul style="list-style-type: none"> ▪ Involving communities of interest in the design and implementation of our Towards Sustainable Mining initiative; ▪ 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; ▪ 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 opera- 	<p>In all aspects of our business and operations, we will:</p> <ul style="list-style-type: none"> ▪ 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 Aboriginal peoples (First Nations, Inuit and Métis) and indigenous peoples worldwide. ▪ 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 par-

¹ MAC draws on the 1987 Brundtland Commission definition of sustainable development: "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

² MAC uses the term "communities of interest" to include all individuals and groups who have, or believe they have, an interest in the management of decisions about MAC operations that may affect them. They include employees, contractors, Aboriginal or indigenous peoples, mining community members, suppliers, customers, environmental organizations, governments, the financial community and shareholders.

Figure 1: Towards Sustainable Mining Guiding Principles

<p>tions on the environment and biodiversity, through all stages of development, from exploration to closure;</p> <ul style="list-style-type: none"> ▪ 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. 	<p>ticipate in opportunities provided by new mining projects and existing operations.</p> <ul style="list-style-type: none"> ▪ 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.
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TSM is spearheaded by the TSM Governance Team, a committee of the MAC Board of Directors. Within each member company, TSM is supported by internal representatives called “initiative leaders.” Committees of MAC members lead the development of performance indicators and technical guidelines for implementing TSM.

The TSM Community of Interest (COI) Advisory Panel was established in 2004, and provides a key forum to strengthening engagement with mining communities of interest, and of helping to achieve TSM’s objectives and guide its evolution.

Since 2004, TSM has committed MAC members to several important initiatives:

- reporting against performance indicators for tailings management, energy management, external outreach and crisis management planning
- developing and implementing an external verification system for TSM performance
- establishing and working with a 14-member Community of Interest Advisory Panel
- developing new policy frameworks and performance indicators for aboriginal and community outreach, biodiversity conservation and safety and health.

TSM PERFORMANCE INDICATORS

From the outset, MAC members identified the need for performance indicators for individual facilities to provide a consistent framework for evaluating and reporting on industry performance against the guiding principles. Facility level indicators help ensure that reporting is relevant to communities of interest and that it helps member companies improve their performance at both the operational and corporate levels.

Each indicator is designed to focus on a different management component of the performance element. So far, MAC has developed TSM performance indicators in the six areas shown on Table 1.

HOW THEY WORK...

In five of these areas – tailings management, energy use and greenhouse gas management, Aboriginal and community outreach, biodiversity conservation management, and safety and health – the indicators are supported by a ranking system and clear criteria for evaluating performance and monitoring progress. For each indicator there are five levels of performance, with criteria for each level. In general, the levels represent the degrees of activity shown in Table 2.

Table 1: Towards Sustainable Mining Performance Indicators

Tailings management	Energy use and greenhouse gas (GHG) emissions management	External outreach	Crisis management planning	Biodiversity Conservation Management	Safety and Health
Tailings management policy and commitment	Energy use management systems	Community of interest (COI) identification	Crisis management preparedness	Corporate biodiversity conservation policy accountability and communications	Policy , commitment and accountability
Tailings management system	Energy use reporting systems	Effective COI engagement and dialogue	Review	Facility-level biodiversity conservation planning and implementation	Planning, implementation and operation
Assigned accountability and responsibility for tailings management	Energy intensity performance targets	COI response mechanism	Training	Biodiversity conservation reporting	Training, behaviour and culture
Annual tailings management review	GHG emissions management systems	Reporting			Monitoring and reporting

Table 1 (continued): Towards Sustainable Mining Performance Indicators

Operation, maintenance and surveillance (OMS) manual	GHG emissions reporting systems				Performance
	GHG emissions intensity performance targets				

Table 2: Towards Sustainable Mining Performance Rating Scale

PERFORMANCE RATING	
LEVEL	CRITERIA
C	No systems in place; activities tend to be reactive; procedures may exist but they are not integrated into policies and management systems.
B	Procedures exist but are not fully consistent or documented; systems/processes planned and being developed.
A	Systems/processes are developed and implemented.
AA	Integration into management decisions and business functions.
AAA	Excellence and leadership.

Performance assessment takes place at the **facility level**, where it is most meaningful. A reporting facility selects the level that most clearly represents its performance and is expected to justify the level with evidence. Only one level can be chosen for each indicator, and it can be chosen only if all criteria for that level and all preceding levels have been met. In the case of crisis management planning, both head offices and facilities assess their performance against criteria by answering yes/no (met requirements/did not meet requirements).

The MAC Board of Directors has set a goal of having each of the MAC members achieve, at a minimum, a level A for each of the indicators and yes for crisis management planning.

