



Action Plan 2003

Status Report

Reports on the activities of working groups arising from Action Plan 2003 of the Mines Ministers' Conference submitted for consideration at the 61st Mines Ministers' Conference

Iqaluit, Nunavut • July 2004



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Introduction

The Status Reports contained hereunder reflect the actions taken on the major issues affecting the mining industry in Canada, under the direction of the provincial, territorial and federal ministers of Mines at the Mines Ministers' Conference 2003.

The reports were prepared either by working groups established by the Intergovernmental Working Group on the Mineral Industry (IGWG) or by officials responsible for a specific issue.

Therefore, the views contained in the reports do not necessarily reflect those of IGWG as a whole.

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Fiscal and Taxation Policy

Provincial/territorial ministers expressed concern that recent changes to the federal income tax structure, particularly the five-year phase-out of the resource allowance in concert with the phase-in of the reduction in corporate income tax rate for resource industries and deductibility of provincial mining taxes, could have a negative impact on the viability of some mining projects. The Minister of Natural Resources Canada agreed to convey this concern to his colleague, the Minister of Finance. Provincial/territorial ministers made a commitment to inform their Minister of Finance of the need to review their respective jurisdiction's tax rates in the context of the federal change to prevent any unintended increases or decreases in provincial and territorial tax payable.

Ministers expressed satisfaction with the effectiveness of the ITCE and were supportive of the federal decision to extend the program to the end of 2004 and to extend until the end of 2005 an allowance to spend money raised in 2004. Nonetheless, Ministers expressed concern that the recovery of exploration investment is still in a fledgling state and could be stalled if encouragement for investment in this sector is not continued. Provincial/territorial ministers were supportive of a proposal to extend the ITCE for an additional three years, as suggested by industry stakeholders, and the Minister of Natural Resources Canada agreed to inform his colleague, the Minister of Finance, of their recommendation to extend the program for an additional three years. Provincial/territorial Ministers made a commitment to inform their Minister of Finance of the opportunity to continue to harmonize provincial/territorial tax credit programs with the federal program.

Ministers mandated the IGWG Working Group on Taxation Issues to continue its deliberations for one more year, to conclude its evaluation of the effectiveness of the ITCE and related provincial programs, to review and clarify expenses that are eligible for Canadian Exploration Expenses, and to analyze the impact of recent changes to the federal Income Tax Act on the mining industry.

BACKGROUND

The Investment Tax Credit for Exploration (ITCE) was introduced in 2000 as a temporary measure to stimulate “grass-roots” mineral exploration as this industry was affected by a global downturn. The program was extended a first time in 2003 to allow time for the tax credit to have a significant impact on exploration levels. Since 2000, the availability of the ITCE, stronger metal prices, and provincial tax measures to stimulate mining investment have all contributed to a significant increase in exploration and deposit appraisal expenditures.

With regard to the federal income tax restructuring for the resource industries, Bill C-48 received Royal Assent on November 7, 2003. This bill contained the following changes to corporate income tax imposed on mining and oil and gas companies' income, to be fully phased in by January 1, 2007:

- A phased reduction in the income tax rate from 28 to 21 percent;
- A deduction for actual provincial and other Crown royalties and mining taxes paid;
- An elimination of the 25 percent resource allowance; and
- A new 10 percent tax credit for qualifying mineral exploration expenditures.

As noted in the 2003 Taxation Issues report, these structural changes may result in incidental increases in provincial taxes paid by the mining industry in several provincial jurisdictions due to the commonality of, and interaction between, federal and provincial corporate income tax bases.

ACTIONS TAKEN

The Minister of Natural Resources, on behalf of the Mines Ministers, wrote to his colleague, the Minister of Finance Canada, requesting a second extension of the ITCE.

The March 23, 2004, budget extended the ITCE for an additional year, until December 31, 2005, and provided that issuing corporations could make expenditures related to these flow-through-share arrangements up to the end of 2006. According to the budget plan, a one-year extension was allowed to provide companies with ample time to plan their transition to a situation where the federal tax credit will no longer be available.

Ontario, Manitoba, Saskatchewan and British Columbia adjusted their own tax credit programs accordingly so as to remain harmonized with the federal one. Quebec has increased the deduction linked to flow-through shares and has made flow-through shares a permanent feature of Quebec taxation.

In response to the federal reform of resource taxation, Alberta and Quebec will keep the current resource provisions unchanged until December 31, 2006, at which time they will eliminate the resource allowance (subject, in the case of Quebec, to a review of the impact). Ontario will maintain the current resource allowance rules indefinitely for Ontario corporate income tax calculations.

The IGWG Working Group on Taxation Issues (working group) held a number of meetings during the review period, including a meeting with national and regional industry associations in March 2004 at which industry views were expressed on a wide range of tax issues. The working group also includes observers from Finance Canada and the Canada Revenue Agency (CRA).

A report entitled *Taxation Issues for the Mining Industry: 2004 Update* has been prepared and will be tabled at the 2004 Mines Ministers' Conference. The report presents a summary of the government and industry discussions on the following issues:

- Flow-through shares for mineral exploration;
- Clarifying or enhancing the income tax treatment of exploration-related expenses; and
- Federal income tax restructuring for the resource industries.

The report represents the consensus views of the working group as a whole. In addition, the views and recommendations of individual provinces and industry associations are presented.

CONCLUSIONS

After two extensions of the ITCE, exploration expenditures have increased significantly. Nevertheless, industry associations have requested a further extension of the ITCE. The working group is generally of the opinion that the rationale for a further extension of the federal program would benefit from a clear demonstration that the original conditions leading to the introduction of the program still prevail or that the consideration of new factors requires such an extension.

With respect to the income tax treatment of exploration-related expenses, more detailed knowledge of the size and variability of the costs for which industry has requested a more advantageous tax treatment is required to assist in the analysis of the issue. Also, consideration should be given to options other than inclusion in Canadian Exploration Expenses. A meeting among industry, Finance Canada, NRCan and the CRA will take place in the fall to discuss ways to address these issues.

Federal reform of resource taxation is now in its second year of the five-year transition period. The main outstanding issues relate to:

- the effect of federal changes on provincial/territorial income tax payments in provinces that have not yet proposed adjustment measures; and
- uncertainty about the deductibility of certain types of mining taxes and Crown royalties under the provisions of Regulation 3900 of the federal *Income Tax Act*.

The Department of Finance is consulting with industry on the latter issue.

RECOMMENDATIONS

Provincial and territorial ministers should continue to consult with their respective Finance colleagues on the effect of the federal tax changes on their mining tax regimes in order to avoid any unintended increase or decrease in taxes paid by the mineral industry.

It is recommended that the working group continue to provide analysis and advice to the Mines Ministers on the fiscal and taxation issues that remain unresolved. The mandate of the working group should accordingly be extended until the end of the transition period for federal tax reform in 2007.

Orphaned and Abandoned Mine-Site Rehabilitation

Ministers continued to express their strong support for the National Orphaned and Abandoned Mines Initiative (NOAMI) and were pleased with the progress that has been made by the advisory committee and task groups. Ministers and stakeholders' representatives agreed that the work to date provides a good basis for going forward with this initiative and were generally supportive of the Action Framework recommended by the advisory committee. Ministers agreed to continue to support the NOAMI process to the extent that budgets and available human resources allow, and asked the advisory committee and task groups to immediately undertake the following actions:

- 1. Develop a policy framework for reclamation standards;*
- 2. Develop intergovernmental cost-sharing arrangements to address remediation at high-priority sites;*
- 3. Complete guidelines for jurisdictional legislative reviews with respect to collaboration, liability and funding to ensure that approaches across jurisdictions are consistent, certain, transparent, coordinated and efficient;*
- 4. Establish guidelines for facilitation and coordination of voluntary reclamation; and*
- 5. Establish guidelines for site assessment and prioritization.*

Ministers agreed that, following on successful delivery of the initial five items in the action framework, implementation steps extending to 2007 and perhaps beyond would involve:

- 6. Implementing a legislative/policy framework following completion of a legislative review; and*
- 7. Developing ongoing processes/mechanisms for technology transfer and best practices.*

Ministers asked to be updated on the progress towards implementing the Action Framework at the 2004 Mines Ministers' Conference.

BACKGROUND

The legacy of orphaned/abandoned mines (O/AMs), with the associated environmental liability, human health concerns and the financial costs of clean-up, is a serious issue facing Canada.

In 1999 and 2000, a number of stakeholders put forth requests to the Mines Ministers to establish a joint industry-government working group, assisted by other stakeholders, to review the issue of orphaned/abandoned mines. The Ministers supported this initiative and requested that a multi-stakeholder workshop be organized to identify key issues and priorities.

In 2002, Mines Ministers signaled their commitment to address this serious environmental issue with the establishment of the National Orphaned/Abandoned Mines Initiative (NOAMI).

NOAMI is a cooperative Canadian program that is guided by an advisory committee consisting of the mining industry, federal/provincial/territorial governments, environmental non-government organizations and First Nations.

The committee's role is to assess key issues and put forward recommendations to Mines Ministers concerning collaborative approaches and partnerships in the implementation of remediation programs across Canada.

STATUS

At their annual meeting in Halifax in 2003, Mines Ministers endorsed recommendations put forward by NOAMI, including two key priority areas for immediate action: 1) development of intergovernmental cost-sharing arrangements to address remediation at high-priority sites; and 2) development of a policy framework that addresses the legislative/regulatory issues associated with specific challenges presented by orphaned/abandoned mines.