MAC members report their assessments each year in the TSM Progress Report which is published annually on MAC's website in a multi-media format. More information on the performance indicators, including the criteria for each level, is included in that report and can be found at www.mining.ca.

IMPLEMENTING EXTERNAL VERIFICATION

Early results of reporting (2004 and 2005) under TSM were published in the TSM Progress Report, and were based on self-assessments. The MAC Board felt that self-assessment was a necessary first step to familiarize companies with the TSM indicators and the reporting process. However, the Board also recognized that it is crucial to assure MAC members and communities of interest that the reported results are consistent and accurate.

MAC is the first mining association in the world to implement external verification of performance. To implement the verification system and to make reporting more consistent across the membership, TSM initiative leaders from member companies developed assessment protocols for all performance indicators. The TSM verification system is based on a layered approach. Four elements combine to give MAC members and their communities of interest confidence in the integrity of reported company performance:

- Members self-assess and submit performance data to MAC for reporting in the *TSM Progress Report*
- Verification of company self-assessments by an external verifier
- Letter of assurance from a CEO or authorized officer confirming the externally-verified results
- Annual post-verification review of two or three member companies' performance by the Community of Interest Advisory Panel

In 2007, 10 MAC members had their 2006 self-assessment results externally verified for the first time. Companies verify on a rotating three-year basis, with one-third of MAC members externally verifying their results each year. In other words, each company will undergo an external verification every three years. Under this system, MAC members self assess, using the TSM protocols to assign performance ratings to each of their facilities, and specially-trained Verification Service Providers (VSPs) verify the accuracy of the self assessments. At the conclusion of the process, the VSP issues a statement and report, and the CEO or authorized officer of the company involved provides a letter of assurance confirming that the verification has been conducted. The CEO letters are posted on MAC's website.

TSM is forever evolving to meet the needs and priorities of MAC's members and its communities of interest. Table 3 illustrates the current implementation and development of the program, highlighting the status of existing protocols as well as those areas for which frameworks have been developed or are being considered.

THE COI ADVISORY PANEL

TSM's Community of Interest Advisory Panel includes representatives from Aboriginal organizations, labour, communities where the industry is active, environmental and social NGOs and the investment community, along with senior mining industry representatives. The panel is comprised of 14 representa-

tives and seats are reserved for each constituency that is represented. The panel's purpose is to do the following:

- help MAC members and their communities of interest to improve the performance of the industry, in line with the TSM guiding principles
- provide a mechanism for two-way dialogue between MAC and its communities of interest and for MAC to respond to issues raised by them
- provide input into and build understanding of and support for TSM goals

By bringing together individuals from various backgrounds, the COI Advisory Panel serves as an independent analysis mechanism that examines the development and implementation of TSM. The panel has met twice a year since March 2004. Over the years, it has provided advice on:

- the TSM Guiding Principles
- reporting content and quality
- new performance indicators and criteria

Table 3: Staged Development and Implementation of TSM Frameworks and Protocols[illegible]

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Aboriginal & Community Outreach	Develop framework	Develop protocol	Pilot test	Self-assess	Publicly report and verify facility results	Publicly report and verify facility results
Safety & Health		Develop framework and protocol	Pilot test	Self-assess	Self-assess. aggregate reporting	Publicly report and verify facility results
Biodiversity	Develop framework	Develop protocol	Pilot test	Self-assess	Self-assess. aggregate reporting	Publicly report and verify facility results
Mine Closure	Develop framework		Assess need for protocol	Develop protocol	TBD	TBD
Water			Scoping	Scoping	TBD	TBD
International Application			Scoping	Scoping	TBD	TBD
	2008	2009	2010	2011	2012	2013

***Reporting on the External Outreach Protocol will cease in 2012 and will be replaced with reporting on the Aboriginal and Community Outreach Protocol.**

- TSM verification system
- MAC membership criteria
- emerging issues and challenges
- new performance elements

TSM PERFORMANCE RESULTS

After seven years of reporting, MAC is now able to demonstrate continuous improvement in the performance of its members; however, we remain committed to further progress. The graphs that follow compare

the percentage of facilities that have met or surpassed benchmarks of level A for good practice from 2006³-2010.

Tailings Management

In 2010 nearly half of the facilities reported having a tailings management system that provides a formal, systematic structure for assessing risks, setting goals and objectives, consulting with communities of interest (COI), implementing activities to achieve goals, assigning responsibilities, and ensuring, through assurance processes, that tailings facilities are managed effectively.