Intergovernmental Cost-Sharing Arrangements

A NOAMI-commissioned review of funding approaches concluded that while no single approach appears likely to constitute a complete solution to the clean-up of orphaned/abandoned mines in Canada, immediate steps could be taken by governments to enhance capacity to address remediation at key sites.

In its budget of March 23, 2004, the federal government announced a total of \$4.0 billion in funding to be directed toward remediation of contaminated sites. Of this, approximately \$3.5 billion is to be focused on sites for which the Government of Canada is responsible. The remaining \$500 million is to be focused on "other sites" for which the Government shares some responsibility, such as the Sydney Tar Ponds in Nova Scotia (to which \$280 million has been committed).

NOAMI has recently written to the Minister of Environment Canada and the Minister of Natural Resources Canada requesting that consideration be given to making funds available for programs to support federal/provincial/territorial remediation efforts for orphaned/abandoned mines.

This provides a potential opportunity for developing intergovernmental cost-sharing arrangements for the remediation of orphaned/abandoned mines.

Policy Framework to Address Legislative/Regulatory Issues

A NOAMI study of legislative and institutional barriers to collaboration has highlighted the need to develop a policy framework that guides the application of federal/provincial/territorial (F/P/T) regulations in the remediation of orphaned/abandoned mines. While there are well-established instruments to guide the development and closure of active mines, the unique challenges associated with the remediation of sites that were developed and closed decades ago have not been resolved.

At their annual meeting in Halifax in 2003, Mines Ministers directed NOAMI to complete guidelines for jurisdictional legislative reviews with respect to collaboration, liability and funding to ensure that approaches across jurisdictions are consistent, certain, transparent, coordinated and efficient.

This document has now been completed and is tabled for distribution and action by Mines Ministers in their respective jurisdictions.

These guidelines will be used by the jurisdictions to evaluate their own policies with respect to collaboration, liability and funding. They are intended to assist jurisdictions in completing a review of legislation (acts and regulations) and related practices (such as permitting, licensing and approval processes) that relate to:

- Contaminated sites;
- Operating mine sites; and
- Orphaned/abandoned mine sites.

The purpose of this review is to provide an accurate synopsis of the current regulatory environment and to assist in the development of a consistent, transparent, coordinated and efficient legislative framework for the management of orphaned/abandoned mine sites in Canada.

The jurisdictions are to report back to NOAMI on their review and to identify actions they have taken. NOAMI will synthesize responses and develop a best practices approach to legislative/regulatory requirements.

RECOMMENDATIONS

- Mines Ministers approach Environment Canada to seek program funds as part of the recently announced funding for contaminated sites, specifically for the development of F/P/T cost-sharing arrangements for the remediation of orphaned/abandoned mines.
- Ministers endorse the guidelines for legislative review tabled by NOAMI and instruct their respective ministries to complete the review and report results back to NOAMI within six months.
- Ministers support the ongoing activities of NOAMI as outlined in their detailed work plan (2003).

Aboriginal-Industry Partnerships

Ministers agreed that, at the 2004 Mines Ministers' Conference, there will be an extensive roundtable discussion on the progress achieved and next steps to increase Aboriginal participation in minerals and metals activities.

ACTIONS TAKEN

The Mining Association of Canada and the Canadian Aboriginal Minerals Association, in collaboration with Natural Resources Canada, hosted an Aboriginal-Mining Industry Round Table, which took place on March 16 and 17, 2004, in Edmonton. The Round Table report, to be tabled at this year Mines Ministers' Conference, recognizes the importance of ongoing communications among the industry, Aboriginal people and governments to support efforts in building relationships and partnerships.

An Information Toolkit on Mining for use by Aboriginal communities is currently being developed by the Canadian Aboriginal Minerals Association in collaboration with the Prospectors and Developers Association of Canada, The Mining Association of Canada, Natural Resources Canada, and Indian and Northern Affairs Canada. The Toolkit should be released in February 2005.

RECOMMENDATIONS

Over the years, it has been shown that increasing Aboriginal participation in the minerals industry, specifically through employment and business opportunities, has been a win-win situation for both mining companies and the local Aboriginal people.

The mining industry, the Aboriginal community and governments should continue to work together and to pursue the development of integrated strategies aimed at increasing Aboriginal participation in exploration and mining-related activities.

Mines Ministers should discuss the future of the sub-committee on Aboriginal participation in mining with a goal of providing direction to the Intergovernmental Working Group on the Mineral Industry.

APPENDIX

PROVINCIAL/TERRITORIAL UPDATES

ONTARIO

Mining Cycle Video/Interactive DVD

The Ontario Ministry of Northern Development and Mines (MNDM), along with Natural Resources Canada, is producing a video/interactive DVD and an information package depicting the mining cycle and related opportunities for Aboriginal people in Ontario's far north. Following completion of the video in the fall of 2004, the products will be delivered to Aboriginal communities through a variety of fora, including workshops.

First Nations Liaison Officer

This position is staffed by an Aboriginal person from Ontario and the core responsibilities include working with Aboriginal communities in northern Ontario to better understand prospecting, minerals exploration, mining and related legislation. Outreach includes delivery of prospecting courses, presenting at various minerals exploration and Aboriginal information sessions, and being an ongoing resource for Aboriginal communities. This person spends approximately 75% of his time flying to northern communities to deliver prospecting courses. These courses prepare students to apply and actively prospect (e.g., stake claims, etc.), option properties, etc. The liaison officer remains a key contact and resource after the courses are delivered. The provision of these services is triggered by community request and provided as the schedule and budget allow.

Glossary of Geological and Mining-Related Terms

MNDM partnered and co-funded two glossaries of geological and mining-related terms:

- MNDM/De Beers Canada - a glossary of geological and mining-related terms was jointly funded by MNDM and De Beers Canada. The Cree and Ojibway Cultural Centre led the process to translate geological, mining and related administrative words from English to Ojibway, Oji-Cree and Cree.
- MNDM-Eabametoong First Nation - a glossary of geological and mining-related terms was jointly funded and developed by MNDM and the Eabametoong First Nation as part of a formal "Communication Project." The Eabametoong First Nation was engaged to design and deliver a community-based process to translate geological, mining and related administrative words from English to local Ojibway phonetics and syllabics. Each term is accompanied by an image or drawing to illustrate the meaning of the word or phrase.

Provide Expert Local Geoscience Knowledge and Advice on the Mining Act

Transfer expert geoscience knowledge and advice about the local and regional geology, mineral resources and Ontario's *Mining Act*. Advice includes insight on business options for a community to consider and on companies that are actively exploring in an area. The provision of these services is triggered by community request.

Facilitate Resolution of Mineral Industry-Related Permitting

Facilitation and provision of information to help mitigate hurdles presented by other ministries, administrative and regulatory requirements, and special interest groups such as First Nations, Partnerships for Public Lands, etc.

Communication Projects

MNDM has entered into communication and relationship-building projects to lay a foundation for discussion, awareness and understanding between government and the First Nations community and to increase First Nations awareness about geology, minerals exploration, and mining. With enhanced understanding, the First Nations community has commented they are better prepared to engage with exploration industry. Two of these communication projects have resulted in signed Memoranda of Cooperation (Minister of MNDM and Chief of First Nations) that commit MNDM and First Nations to work together to design, develop and implement a plan with accompanying resources/products to increase awareness. For example, in Eabametoong, one of the products created was a glossary of geological and mining-related terms (see above). The youth at the school were charged with finding pictures to represent their meaning and understanding of the English words, the elders were engaged to help define and translate the words into Ojibway syllabics and phonetics, and community/clan meetings were held to discuss the translated words. Other products under this agreement included presentations in the schools on geology and "mining in your life," prospector courses, field trips and presentations at band meetings, open houses, and graphic-rich story boards. The First Nations were invited and participated (posters and talks) at mineral industry fora and government information sessions. Aboriginal awareness sessions were also implemented and delivered within MNDM to increase awareness within government about the First Nations culture and way of life.

PanCanadian Diamond Strategy

Ministers were pleased with the success of the first National Roundtable on Canada's Diamond Industry in Edmonton. Discussion focused on the need to maximize the benefit to Canadians from all stages of the emerging diamond industry.

The federal government pointed out the integral role that it has played in getting existing diamond mines up and running, and agreed that all jurisdictions and orders of government should work together rather than separately in advancing a Canadian diamond position on the world market. Provincial/territorial ministers requested that any associated studies by the federal government be coordinated with the National Diamond Strategy to ensure a strong and competitive diamond industry that will benefit all Canadians.

Provincial/territorial ministers announced the process by which they will lead the development of a National Diamond Strategy, as mandated by First Ministers. Ministers approved and released a mandate, work plan and the document entitled "Towards a National Diamond Strategy." The Strategy will be developed in consultation with all stakeholders and will consider a range of issues in seven sectors: diamond exploration, mining, rough diamonds, polished diamonds, jewellery, diamond retail sales, and diamond tourism.