Assigned accountability and responsibility for tailings management remains the strongest performance indicator. In nearly 80 percent of facilities, an executive officer (CEO or COO) is accountable for making sure that a management structure is in place to assure the corporation and its COI that tailings are managed responsibly.

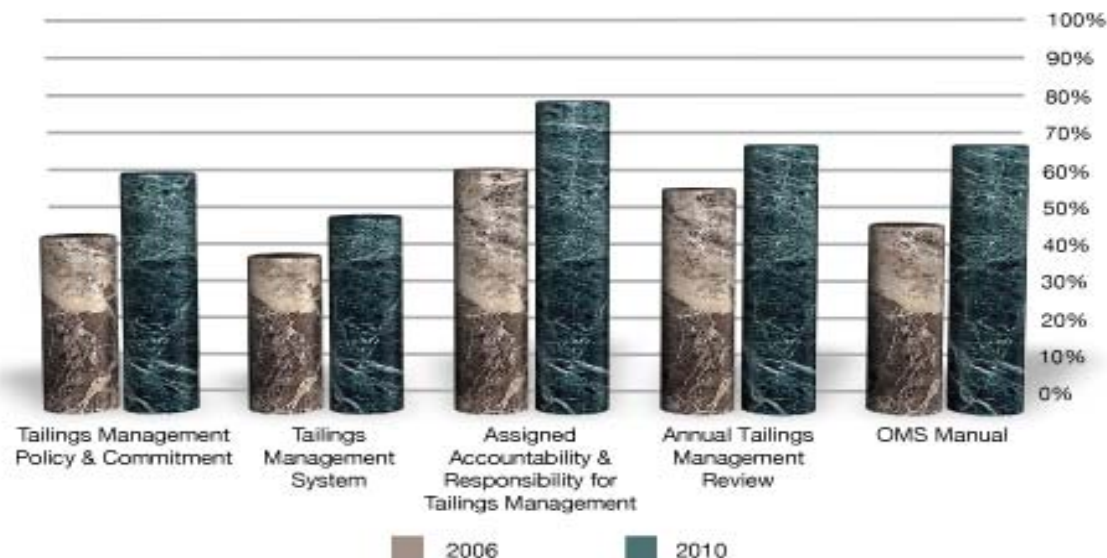


Figure 3: Tailings Management Assessment, Percentage of Facilities at Level A or Higher (2006-2010)

Energy Use and Greenhouse Gas Emissions Management

This performance element includes three indicators that address energy use and three that assess the management of greenhouse gas emissions.

³ In 2006 all reporting MAC members had their TSM self-assessments externally verified.

Performance in this area remains the weakest of all TSM areas on an aggregate basis. However, analysis from 2006 to 2010 shows an improvement in management systems for both energy use and GHG emissions.

MAC conducted substantial analysis in 2010 and 2011 to understand the factors preventing facilities from improving their TSM performance in this area. The analysis showed that the materiality of facility-level GHG emissions has a direct correlation with TSM results. Many of the facilities who reported emissions above 50,000 tonnes CO₂ reported at a Level A or higher, while those who reported less than 50,000 tonnes CO₂ reported at a Level C or B for this performance element. MAC continues to research the factors contributing to weak performance in this area and is currently developing strategies to ensure that systems and processes are in place to manage energy use and GHG emissions.

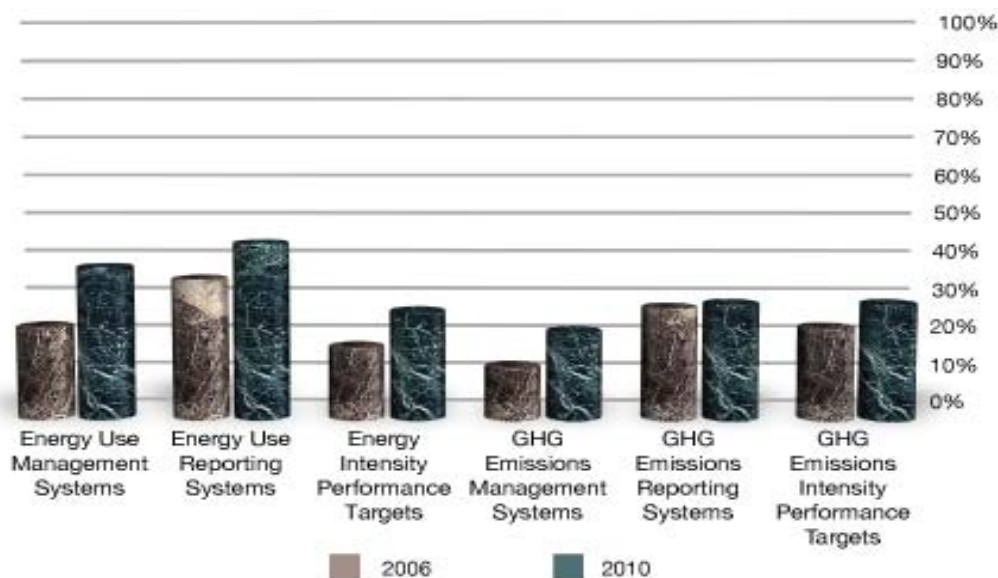


Figure 4: Energy Use and Greenhouse Gas Emissions Management Assessment, Percentage of Facilities at Level A or Higher (2006-2010)