Provincial/territorial ministers directed that officials form a National Diamond Strategy Committee comprising representatives of all interested provincial or territorial jurisdictions and facilitated by the Department of Resources, Wildlife and Economic Development, Government of Northwest Territories, and the ministère des Ressources naturelles, de la Faune et des Parcs du Québec. The mandate of the Committee is to develop an action plan for a National Diamond Strategy that maximizes the benefits to Canadians from all stages of the emerging diamond industry. Ministers asked that the Committee report back at the 2004 Mines Ministers' Conference with specific recommendations, action items and their anticipated impacts.

ACTIONS TAKEN

During their annual conference in July 2003, the provincial and territorial premiers directed their ministers responsible for mining to develop an action plan for establishing a PanCanadian Diamond Strategy. Its mandate is to propose an action plan that will maximize the benefits for Canadians from all stages of the emerging diamond industry. Premiers Kakfwi, of the Northwest Territories, and Charest, of Québec, agreed to facilitate development of the action plan by the provinces and territories.

The Steering Committee's mandate and work plan were approved at the Mine Ministers' Conference in Halifax on September 30, 2003. Québec and the Northwest Territories co-chair the Steering Committee. Interested provinces and territories participated in the Steering Committee and in working groups. Seven working groups were therefore set up to study various aspects of the diamond industry, including:

- Diamond Exploration, chaired by Manitoba;
- Mining, chaired by Ontario;
- Valuation and Marketing of Rough Diamonds, chaired by Québec;
- Polished Diamonds, chaired by the Northwest Territories;

- Jewellery, chaired by Nunavut;
- Diamond Retail Sales, chaired by the Northwest Territories; and
- Diamond Tourism, chaired by Saskatchewan.

The working groups carried out various consultation activities with the industry, the federal government, and representatives of interest groups throughout Canada and then presented their findings during the National Round Table held in Yellowknife on May 26 and 27, 2004.

An action plan for the National Diamond Strategy was subsequently developed based on the recommendations of each working group for presentation to the provincial and territorial mine ministers at their annual breakfast meeting, which is being held in Iqaluit, Nunavut, on July 20, 2004.

The ministers will then decide how they intend to follow up on the Steering Committee's recommendations.

Cooperative Geological Mapping Strategies

Ministers agreed with industry stakeholders on the value of the national geoscience database in ensuring Canada's competitive position for global exploration dollars and recognized geoscience as part of the innovation agenda with respect to the minerals industry. Recognizing the need for long-term strategies for funding geoscience activities in their respective jurisdictions and the value of a long-term strategic plan in helping secure this funding, Ministers asked the National Geological Surveys Committee to complete the implementation plan for the Cooperative Geological Mapping Strategies Across Canada as a matter of priority.

ISSUE

The 10-year implementation plan for the Cooperative Geological Mapping Strategies Across Canada has been completed. The National Geological Surveys Committee is seeking ministerial endorsement to proceed.

BACKGROUND

In 1998, an industry-led task force reported to Mines Ministers that the geoscience knowledge provided by federal, provincial and territorial geological surveys was one of Canada's key comparative advantages in attracting investment in mineral exploration in an increasingly competitive global market. It warned, however, that this advantage had been put at risk by the protracted decline in survey funding. At the request of Ministers, the task force submitted a follow-up report in 1999 entitled *Government Geological Surveys: How Much Is Enough?*, which established a target for renewed investment in government geological surveys over a 10-year time frame.

In response, Ministers directed the National Geological Surveys Committee (NGSC) to develop a collective strategy to achieve the target. Ministers unanimously endorsed the resulting Cooperative Geological Mapping Strategies Across Canada (CGMS) document in 2000 and, furthermore, undertook to seek new funding within their jurisdictions to make CGMS a reality. Although there have subsequently been some incremental funds both federally (e.g., Targeted Geoscience Initiative) and in a number of provinces and territories, it has not been possible to secure funding of the magnitude and duration necessary to achieve the target set out by the task force.

At the 2003 Mines Ministers' Conference, Ministers recognized the need for long-term strategies for funding geoscience activities in their respective jurisdictions and the value of a long-term strategic plan in helping secure this funding, and directed the NGSC to complete the implementation plan for the Cooperative Geological Mapping Strategies Across Canada as a matter of priority.

ACTIONS TAKEN

In response to direction from the Ministers, extensive consultations and analysis were undertaken in 2003 by the NGSC to identify a series of common policy goals, re-assess the geoscience knowledge gaps in each jurisdiction, and define a portfolio of strategic initiatives to address these priorities. The resulting Implementation Plan is now complete (see appendix).

RECOMMENDATIONS

It is recommended that:

- Ministers endorse the Implementation Plan.
- Ministers continue to work towards making the Cooperative Geological Mapping Strategies Across Canada a reality.

NEXT STEPS

Once the implementation plan is endorsed by Ministers, a key next step is to develop the operational plan or “technical blueprint” for CGMS. The NGSC will engage industry, academic and community stakeholders with the goal of defining the CGMS project portfolio and to pursue development of the technical and financial partnerships required to carry them out.

APPENDIX

IMPLEMENTATION PLAN

EXECUTIVE SUMMARY

Challenge

In 2003, at their annual meeting in Halifax, Canada's Mines Ministers agreed with industry stakeholders on the value of the national geoscience database in ensuring Canada's competitive position for global exploration dollars and recognized geoscience as part of the innovation agenda with respect to the minerals industry. Recognizing the need for long-term strategies for funding geoscience activities in their respective jurisdictions and the value of a long-term strategic plan in helping secure this funding, Ministers asked the National Geological Surveys Committee (NGSC) to complete the implementation plan for the Cooperative Geological Mapping Strategies Across Canada (CGMS) as a matter of priority.

Deliverable

In response to the direction from Ministers, the NGSC has identified a series of common policy goals, reassessed the geoscience knowledge gaps in each jurisdiction, and defined a portfolio of strategic initiatives to address these priorities. Moreover, the role of the CGMS in addressing energy issues has been clarified. The resulting plan and schedule for implementation of the CGMS are summarized in this document.

Decisions Required

In order for the Cooperative Geological Mapping Strategies Across Canada to proceed, the NGSC seeks the following from Ministers:

- Endorsement of the Cooperative Geological Mapping Strategies Across Canada implementation plan and timelines; and
- A commitment to work toward making the Cooperative Geological Mapping Strategies Across Canada a reality.

Contributing to Canadian Prosperity

Improving the quality of life of Canadians is a priority shared by governments across this country. Secure and affordable energy supplies, sustainable resource-based communities, self-reliant Aboriginal peoples, and sound environmental stewardship figure prominently among government policy goals in most jurisdictions. Mineral and energy resources underpin prosperity in much of Canada and constitute the only significant opportunities for economic growth in many rural, remote and northern parts of the country. Canada possesses significant untapped mineral and energy potential. The recent discoveries of diamonds in the

Over the next 20 years, the diamond mines in the Northwest Territories are expected to contribute \$28 billion to the GDP, \$5 billion in federal tax revenues, and 125 000 person-years in direct and indirect employment (50% of which will be south of sixty).

Canadian Shield and of gas hydrates in the North and offshore are but two examples that demonstrate that exploration has barely “scraped the surface.”

Mineral exploration expenditures have increased in Canada since 2000, reflecting both improved commodity prices and the Investment Tax Credit for Exploration. However, exploration has focused on diamonds and gold, and has not achieved the levels required to sustain base-metal reserves (Figure 1). This decline in reserves is occurring in the face of increasing global demand for metals and, if the trend continues, will mean both lost opportunities for Canada and economic disruption for many resource-based communities.

Energy supply also represents a challenge. According to various National Energy Board projections, conventional oil and gas production has either peaked already or will do so in the near future. Canada will need to rely increasingly on unconventional resources such as oil sands, coal bed methane and “tight gas.” At the same time, it will be important to optimize recovery of conventional resources.

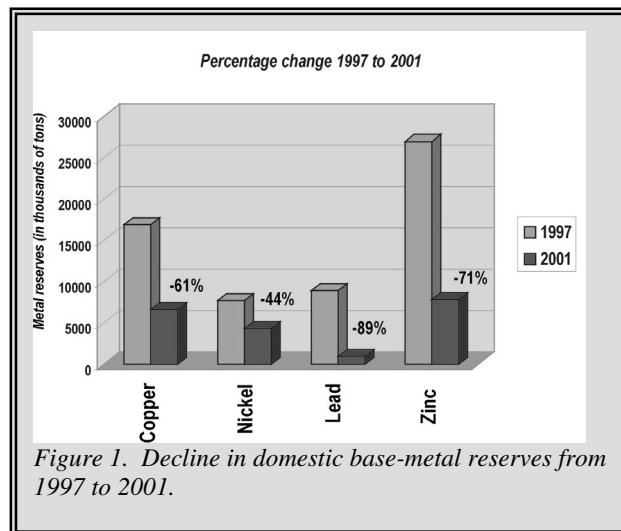


Figure 1. Decline in domestic base-metal reserves from 1997 to 2001.

Meeting the Challenge Through Public Geoscience

Canada’s potential for new mineral and energy resources is arguably as great as that of any country in the world. In order to translate that potential into long-term employment and sustained prosperity, however, new resources must be discovered. In today’s global economy, a modern, accessible public geoscience knowledge base is recognized as a key competitive advantage in profiling a jurisdiction’s geological potential and attracting both domestic and foreign investment in resource exploration and development. Public geoscience is also essential for informed resource development policy and land-use decisions.