Aboriginal and Community Outreach (Formerly External Outreach)

A main objective of TSM is to significantly improve the industry's ability to engage with communities of interest (COI) and respond to their needs and concerns. Four performance indicators measure how well member companies are engaging in dialogue with key groups and individuals outside industry on topics of mutual interest.

In 2004, when TSM began, many facilities had informal systems for identifying and responding to COI, but some facilities had none. Since then MAC members have become more engaged with their communities of interest, with 86 percent of facilities that have a formal, documented system in place for identifying COI at the local or site level.

Developing positive relationships with Aboriginal people was also identified as a key objective for TSM, and as a result in 2010 the external outreach performance area was replaced with an Aboriginal and community outreach protocol to reflect the industry's strong commitment to Aboriginal relations. Public reporting under this new protocol will begin this year.

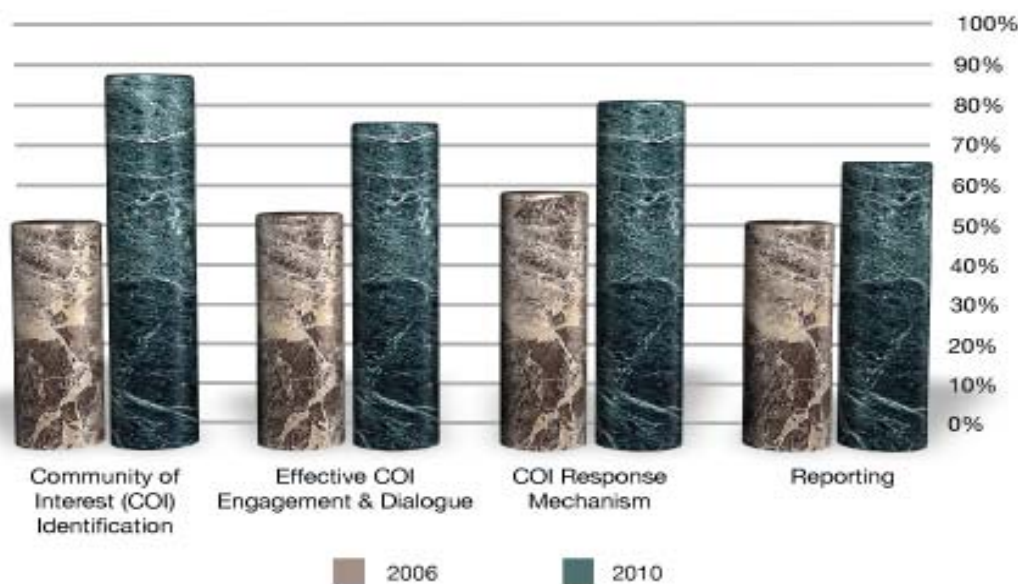


Figure 5: External Outreach Assessment, Percentage of Facilities at Level A or Higher (2006-2010)

Crisis Management Planning

The three performance indicators for crisis management planning are intended to help companies leverage best practices and critically assess their business performance in the area of crisis preparedness. Reporting involves answering “yes” or “no” for each indicator. To answer “yes,” head offices and facilities must meet all the criteria for the indicator.

According to 2010 reporting, over three-quarters of companies and facilities have developed a crisis management plan. Nearly two-thirds have reviewed and updated their plan to ensure that it still meets their needs, reflects the risks associated with their operations and is consistent with best practice in the industry. Two-thirds of companies and facilities have provided crisis management training, including appropriate simulation exercises. This last result shows a strong improvement since 2006, when only 40 percent of companies and facilities achieved this level of performance.

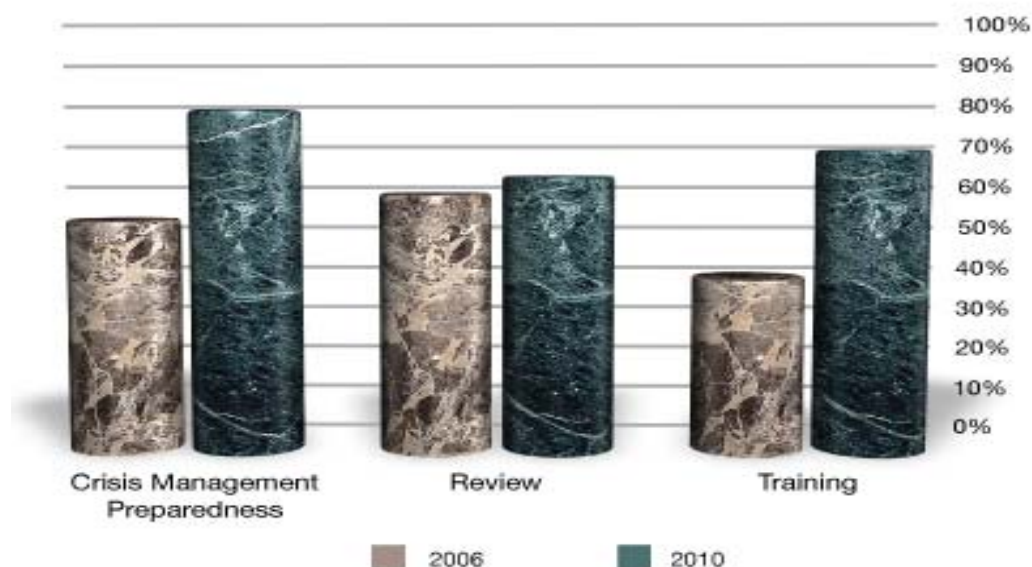


Figure 6: Crisis Management Planning Assessment, Percentage of Companies and Facilities Responding “Yes” (2006-2010)

NEW PROTOCOLS

In 2011 MAC introduced three new performance elements – the first since TSM began in 2004 – that will be integrated into TSM over the next few years. In 2010 members began reporting to MAC their scores for the three elements: biodiversity conservation management, safety and health, and Aboriginal and community outreach (this last element will replace external outreach). By 2013 all MAC members will publicly report their performance under these new elements.

Mine Closure

In 2008 the Towards Sustainable Mining Framework on Mine Closure was adopted by the Mining Association of Canada’s Board of Directors. Since then, the Mine Closure Working Group, which is made up of MAC members, has been working to develop and refine a mine closure protocol to measure company performance, which included four indicators: planning for closure, progressive reclamation, closure and post-closure and financial assurance.

The TSM protocols are meant to go above and beyond the letter of the law. Because mine closure is a heavily regulated activity, the Mine Closure Working Group continues to struggle to define excellence and leadership in a way that does not take a one size fits all approach.

First, there is a concern that mine life could impact a facility’s ability to achieve a level A or higher against the mine closure indicators. For instance the challenge for an operation with a 50 year mine life will be to get the local community engaged early on for an activity that will not occur for half a century.

Opportunities to demonstrate excellence and leadership include incorporating socio-economic criteria and specific requirements to enhance biodiversity around the mine site. The Working Group is struggling to implement these components, while maintaining a set of indicators that can be applied to any operation.

The development of a protocol to address mine closure remains a priority for the MAC membership. Work to further refine specific indicators will continue into 2013.

CONCLUSION

The past 7 years have been exciting for TSM, and much progress has been made. The challenge today is for all of us to maintain the momentum and the enthusiasm for TSM that has been growing across the industry and beyond.

We are already seeing the fruits of our labour. Many of our facilities have improved their performance. For example, over a four year time frame, the percentage of MAC member facilities that were achieving a level A in external outreach and crisis management moved from 50% to 70%. The percentage of facilities achieving a “yes” in crisis management moved from 40% to 80% depending on the specific indicator. Seventy percent of facilities have assigned responsibility for tailings management to an executive member of senior management. Additionally, TSM is reaching out beyond the MAC membership, in 2010 the Mining Association of BC became the first provincial association in Canada to formally adopt all aspects of TSM and is currently in the process of implementation. MAC is also in conversation with other associations who are considering similar adoption.

By aligning our actions, through dialogue, with the values and priorities of our communities of interest, we are reducing uncertainty and building trust. We are no longer second-guessing what our communities are thinking; rather, we are moving forward on issues and concerns that they understand and share, have helped to define and shape, and can support.

In turn, this alignment and dialogue can work over time to reduce the risks of opposition to investment decisions, earn a positive international reputation and perhaps most importantly, open up all kinds of opportunities for collaboration on issues that, until recently, would have seen the industry and their communities of interest acting in virtual isolation. This collaboration has the power to generate many more positive outcomes than could ever be achieved by acting alone.

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