Studies have consistently shown that investment in public geoscience stimulates private sector investment in exploration and development. As a rule of thumb, every \$1 million of government investment to enhance the geoscience knowledge base is expected to stimulate \$5 million of private sector exploration expenditures, which in turn will result in the discovery of new resources with an *in situ* value of \$125 million.

The Australian government acknowledges that 90% of oil exploration success in Australia since 1960 has been directly underpinned by public geoscience and advice obtained from its geological surveys. Oil and Gas Journal, April 2004

Canadian industry and non-government organizations have repeatedly alerted governments to the fact that Canada is faced with significant public geoscience knowledge and capacity gaps, compounded by inadequate human and financial resources to fill them. Recognizing the need for action, Canada's Mines Ministers unanimously endorsed the *Cooperative Geological Mapping Strategies Across Canada* (CGMS) proposal to renew the public geoscience knowledge base at their annual meeting in September 2000. In 2003, the Ministers directed the National Geological Surveys Committee (NGSC) to develop the implementation plan for the CGMS.

"If prospectivity, land tenure and the socio-political environment are equal among competing jurisdictions, the geoscience knowledge base will be the deciding factor in persuading companies to invest."
The Mining Association of Canada 2002

Getting On With The Job: CGMS Implementation Plan

The CGMS implementation plan developed by the NGSC, summarized in Table 1, defines a suite of strategic initiatives and project activities that target three principal outcomes:

- A secure energy supply for Canada;
- Prosperous resource-based communities; and
- New economic development opportunities.

The total incremental investment required to achieve these outcomes is approximately \$500 million over 10 years. As agreed by Ministers in 2000, funding allocations in each province and territory would be determined through bilateral negotiations once the level of federal investment in the CGMS is determined.

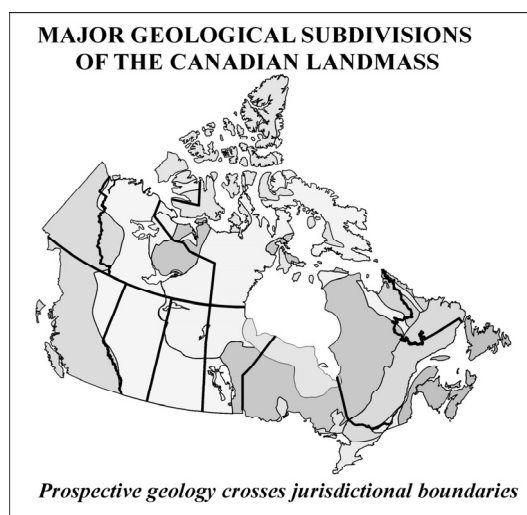
This investment would approximately double the rate of production of the geoscience maps and data of greatest relevance to mineral and energy exploration. Benefits in terms of increased private sector exploration would begin to accrue within the first two years of the CGMS.

Table 1. Implementation Plan for Cooperative Geological Mapping Strategies Across Canada

Target Outcomes	Secure energy supply for Canada	Prosperous resource-based communities and regions	New economic development opportunities
Medium-Term Outcomes	<ul style="list-style-type: none"> Competitive investment climate for resource exploration across Canada Informed policy and land-use decisions 		
Strategic Initiatives	Enhancing and diversifying supply	Sustaining mining districts	Geoscience to promote new rural and remote resource development
Outputs	3D subsurface maps, basin models, resource assessments	4D geoscience maps and models	Regional geological maps and supporting geoscience data
Project Activities	Regional mapping; studies of fluid flow, enhanced oil recovery, and CO ₂ and acid gas storage; petroleum systems analysis (including non-conventional gas)	Deposit- to mineral camp-scale geological mapping, metallogenic studies, application of deep-search techniques	Regional surficial, bedrock, geochemical and geophysical mapping of the surface and subsurface
	Groundwater geoscience investigations for oil sands and unconventional gas development		Regional metallogenic and supporting geoscience studies
	Support studies for infrastructure, underground storage and petroleum transport		

A key element in the CGMS implementation plan is a regional approach to public geoscience. This approach is important because prospective geology that either hosts or influences the distribution of mineral and energy resources crosses jurisdictional boundaries. A regional approach to the CGMS also presents the opportunity for complementary capacity and knowledge-sharing among the geological surveys, universities and industry through the creation of innovative technical and funding partnerships. Geoscience needs and gap analyses, recently undertaken by the provinces and territories and the Geological Survey of Canada, will form the basis for jurisdictional commitments to the CGMS initiative. An innovative approach to knowledge delivery will ensure more effective discovery and utilization of public geoscience by end-users.

An ancillary benefit of the CGMS will be a general strengthening of the structure and coordination of public geoscience across Canada. This will lead to a substantial contribution to the training of young Canadians in order to meet the growing need for highly qualified personnel throughout the geological resource sector. Where appropriate, this training will also embrace the needs and capacity of Aboriginal people to participate fully in the geological resource-based economy and associated industries.



Assuring Accountability and Transparency: CGMS Governance Framework

Canada's geological surveys have an excellent record of productive collaboration and the CGMS will, to the extent possible, make use of existing governance mechanisms. The Cooperation Committee (or equivalent) in each province and territory, comprising senior managers from federal and provincial or territorial departments carrying out geoscience programs in that province or territory, will be responsible for establishing priorities for collaborative projects and overseeing their implementation. These Cooperation Committees will seek advice on project priorities and feedback on project delivery from industry and other stakeholders, either through existing Technical Liaison Committees or through other representative groups appropriate for the jurisdiction.

The NGSC will coordinate the implementation of the CGMS across Canada. In particular, it will promote innovative, multilateral approaches to broadly regional geoscience questions. A CGMS Advisory Committee, chaired by industry leaders, will be established with membership drawn from the technical liaison committees in each jurisdiction, as well as from major industry associations. The CGMS Advisory Committee will review the overall implementation of the strategies from the standpoint of alignment with CGMS goals and delivery of results, and report on progress annually to Mines and Energy Ministers, thereby ensuring transparency and accountability to stakeholders and Canadians.

Implementing CGMS: Next Steps

The CGMS implementation plan represents the culmination of extensive consultations and analysis undertaken over the last year by the National Geological Surveys Committee. These activities are summarized in Table 2, which also presents actions that will be required in the coming months in order to implement CGMS in April 2005.

Although the NGSC has already benefited from considerable input from industry and other stakeholders concerning the gaps in the geoscience knowledge base and the kinds of activities that would be required to fill those gaps, it has not proceeded to the point of identifying and prioritizing the specific projects that would be pursued under the CGMS. Contingent on ministerial endorsement of the implementation plan, the NGSC will engage industry, academic and community stakeholders with the goal of defining the CGMS project portfolio, and developing the technical and financial partnerships required to carry them out. In other words, a key next step is to develop the operational plan or “technical blueprint” for the CGMS.

Public Geoscience – its about more than exploration

In addition to underpinning mineral and energy exploration, public geoscience contributes to other policy priorities, including

- *Delineating and managing groundwater resources*
- *Planning critical infrastructure (e.g., roads, railways, pipelines and power transmission lines)*
- *Identifying candidate areas for parks or other protected status*
- *Managing the risk posed by natural hazards such as floods, earthquakes and landslides*
- *Managing the risk posed by metals in the environment*

<i>Table 2. Implementation Schedule for Cooperative Geological Mapping Strategies</i>		
Dates	Activity	Results (Actual/Anticipated)
March – October 2003	Review of public geoscience needs and knowledge gaps in each provincial, territorial and federal jurisdiction	Potential contributions to CGMS established in context of issues and priorities of governments
October – December 2003	Communication to clients and stakeholders at jurisdictional geoscience conferences	Awareness of CGMS established with clients and stakeholders
March – June 2004	Regional, multi-jurisdictional workshops	Potential strategic outcomes and initiatives defined
June 2004	National Geological Surveys Committee workshop	CGMS Implementation Plan for Ministers drafted
July 2004	CGMS Implementation Plan presented to Ministers at the 2004 Energy and Mines Ministers' Conference	Ministers' endorsement of Implementation Plan
September 2004	Consultations with industry, academia and community stakeholders and partners through provincial/territorial advisory committees	Finalization of strategic initiatives and outputs
October – December 2004	Communication of CGMS Implementation Plan to stakeholders at jurisdictional geoscience conferences	Acceptance of the CGMS Implementation Plan by stakeholders
October 2004 – February 2005	Presentation of CGMS Implementation Plan to governments	Request to support participation in CGMS considered by governments
Spring 2005	Federal, provincial and territorial budgets released	Funding for CGMS announced
Spring 2005	CGMS Advisory Board established	Mechanism for transparency and accountability established
Spring 2005	Bilateral planning of first CGMS projects	Milestones established for first 3 years of 10-year Implementation Plan
April 2005	Implementation of CGMS	Operational plan for fiscal year 2005-06 implemented

Conclusion

The important role that public geoscience plays in ensuring a competitive investment climate for resource exploration is widely acknowledged. The development of the CGMS was undertaken at the direction of Ministers in response to strong representations from industry and other stakeholders, who have emphasized that Canada's long-standing comparative advantage in this respect had been put at risk. The implementation plan summarized here represents a truly cooperative undertaking on the part of Canada's provincial, territorial and federal geological survey agencies, with substantial input from stakeholders. The CGMS, when implemented, will enhance the quality of life of Canadians by contributing to prosperous resource-based communities, to new economic development in rural, remote and northern Canada, and to security of energy supply.